

INTERNATIONAL DIETETICS AND NUTRITION TERMINOLOGY (IDNT) REFERENCE MANUAL:

**Standardized Language for the
Nutrition Care Process**

Fourth Edition

**INTERNATIONAL DIETETICS AND NUTRITION TERMINOLOGY (IDNT)
REFERENCE MANUAL: Standardized Language for the Nutrition Care Process**
Fourth Edition

ISBN: 978-0-88091-467-3

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Several additional resources, including the Nutrition Assessment Matrix and Nutrition Diagnosis and Etiology Matrix are available on the Academy's website (www.eatright.org). Members select Practice and Nutrition Care Process from the left navigation menu. Non-members select Health Professionals, Resources for Health Practitioners and Nutrition Care Process from the left navigation menu.

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Publication Highlights

Publications Related to the Nutrition Care Process

Since the Nutrition Care Process and Model development, the Academy of Nutrition and Dietetics has released several publications related to the Nutrition Care Process (NCP). The original article published in 2003 described the complete Nutrition Care Process (1). This article was updated in 2007–2008 by a subcommittee of the Nutrition Care Process Standardized Language (NCP/SL) Committee chaired by Annalynn Skipper, PhD, RD. Part one of the updated article was published in the July 2008 issue of the *Journal of the American Dietetic Association* (2). The second part of the article was published in August 2008 in the *Journal of the American Dietetic Association* (3).

The first publication to describe the complete standardized language for the dietetics profession was the *International Dietetics and Nutrition Terminology (IDNT) Reference Manual*, Second Edition (4). The Third Edition included ten new nutrition diagnoses. Four of these are predictive—that is, the food and nutrition professional predicts (based on observation, experience, or scientific reason) that future intake will be suboptimal or excessive. In addition, nutrition diagnosis etiologies were grouped into ten categories and the categories were defined (5).

This Fourth Edition describes the NCP and includes the standardized language or terminology for each step in the NCP. The major changes in this publication are as follows:

- Addition or separation of terms as a result of initial Academy work toward including the concepts from the Nutrition Care Process and the specific terms into standardized informatics languages and language systems, such as the Systematized Nomenclature of Medicine International (SNOMED), Logical Observation Identifiers Names and Codes (LOINC), and United Medical Language System (UMLS).
- Addition of terms and refinements to reference sheets in response to 26 submissions for terminology additions or modifications by practitioners in the U.S. and internationally.
- Refinement of the content for improved use for all food and nutrition professionals in the U.S. and internationally, including U.S. and metric measures, addition of directional arrows for lab values to provide information on the direction of change, generic descriptors and specific examples for reference standards and resources, addition of vitamin and mineral intake units used outside of the U.S. and Canada, and clarification of specific words used.
- Revision and addition of content as a result of suggestions by U.S. and international authors of a new NCP Toolkit for Public Health/Community Nutrition.
- Addition of the Academy Unique Identifier, a five-digit number following the alpha-numeric term code for all three NCP Terminologies (e.g., Total energy intake, FH-1.1.1.1, 10005). Further information about the purpose and use of the Academy Unique Identifier follows.

New in This Publication

Nutrition Assessment

The Nutrition Assessment standardized language is **REVISED**.

The Academy is continuing to work toward including the concepts from the Nutrition Care Process and the specific terms into standardized informatics languages and language systems, such as the SNOMED, LOINC, and UMLS. As a result of the initial work, new terms have been added or terms have been separated within the terminology lists. Changes to Nutrition Assessment include:

- Separate terms for documenting intake of the bioactive substances, plant stanol esters (FH-1.4.2.1), plant sterol esters (FH-1.4.2.2), psyllium (FH-1.4.2.4) and β glucan (FH-1.4.2.5)
- Additional terms for documenting vitamin intake of pantothenic acid (FH-1.6.1.12) and biotin (FH-1.6.1.13)

- Additional terms for documenting mineral intake of sulfate (FH-1.6.2.9), fluoride (FH-1.6.2.10), copper (FH-1.6.2.11), iodine (FH-1.6.2.12), selenium (FH-1.6.2.13), manganese (FH-1.6.2.14), chromium (FH-1.6.2.15), molybdenum (FH-1.6.2.16), boron (FH-1.6.2.17), and cobalt (FH-1.6.2.18)
- Revision of the class Medications and Herbal Supplement Use (FH-3) to include all complementary/alternative medicine products. This change results in deletion of the term Complementary/alternative medicine (CH-2.2.3). The two new subclasses are:
 - Medications (FH-3.1)
 - Complementary/alternative medicine (FH-3.2)
- Separate terms for Procurement of safe food (FH-6.2.2) and Identification of safe food (FH-6.2.6)
- Separate terms Remembers to eat (FH-7.2.7) and Recalls eating (FH-7.2.8)
- Additional terms for documenting laboratory findings related to the minerals boron (BD-1.9.4), chromium (BD-1.9.5), fluoride (BD-1.9.6), manganese (BD-1.9.7), molybdenum (BD-1.9.8), and selenium (BD-1.9.9)

Further term additions or changes may result from this ongoing work with the standardized medical languages and will be published in future editions.

Other changes include:

Addition of the Academy Unique Identifier, a five-digit number following the alpha-numeric term code (e.g., Total energy intake, FH-1.1.1.1, 10005).

- The Academy Unique Identifier is an essential element used by information technology (IT) professionals for data monitoring and tracking in electronic health records (EHRs). Food and nutrition professionals use this number to request data needed for reports and quality improvement.
 - The Academy Unique Identifier is associated with a term and never changes. If the term is modified, then the original term and unique identifier are retired. The new term is assigned a new unique identifier.
 - The unique identifiers do not have a structure. Although unique identifiers were initially assigned in sequential order, there is no order for the identifiers, and they do not have meaning or show relationships between terms. This is in contrast to the IDNT alpha-numeric term codes (e.g., FH-1.1.1.1), which change as the terminology changes and demonstrate relationships between terms and groups of terms.
- Neither the Academy Unique Identifiers nor the alpha-numeric term codes are recommended in nutrition documentation. Food and nutrition professionals should document only the terms (e.g., Total energy intake).

Two new terms have been added as part of the Diet history (FH-2.1) including diets followed by the patient/client due to diagnosed or reported:

- Food allergies (FH-2.1.2.5)
- Food intolerance (FH-2.1.2.6)

One new term has been added within Enteral and parenteral nutrition administration (FH-2.1.4)

- Body position, EN (FH-2.1.4.3)

Clarification that Food and nutrition knowledge (FH-4.1) and Area(s) and levels of knowledge include food and nutrition-related *skills*. Thus, the terms were retitled Food and nutrition knowledge/skills (FH-4.1) and Area(s) and levels of knowledge/skills.

Four new terms have been added within the class Physical Activity and Function (FH-7). All of the new terms are part of a new sub-class, Factors affecting access to physical activity (FH-7.4):

- Neighborhood safety (FH-7.4.1)
- Walkability of neighborhood (FH-7.4.2)

- Proximity to parks/green space (FH-7.4.3)
- Access to physical activity facilities/programs (FH-7.4.4)

Physical disability, mobility and socioeconomic factors affecting physical activity can be documented in the Client History, specifically, Personal data (CH-1.1) and Social history (CH-3.1). Please see the reference sheet for more specific information about how these terms are described.

Glucose/endocrine profile (BD-1.5) is clarified to include specific pituitary hormone tests (growth hormone (GH), adrenocorticotrophic hormone (ACTH), luteinizing hormone (LH) and follicle-stimulating hormone (FSH)) (BD-1.5.10).

Mineral profile (BD-1.9) has additional terms for documenting laboratory findings related to the minerals boron (BD-1.9.4), chromium (BD-1.9.5), fluoride (BD-1.9.6), manganese (BD-1.9.7), molybdenum (BD-1.9.8), and selenium (BD-1.9.9).

Protein profile (BD-1.11) is revised to include carbohydrate-deficient transferrin (BD-1.11.8).

Urine profile (BD-1.12) includes Urine microalbumin as an example of a Urine test (BD-1.12.4).

Nutrition Assessment and Nutrition Monitoring and Evaluation Reference Sheets

Changes to the reference sheets were carefully reviewed by the NCP/SL Committee, members of the Academy's IDNT Advisory Panel, members of the IDNT classification workgroup and experts from the international community. This included review of the Academy's evidence-based practice guidelines by the Academy's Evidence-based Practice Committee.

Content has been refined for improved use by all food and nutrition professionals in the U.S. and internationally. Toward that goal are the following changes:

- Inclusion of the following U.S. and metric measures—fluid volume (ounce [oz]/milliliter [mL]), weight (pound/kilogram [kg]), height (feet and inches/centimeters [cm]), food intake measures (servings/piece, cups/deciliter [dL]/mL, oz/gram [g]/kg, teaspoon [tsp]/tablespoon [tbsp]/mL), food energy (calories/kilocalories [kcal]/kilojoules [kJ]).
- Maintenance of existing laboratory values in the reference sheets with the addition of arrows to provide information on the direction of change. Arrows used with laboratory values are ↑, which represents above reference standard, and ↓, which represents below reference standard.
- Reference standards or resources now contain a generic description, and when available, a specific standard or resource following in parentheses. Examples are dietary reference intake standard (e.g., Dietary Reference Intakes [DRIs]), national food guideline (e.g., US Dietary Guidelines, MyPlate) and diet quality index standard (e.g., Healthy Eating Index).
- Addition of vitamin and mineral intake units used outside of the U.S. and Canada. As an example, the listing for Vitamin A intake included a recommendation to specify the *form* and amount in $\mu\text{g/day}$. This will now reflect a Vitamin A intake recommendation to specify form, μg (micrograms) or RE (retinol equivalents), and frequency of the intake (e.g., twice per day).
- Clarification of specific words used in the manual. As an example, "nutrition support" is used in the manual without a definition. Therefore, nutrition support will be followed by a definition in parentheses: nutrition support (enteral and parenteral nutrition) in the class definition. Enteral and Parenteral Nutrition (ND-2) are defined as nutrition provided through the gastrointestinal (GI) tract via tube, catheter, or stoma that delivers nutrients distal to the oral cavity (enteral) or the administration of nutrients intravenously (centrally or peripherally) (parenteral).

Most of the changes for improved U.S. and international use impact the Nutrition Assessment/Monitoring and Evaluation reference sheets, but the changes occur throughout the manual and impact Nutrition Diagnosis and Nutrition Intervention reference sheets as well.

Other specific changes are noted in the Nutrition Assessment chapter, but highlights include “human milk” as an approved synonym for “breastmilk,” urine microalbumin as an examples of a urine test, and chyle leak as a medical diagnosis within Client History.

Nutrition Diagnosis

The **Nutrition Diagnosis** standardized language is **REVISED**.

There are several specific changes; however, one change important to the step is approval of the synonym **Nutrition Problem** for **Nutrition Diagnosis**. This synonym was suggested by Public Health/Community Nutrition practitioners. The NCP/SL Committee was considering term synonyms as this publication was being prepared. Refer to www.eatright.org/ncp for a complete list of synonyms.

As a result of the work toward including the specific terms into standardized informatics languages and language systems, new terms have been added or terms have been separated within the terminology lists. New nutrition diagnoses include:

- Additional terms for documenting Inadequate vitamin intake of pantothenic acid (NI-5.9.1.12) and biotin (NI-5.9.1.13)
- Additional terms for documenting Excessive vitamin intake of pantothenic acid (NI-5.9.2.12) and biotin (NI-5.9.2.13)
- Additional terms for documenting Inadequate mineral intake of sulfate (NI-5.10.1.9), fluoride (NI-5.10.1.10), copper (NI-5.10.1.11), iodine (NI-5.10.1.12), selenium (NI-5.10.1.13), manganese (NI-5.10.1.14), chromium (NI-5.10.1.15), molybdenum (NI-5.10.1.16), boron (NI-5.10.1.17), and cobalt (NI-5.10.1.18)
- Additional terms for documenting Excessive mineral intake of sulfate (NI-5.10.2.9), fluoride (NI-5.10.2.10), copper (NI-5.10.2.11), iodine (NI-5.10.2.12), selenium (NI-5.10.2.13), manganese (NI-5.10.2.14), chromium (NI-5.10.2.15), molybdenum (NI-5.10.2.16), boron (NI-5.10.2.17), and cobalt (NI-5.10.2.18)
- Separate terms for Overweight/obesity including Overweight, adult or pediatric (NC-3.3.1), Obese, pediatric (NC-3.3.2), and three classes of obesity in adults, Obese, class I (NC-3.3.3), Obese, class II (NC-3.3.4), Obese, class III (NC-3.3.5). Obese, class III also has an approved synonym of “morbid obesity.”
- Inability or lack of desire to manage self-care (NB-2.3) was changed to Inability to manage self-care (NB-2.3). Lack of desire to manage self-care is not a separate nutrition diagnosis, but a possible etiology, which is already listed in the nutrition diagnosis.

Further term additions or changes may result from this ongoing work with the standardized medical languages and will be published in future editions.

The nutrition diagnoses in the Energy Balance (NI-1) Class were renumbered (NI-1.1 to NI-1.5) due to unused nutrition diagnoses.

In response to suggestions by food and nutrition professionals, several modifications and terms additions were made:

Suboptimal enteral nutrition (NI-2.3), which is a synonym of Inadequate enteral nutrition (NI-2.3), and Less than optimal enteral nutrition (NI-2.5) are two terms that are not clear without reviewing the definitions. Therefore, clarifying words from the definition were added:

- Less than optimal enteral nutrition (NI-2.5) is relabeled Less than optimal enteral nutrition composition or modality (NI-2.5).
- Less than optimal parenteral nutrition (NI-2.8) is relabeled Less than optimal parenteral nutrition composition or modality (NI-2.8).

In a previous edition of the IDNT, the nutrition diagnoses noted on the previous page were labeled Inappropriate enteral nutrition and Inappropriate parenteral nutrition; however, feedback revealed that the word “inappropriate” was considered too value-laden. This led to a change in the labels from “inappropriate” to “less than optimal.” Three other nutrition diagnoses that have the “inappropriate” label are also changed in this edition:

- Inappropriate intake of fats (specify) (NI-5.6.3) is relabeled Less than optimal intake of types of fats (NI-5.6.3)
- Inappropriate intake of proteins or amino acids (specify) (NI-5.7.3) is relabeled Less than optimal intake of types of proteins or amino acids (specify) (NI-5.7.3)
- Inappropriate intake of types of carbohydrate (specify) (NI-5.8.3) is relabeled Less than optimal intake of types of carbohydrate (specify) (NI-5.8.3)

While not the intent, certain terms, such as, Harmful beliefs and attitudes about food and nutrition-related topics (NB-1.2) and Undesirable food choices (NB-1.7), can seem judgemental. For that reason, the following changes were made:

- Harmful beliefs/attitudes about food or nutrition-related topics (NB-1.2) is relabeled Unsupported beliefs/attitudes about food or nutrition-related topics (NB-1.2). It is believed that this term is less value-laden, and maintains the intent of the term definition.
- Undesirable food choices (NB-1.7) was not relabeled but it now has a synonym of Suboptimal food choices (NB-1.7) that may be used.

Two nutrition diagnoses were carefully considered and added:

- Suboptimal growth rate (NC-3.5)
- Excessive growth rate (NC-3.6)

These diagnoses are available to label nutrition problems related to growth rate. Please refer to the reference sheets for definitions, etiologies, and signs/symptoms.

Another change is the addition of the Academy Unique Identifier, a five-digit number following the alpha-numeric term code (e.g., Inadequate oral intake, NI-2.1, 10639).

- The Academy Unique Identifier is an essential element used by information technology (IT) professionals for data monitoring and tracking in electronic health records (EHRs). Food and nutrition professionals use this number to request data needed for reports and quality improvement.
 - The Academy Unique Identifier is associated with a term and never changes. If the term is modified, then the original term and unique identifier are retired. The new term is assigned a new unique identifier.
 - The unique identifiers do not have a structure. Although unique identifiers were initially assigned in sequential order, there is no order for the identifiers, and they do not have meaning or show relationships between terms. This is in contrast to the IDNT alpha-numeric term codes (e.g., NI-2.1), which change as the terminology changes and demonstrate relationships between terms and groups of terms.
- Neither the Academy Unique Identifiers nor the alpha-numeric term codes are recommended in nutrition documentation. Food and nutrition professionals should document only the terms (e.g., Inadequate oral intake).

Nutrition Diagnosis Reference Sheets

Specific changes are noted in the Nutrition Diagnosis chapter, but highlights include that absence of prior education is part of the nutrition diagnosis Food and nutrition knowledge deficit (NB-1.1); lack of confidence in ability to change is an etiology of the nutrition diagnosis Limited adherence to nutrition-related recommendations (NB-1.6); chyle leak is a client history sign and symptom of both Excessive fat intake (NI-5.6.2) and Less than optimal intake of types of fats (NI-5.6.3); lack of recommended adaptive eating devices is a sign/symptom of Self-feeding difficulty (NB-2.6); and mislabeled or unlabeled foods is a sign/symptom of Intake of unsafe food (NB-3.1).

Malnutrition (NI-5.2)

The Academy of Nutrition and Dietetics and the American Society for Parenteral and Enteral Nutrition (ASPEN) continue to work with the U.S. National Center for Health Statistics to revise projected ICD-10 coding terminology to incorporate an etiology-based approach to malnutrition diagnosis (*J Parenter Enteral Nutr.* 2010;34[2]:156-159). Clinical characteristics or indicators of malnutrition determined by this collaboration are included in the nutrition diagnosis, Malnutrition (NI-5.2). The Academy's Nutrition Care Manual contains more-specific descriptions of severe and nonsevere malnutrition. Pediatric malnutrition (ages 1-18) has not been defined as part of the Academy and ASPEN collaboration. The process of developing characteristics to diagnose pediatric malnutrition is underway. Therefore, indicators within the nutrition diagnosis were refined based on the documents of the collaboration for adult malnutrition. Future changes are expected, including defined clinical characteristics for pediatric malnutrition, but they are not available for this publication. For additional information, visit the Academy's website at: www.eatright.org/coverage.

Breastfeeding Difficulty (NC-1.3)

Practitioners in public health/community nutrition practice worked extensively on a new NCP toolkit for this practice area (6). During this work, authors identified the need to include an etiology and signs/symptoms related to the impact of other feeding on the ability to sustain infant nutrition through breastfeeding. Please refer to the reference sheet for the specific changes.

No Nutrition Diagnosis At This Time (NO-1.1)

A new reference sheet was added for clarity, electronic health records, and quality improvement purposes so that food and nutrition professionals can clearly document when a nutrition assessment indicates that no nutrition problem currently exists that warrants a nutrition intervention. This concept was described in a previous journal article (3), but a term and reference sheet permit clearer understanding and tracking of its use.

Nutrition Intervention

The **Nutrition Intervention** standardized language is **REVISED**. As a result of the work toward including the specific terms into standardized informatics languages and language systems, new terms have been added and some terms have been separated within the terminology lists. Changes to Nutrition Intervention include:

- Separation of Modify distribution of, type, or amount of food and nutrients within meals or at specified time (ND-1.2) to Composition of meals/snacks (ND-1.2) with addition of ten types of diets from the Academy diet order taxonomy project and Schedule of food/fluids (ND-1.3)
- Addition of six new terms for Enteral nutrition (ND-2.1): composition (ND-2.1.1), concentration (ND-2.1.2), rate (ND-2.1.3), volume (ND-2.1.4), schedule (ND-2.1.5), and route (ND-2.1.6)
- Addition of five new terms for Parenteral nutrition/IV fluids (ND-2.2): composition (ND-2.2.1), concentration (ND-2.2.2), rate (ND-2.2.3), schedule (ND-2.2.4), and route (ND-2.2.5)
- Addition of terms for documenting vitamin supplement of pantothenic acid (ND-3.2.3.12) and biotin (ND-3.2.3.13)
- Addition of terms for documenting mineral supplement of sulfate (ND-3.2.4.9), fluoride (ND-3.2.4.10), copper (ND-3.2.4.11), iodine (ND-3.2.4.12), selenium (ND-3.2.4.13), manganese (ND-3.2.4.14), chromium (ND-3.2.4.15), molybdenum (ND-3.2.4.16), boron (ND-3.2.4.17), and cobalt (ND-3.2.4.18)
- Separate terms for documenting intake of the following bioactive substances: plant stanol esters (ND-3.3.1), plant sterol esters (ND-3.3.2), psyllium (ND-3.3.4), β glucan (ND-3.3.5), alcohol (ND-3.3.7) and caffeine (ND-3.3.8)
- Separation of Prescription medications (ND-6.1) and OTC medications (ND-6.2).
- Revision of Herbal/complementary products, specify to Complementary/alternative medicine (ND-6.3)
- Revision of terms for the Coordination of Nutrition Care Domain, namely separation of referral and collaboration.
- Addition to the Nutrition prescription of an alpha-numeric code of (NP-1.1) for tracking and quality improvement purposes.

Further term additions or changes may result from this ongoing work with the standardized medical languages and will be published in future editions.

Other changes include:

- Addition to Feeding assistance (ND-4) of Menu selection assistance (ND-4.5)
- Addition to Feeding environment (ND-5) of Meal service (ND-5.7) and Meal location (ND-5.8)

Another change is the addition of the Academy Unique Identifier, a five-digit number following the alpha-numeric term code (e.g., General, healthful diet, ND-1.1, 10489).

- The Academy Unique Identifier is an essential element used by information technology (IT) professionals for data monitoring and tracking in electronic health records (EHRs). Food and nutrition professionals use this number to request data needed for reports and quality improvement.
 - The Academy Unique Identifier is associated with a term and never changes. If the term is modified, then the original term and unique identifier are retired. The new term is assigned a new unique identifier.
 - The unique identifiers do not have a structure. Although unique identifiers were initially assigned in sequential order, there is no order for the identifiers, and they do not have meaning or show relationships between terms. This is in contrast to the IDNT alpha-numeric term codes (e.g., ND-1.1), which change as the terminology changes and demonstrate relationships between terms and groups of terms.
- Neither the Academy Unique Identifiers nor the alpha-numeric term codes are recommended in nutrition documentation. Food and nutrition professionals should document only the terms (e.g., General, healthful diet).

Nutrition Intervention Reference Sheets

Specific changes are noted in the Nutrition Intervention chapter, but of significance is the improved alignment between the Nutrition Intervention Terminology List and all of the Nutrition Intervention Reference Sheets. In previous editions of the IDNT, it was difficult to clearly identify the individual nutrition intervention terms on the reference sheets. Revisions now make the terms and their criteria more clear. Additionally, each nutrition intervention contains the statement that food and nutrition professionals recommend, implement, or order nutrition interventions and the action(s) may initiate, modify or discontinue the nutrition intervention(s). Food and nutrition professionals are encouraged to clearly identify in documentation the nature of the nutrition intervention.

One additional change is to the reference sheet for the Nutrition Prescription. This sheet was given an alpha-numeric code of (NP-1.1) for tracking and quality improvement purposes.

Nutrition Monitoring and Evaluation Section

The **Nutrition Monitoring and Evaluation** standardized language is **REVISED**. Since the Nutrition Assessment and Nutrition Monitoring and Evaluation terminologies are combined, please refer to the Nutrition Assessment section and chapter for the details of the changes.

One change to 33 Nutrition Assessment terms is removal of the asterisks (***) and shading in four domains, which makes these terms available for both Nutrition Assessment and Nutrition Monitoring and Evaluation. The asterisks (***) or shading on the terminology list mean that the indicator is used only for Nutrition Assessment and is not an indicator that may change as a result of nutrition intervention. The Committee agreed with practitioner input that all terms in the four domains of Food/Nutrition-Related History; Anthropometric Measurements; Biochemical Data, Medical Tests and Procedures; and Nutrition-Focused Physical Findings should be available for use and study as Nutrition Assessment and Nutrition Monitoring and Evaluation terms.

Materials Not Included in This Publication

Several relevant items are available on the Academy's website (www.eatright.org) in the Nutrition Care Process section. These include the Nutrition Assessment Matrix, Nutrition Diagnosis Etiology Matrix, a document that contains the complete changes to the reference sheets, and case studies.

Nutrition Assessment Matrix Revision

The Nutrition Assessment Matrix is a resource to cross-reference specific nutrition assessment parameters with associated nutrition diagnoses. The alpha-numeric codes for locating the nutrition assessment parameters are noted on the matrix. This is useful for accurate labeling of the Nutrition Assessment/Monitoring and Evaluation indicators and for electronic health record documentation.

Nutrition Diagnosis Etiology Matrix

The Third Edition of the *IDNT Reference Manual* defined the categories of etiologies so that practitioners and researchers can better understand the etiology concept and intent.

Identifying the etiology leads to the selection of a nutrition intervention aimed at resolving the underlying cause of the nutrition problem whenever possible. If the intervention cannot be aimed at resolving the underlying cause, as is the case, for example, in Physiologic-metabolic etiologies, then the nutrition intervention is targeted at minimizing the signs/symptoms of the nutrition problem.

This resource is available in the online version of the manual and as a supplemental document in the Nutrition Care Process section of the Academy website.

Other Materials

Details and the rationale for changes to the reference sheets for each step are available on the Academy website in the Nutrition Care Process section. Each reference sheet that was modified includes a notation on the last page indicating the publication year in which it was updated, e.g., Updated: 2011 Edition. Editorial changes that do not affect the content are not included in the document.

Case studies incorporating nutrition assessment standardized language are available on the Academy website in the Nutrition Care Process section. The Scope of Practice, Standards of Practice in Nutrition Care and Standards of Professional Performance, and the Standards of Practice in Nutrition Care Appendix are also available on the Academy website, www.eatright.org/scope.

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Nutrition Care Process Summary

Introduction

Continually emerging from the Academy of Nutrition and Dietetics' strategic plan are priority actions that guide committees, workgroups, and taskforces in creating tools to advance the dietetics profession. In 2002, to achieve the Academy's strategic goals of promoting the demand for food and nutrition professionals and to help such professionals be more competitive in the marketplace, the Academy Quality Management Committee appointed the Nutrition Care Model Workgroup. This Workgroup developed the Nutrition Care Process and Model, a systematic process describing how food and nutrition professionals provide care to patients/clients (1).

The Nutrition Care Process (NCP) is designed to improve the consistency and quality of individualized care for patients/clients or groups and the predictability of the patient/client outcomes. It is not intended to standardize nutrition care for each patient/client, but to establish a standardized process for providing care.

Special Note: The terms patient(s)/client(s) are used in association with the NCP; however, the process is also intended for use with groups. In addition, family members or caregivers are an essential asset to the patient/client and food and nutrition professional in the NCP. Therefore, groups, populations, families, and caregivers of patients/clients are implied each time a reference is made to patient/client.

There are four steps in the process:

- Nutrition assessment
- Nutrition diagnosis
- Nutrition intervention
- Nutrition monitoring and evaluation

Three of the NCP steps are very familiar to food and nutrition professionals, and nutrition textbooks skillfully cover their content—nutrition assessment, nutrition intervention, and nutrition monitoring and evaluation. However, the Workgroup identified a less well defined aspect of nutrition care: nutrition diagnosis. Further, it recognized that a standard taxonomy for the second step in the process would greatly enhance the profession's ability to document, communicate, and research the impact of nutrition care.

As a result, the Academy's Nutrition Care Process/Standardized Language (NCP/SL) Committee was formed to create a taxonomy for the profession's unique nutrition diagnosis language. The language was described during presentations at the 2005 Food and Nutrition Conference and Exhibition and made available in a publication at that meeting (2). The nutrition diagnosis language is undergoing study in a number of research projects. Future modifications to the language will be made based on research results.

The NCP/SL Committee has examined in-depth all four NCP steps and published a standardized language for nutrition assessment, nutrition diagnosis, nutrition intervention, and nutrition monitoring and evaluation.

Nutrition Care Process Steps

Step 1: Nutrition Assessment

Nutrition assessment is a systematic method for obtaining, verifying, and interpreting data needed to identify nutrition-related problems, their causes, and their significance. It is an ongoing, nonlinear, dynamic process that involves initial data collection, but also continual reassessment and analysis of the patient/client's status compared to specified criteria. From the nutrition assessment data, the food and nutrition professional is able to determine whether a nutrition diagnosis/problem exists. This step, while well known to food and nutrition professionals, will be enhanced by the use of standardized nutrition assessment language for communicating about patients/clients with similar problems.

The nutrition assessment terms are identified and grouped into five domains:

- Food/Nutrition-Related History
- Anthropometric Measurements
- Biochemical Data, Medical Tests, and Procedures
- Nutrition-Focused Physical Findings
- Client History

Nutrition assessment begins after a patient/client referral or as a result of positive nutrition screening, when it is determined that the patient/client may benefit from nutrition care. Nutrition assessment leads to the appropriate determination of whether a nutrition diagnosis/problem exists. If so, the food and nutrition professional correctly diagnoses the problem and creates a PES (Problem, Etiology, Signs/Symptoms) statement in Step 2 of the NCP. In addition, food and nutrition professionals develop the plan for continuation of care or convey the need for further information or testing. If upon the completion of an initial assessment or reassessment it is determined that a nutrition problem does not exist or cannot be modified by further nutrition care, discharge or discontinuation from the episode of nutrition care may be appropriate (3).

Standardized language facilitates more effective comparison of nutrition assessment findings. To this end, the NCP/SL Committee has described the standardized language, data collection, and evaluation approach for nutrition assessment. Many opportunities for research exist in nutrition assessment, which will help determine the most appropriate nutrition assessment data to use for individuals and populations in various practice settings.

Step 2: Nutrition Diagnosis

Nutrition diagnosis is a critical step between nutrition assessment and nutrition intervention. The purpose of a standardized nutrition diagnosis language is to describe nutrition problems consistently so that they are clear within and outside the profession. The standardized language enhances communication and documentation of nutrition care, and it provides a minimum data set and common data elements for future research.

In simple terms, a food and nutrition professional identifies and labels a specific nutrition diagnosis (problem) that, in general, he or she is responsible for treating independently (e.g., excessive carbohydrate intake). With nutrition intervention, the nutrition diagnosis ideally resolves, or at least the signs and symptoms improve. In contrast, a medical diagnosis describes a disease or pathology of organs or body systems (e.g., diabetes). In some instances, such as the nutrition diagnosis Swallowing difficulty (NC-1.1), food and nutrition professionals are labeling or diagnosing the functional problem that has a nutritional consequence. Food and nutrition professionals do not identify medical diagnoses; they diagnose phenomena in the nutrition domain.

Academy's NCP/SL Committee developed a framework that outlines three domains within which the nutrition diagnoses/problems fall:

- Intake
- Clinical
- Behavioral-Environmental

Reference sheets were developed to describe each nutrition diagnosis and incorporate expert input and research feedback.

No nutrition diagnosis at this time (NO-1.1) may be documented if the assessment indicates that no nutrition problem currently exists that warrants a nutrition intervention.

This step in the Nutrition Care Process results in the documentation of the nutrition diagnosis (PES) statement. This statement is composed of three distinct components: the problem (P), the etiology (E) and the signs and symptoms (S). The PES statement is derived from the clustering and synthesis of information gathered during nutrition assessment.

Essential to the understanding of the nutrition problem is the identification of the etiology, or cause or contributing risk factor, of the problem. The Committee has defined the categories of etiologies so practitioners and researchers can better understand the etiology concept and intent, which leads to the most likely nutrition intervention. The Nutrition Diagnosis Etiology Matrix is available on the Academy's website and in the online IDNT Reference Manual.

Step 3: Nutrition Intervention

Nutrition intervention is the third step in the Nutrition Care Process. Nutrition interventions are specific actions used to remedy a nutrition diagnosis/problem, and can be used with individuals, groups, or the community at large. These nutrition interventions are intended to change a nutrition-related behavior, environmental condition, or aspect of nutritional health. A food and nutrition professional collaborates, whenever possible, with the patient/client(s) and other health care providers during the nutrition intervention.

Nutrition intervention consists of two interrelated components—planning and implementation. Planning involves prioritizing the nutrition diagnoses; conferring with the patient and others; consulting practice guides and policies; jointly establishing goals; and defining the nutrition prescription and identifying specific nutrition intervention(s). Implementing the nutrition intervention is the action phase, which includes carrying out and communicating the plan of care, continuing the data collection, and revising the nutrition intervention, as warranted, based on the patient/client response. This step cannot be completed unless both components are in place to support the nutrition intervention.

The nutrition intervention is almost always aimed at the etiology (E) of the nutrition diagnosis/problem identified in the PES statement. In very specific instances, the nutrition intervention is directed at reducing/eliminating the effects of the signs and symptoms (S). Generally, the signs and symptoms form the basis for the next step in the Nutrition Care Process: nutrition monitoring and evaluation (Step 4).

Four domains of nutrition intervention have been identified:

- Food and/or Nutrient Delivery
- Nutrition Education
- Nutrition Counseling
- Coordination of Nutrition Care

The terminology is defined and reference sheets for each specific nutrition intervention are available for use. It is believed that the information necessary for medical record documentation, billing, and the description of the nutrition interventions for research are included in the terminology.

A food and nutrition professional will note that while some interventions are closely related (e.g., education and counseling), the terms are intentionally separated to distinguish between them. Additionally, specific descriptors of a nutrition intervention encounter (i.e., interactions, visits, contacts, sessions) are provided to assist a food and nutrition professional with the details of his or her encounters with the patient/client(s). Examples of descriptors include encounters with individuals or groups, face-to-face or electronically conducted encounters, and the degree to which the food and nutrition professional is responsible for the patient/client care.

Step 4: Nutrition Monitoring and Evaluation

The purpose of nutrition monitoring and evaluation is to quantify progress made by the patient/client in meeting nutrition care goals. During the monitoring and evaluation process, nutrition care outcomes—the desired results of nutrition care—have been defined, and specific indicators that can be measured and compared to established criteria have been identified. Nutrition monitoring and evaluation tracks patient/client outcomes relevant to the nutrition diagnosis and intervention plans and goals.

Selection of appropriate nutrition care indicators is determined by the nutrition diagnosis and its etiology, the signs or symptoms, and the nutrition intervention used. The medical diagnosis and health care outcome goals and quality

management goals for nutrition also influence the nutrition care indicators that are chosen. Other factors, such as practice setting, patient/client population, and disease state and/or severity, affect indicator selection.

The nutrition monitoring and evaluation terms are combined with the nutrition assessment terms and organized in four domains:

- Food/Nutrition-Related History
- Anthropometric Measurements
- Biochemical Data, Medical Tests, and Procedures
- Nutrition-Focused Physical Findings

There are no nutrition care outcomes associated with the Client History domain; items from this domain are used for nutrition assessment only and do not change as a result of nutrition intervention.

During this step, food and nutrition professionals monitor the patient/client progress by determining whether the nutrition intervention is being implemented and by providing evidence that the nutrition intervention is or is not changing the patient/client behavior or nutritional/health status. Food and nutrition professionals measure outcomes by selecting the appropriate nutrition care indicator(s) and comparing the findings with nutrition prescription/intervention goals, and/or reference standards. The use of standardized indicators and criteria increases the validity and reliability of the outcome data and facilitates electronic charting, coding, and outcomes measurement.

Nutrition Care Process and Medical Nutrition Therapy

Food and nutrition professionals may question the difference between medical nutrition therapy (MNT) and nutrition interventions. MNT is not synonymous with the NCP, but it is one specific type of nutrition care (1). The Academy's definition of terms list (www.eatright.org/scope as of 7/2010) further defines MNT as an evidence-based application of the Nutrition Care Process that is focused on prevention, delay or management of diseases and conditions, and involves an in-depth assessment, periodic reassessment, and intervention.

Implementation of the Nutrition Care Process and Future Directions

Publications and Resources

Food and nutrition professionals are implementing the Nutrition Care Process. This new *International Dietetics and Nutrition Terminology (IDNT) Reference Manual* provides extensive detail and explanation about the complete standardized language for dietetics.

Toolkits are available to support Nutrition Care Process implementation and continuing education. For more information, please see the Bibliography and Resources section of this manual or the Academy website (www.eatright.org) in the Nutrition Care Process section.

Toolkits are also available from the Academy for the online Evidence-Based Nutrition Practice Guidelines, which are based on evidence analyses. They contain sample forms and examples incorporating standardized language terms in the Nutrition Care Process steps. These are available for purchase from the Academy at the Store tab of the Academy Evidence Analysis Library (www.andevidencelibrary.com). Food and nutrition professionals may also find useful the extensive resources, including patient/client case studies, a performance improvement case, audit tools and downloadable presentations, provided on the Academy website in the Nutrition Care Process section.

Members have completed numerous presentations and newsletter articles for national, state, and Dietetic Practice Group audiences. The Academy also facilitates the Peer Network for the Nutrition Care Process (PNNCP), a network of food and nutrition professionals who have led the way in implementing the Nutrition Care Process in their facilities and communities. A contact list for members of the PNNCP is available on the Academy's website.

Billing for Nutrition Encounters

As appropriate to the situation and payer, registered dietitians (RDs) may bill for services they provide during encounters with patients/clients, including but not limited to medical nutrition therapy (MNT) (defined at www.eatright.org/scope > Definition of terms). Many third-party payers, such as the Centers for Medicare and Medicaid Services, require use of the MNT Current Procedural Terminology (CPT) codes on claims submitted for MNT services provided by RDs.

MNT CPT Code Descriptors

97802 Medical nutrition therapy; initial assessment and intervention, individual, face-to-face with the patient, each 15 minutes
97803 Reassessment and intervention, individual, face-to-face with the patient, each 15 minutes
97804 Group (2 or more individual[s]), each 30 minutes
CPT codes, descriptions, and material only are copyright 2012 American Medical Association. All Rights Reserved. CPT is a registered trademark of the American Medical Association.

Compared with other CPT codes, the MNT CPT codes best describe services that food and nutrition professionals and RDs provide to patients/clients receiving medical nutrition therapy for a particular chronic disease or condition. The MNT CPT codes are time-based codes—15-minute and 30-minute increments of time for individual or group MNT, respectively. RDs typically report multiple units of the MNT CPT code on claims for initial, follow-up, and group MNT visits. The total number of units of the MNT code reported for one encounter is determined by the time spent interacting (face-to-face) with the patient/client. In addition, RDs normally provide MNT and other nutrition services over several encounters with the patient/client, based on nutrition practice guidelines, patient/client needs, interests and medical necessity. Multiple visits are needed to help the patient/client achieve goals, desired behavior changes, and/or expected outcomes.

RDs may use other CPT codes when providing nutrition education and training and other nutrition and nutrition-related services. Check payer policies to determine covered services and codes that can be used on claims. For additional detailed coding, coverage, and Medicare MNT resources, refer to the Academy website (www.eatright.org) in the Coding, Coverage, and Compliance or Medicare MNT sections.

International Information Sharing

In 2005, the American Dietetic Association (ADA; now the Academy) Foundation funded an ADA-hosted meeting to expand the dialogue with other international dietetic associations about the ADA's standardized nutrition diagnosis language and similar efforts by other associations. The meeting also initiated a dialogue among the foremost medical informatics organizations and the international nutrition and dietetics community. As a result of this dialogue:

- The ADA hosted an international meeting in September 2010 for international dietetic associations and groups to share efforts and questions on implementation of the NCP and the IDNT or other standardized processes and languages. Representatives present included members of the International Confederation of Dietetic Associations, American Overseas Dietetic Association, British Dietetic Association, Dietetic Association of Australia, Dietitians of Canada, Hungarian Dietetic Association, Israel Dietetic Association, Associacao Brasileira de Nutricao - ASBRAN (Brazil), Kenya Bureau of Standards (KEBS), Malaysia Dietetic Association, Turkish Dietetic Association, Dutch Dietetic Association, Swedish Association of Clinical Dietitians, and a representative from Mexico.
- International Confederation of Dietetics Associations received updates on Nutrition Care Process (NCP) and International Dietetics and Nutrition Terminology (IDNT) activities and distributed information to international dietetic associations about translation and publication rights for the IDNT and recruitment of international expert reviewers for the Fourth Edition of IDNT.
- A presentation regarding the NCP was presented at the XV International Congress of Dietetics on September 8–11, 2008 in Yokohama, Japan.

- The Dietitians Association of Australia has initiated a research study evaluating the face validity of the nutrition diagnoses.
- The Dutch Dietetic Association (Nederlandse Vereniging van Diëtisten) has requested permission to use the nutrition diagnoses in their health care databases.
- The Japanese Dietetic Association and the South Korean Dietetic Association have agreements to translate the *IDNT Reference Manual*.
- Dietitians of Canada has published a summary paper in English and French describing the NCP. Work is underway for a French translation of the IDNT in 2012.
- The Association of Clinical Dietitians in Sweden made the NCP a focus of their 2011 annual meeting with a debut of a Swedish translation of the IDNT and terms and definitions.
- The Association of Dietitians of Israel is exploring the potential adoption of both the NCP and IDNT in the national health system. Two presentations and a workshop have already taken place.

Indeed, as the world moves fully into electronic health care records, health informatics, and common databases, the international community of nutrition and food and nutrition professionals has the opportunity to work in partnership with the medical informatics organizations to ensure that data elements critical to capturing nutrition care are included in databases and collected in a consistent way.

Summary

From conception of the Nutrition Care Process in 2002 through its implementation now, the NCP/SL Committee continues to update the Academy's House of Delegates, the Board of Directors, and members through reports, articles, case studies, presentations, publications, and the Academy website.

However, to see the strategic goals of an increased demand for food and nutrition professionals who are more competitive in the marketplace come to fruition, practitioners need to take a historic step by implementing the Nutrition Care Process today.

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The IDNT and Electronic Health Records

The Academy continues to work toward including the concepts from the Nutrition Care Process (NCP) and the specific terms from the International Dietetics and Nutrition Terminology (IDNT) in electronic health records (EHRs) in two important ways:

- Development of messaging standards for electronic health records
- Incorporation of IDNT into standardized informatics languages and language systems

Resources from the Academy can help develop and maintain use of the NCP and IDNT in electronic health records.

Standardized Medical Languages

The Academy is working with Health Level Seven International (www.hl7.org) Electronic Health Record Workgroup to develop a specific Electronic Nutrition Care Process Record System (ENCPRS)-Functional Profile that identifies the important features and functions of dietetics and nutrition practice that should be contained in an EHR system. The ENCPRS-Functional Profile was created to align with the HL7 International EHR System Functional Model (EHR-S FM) that provides a standard description and common understanding of functions for health care settings. To date, HL7 has developed or is developing profiles for areas such as child health, emergency care, long-term care, behavioral health, and vital statistic reporting. The ENCPRS-Functional Profile was successfully balloted at HL7 in January 2011 and it is now officially designated a Draft Standard for Trial Use (DSTU) and, as such, is in a testing phase with plans for balloting at HL7 as a Normative Standard in January 2013.

Concurrently, work is underway to include the IDNT in standardized informatics languages, specifically, the Systematized Nomenclature of Medicine International (SNOMED, www.nlm.nih.gov/research/umls/Snomed/snomed_main.html) and Logical Observation Identifiers Names and Codes (LOINC, <http://loinc.org>). Inclusion of the IDNT within SNOMED and LOINC is beneficial for promoting the use of a standardized dietetics and nutrition practice language throughout the U.S. and internationally, leading to improved standardization of nutrition care and outcomes reporting. It is anticipated that this work will be ongoing for several years, as the transition to an electronic health record system becomes commonplace. Thus far, the feedback from these informatics groups has supported a universal need to document nutrition services.

Languages such as SNOMED and LOINC strive to include only one concept in each term and do not offer general, “other” terms for additional items to be documented. Therefore, in some cases, concepts such as modified diets required separation (e.g., a list of categories of modified diets) into specific terms. Other similar examples within nutrition assessment and nutrition intervention exist. Examples of terms being added are the new terms for biotin and pantothenic acid to all three terminologies so food and nutrition professionals can assess, diagnose and provide nutrition interventions related to these vitamins. Previously, the IDNT contained an “other” category where one could document biotin and pantothenic acid, but the work with these other languages requires specific listing of each term, no matter how rare the concept. Not all terms will be used by every food and nutrition professional, but the IDNT does list all terms for the profession.

Nutrition Care Process Content Use in Electronic Health Records or Software

The Academy Electronic Health Record Toolkit is a reference tool for use by food and nutrition professionals as they and their institutions work to integrate the NCP and IDNT into EHRs. This collection of resources provides tailored assistance depending upon a practitioner’s responsibility or point in the process of conversion from paper to EHRs. Included is a tool for several practitioners in one or more facilities to note the terms they use most, as well as training examples and sample forms for documenting workflow requirements and data elements required for system configuration. This specialized resource is available as an online subscription in the Academy Evidence Analysis Library (EAL) Store at: www.andevidencelibrary.com/store.cfm?category=8.

Licensing

Using the Nutrition Care Process standardized language that is published in the *International Dietetics and Nutrition Terminology (IDNT) Reference Manual* in an EHR requires permission, also called an internal license, from the Academy. The standardized language (IDNT) is protected by copyright. As the terms are embedded in EHRs, the unique dietetics-related practice information may not be altered or infringed upon. Further, a permission agreement ensures that the Academy is aware of the organizations using the language and can provide each organization with timely and accurate updates as the language evolves. An external license is required if a software developer would like to include the IDNT in a product for sale or distribution. The Academy does not require a license to use the IDNT in paper medical records.

When Is Licensing Required?

Depending on whether you have an in-house (homegrown/built) or contracted EHR, you may or may not need an agreement with the Academy. If your organization has a contract with an EHR company that has licensed the IDNT from the Academy, you can access the IDNT through that relationship. Since the list of companies that are licensing the terms is ever-changing and some companies consider this proprietary information, please e-mail ncpslpermissions@eatright.org to inquire whether your contract EHR company has a license for the IDNT terms. If you have an in-house EHR or your contract EHR company does not license the terms, your organization will need an internal license. External licenses are also required for products that will use the IDNT and be sold or distributed. More information is available on NCP Content Use on the Academy's website at www.eatright.org/ncp.

What Does the Academy Provide to an Organization That Licenses the IDNT?

The Academy provides the following:

- An Excel file that includes the IDNT with 15-character abbreviations for each term and descriptor.
 - IT professionals use this data to incorporate the terminology into the computer programming or software.
 - The 15-character abbreviations for each term help clinicians more quickly find the term they need for their documentation.
- The Excel file also includes the Academy Unique Identifier, a five-digit number.
 - The Academy Unique Identifier is used by IT professionals for data monitoring and tracking in electronic health records (EHRs). Food and nutrition professionals use this number to request data needed for reports and quality improvement.
 - Neither the Academy Unique Identifiers nor the alpha-numeric term codes are recommended in nutrition documentation. Food and nutrition professionals should only document the terms (e.g., Total energy intake).
- The *International Dietetics and Nutrition Terminology (IDNT) Reference Manual*. The number of manuals depends on the number of facilities included in an internal license or size of an external or distribution license.
- Automatic Excel file updates and new *IDNT Reference Manuals* as revisions to the IDNT occur.

For more information regarding the cost of a license and for an application, please see the Academy website, www.eatright.org/ncp, or e-mail ncpslpermissions@eatright.org.

SNAPshot

NCP Step 1: Nutrition Assessment

What is the purpose of nutrition assessment? The purpose is to obtain, verify, and interpret data needed to identify nutrition-related problems, their causes, and significance. It is an ongoing, nonlinear, dynamic process that involves initial data collection, but also continual reassessment and analysis of the patient/client's status compared to specified criteria. This contrasts with nutrition monitoring and evaluation data where food and nutrition professionals use similar, or even the same, data to determine changes in patient/client* behavior or nutritional status and the efficacy of nutrition intervention.

How does a food and nutrition professional determine where to obtain nutrition assessment data? It depends on the practice setting. For individuals, data can come directly from the patient/client through interview, observation and measurements, a medical record, and the referring health care provider. For population groups, data from surveys, administrative data sets, and epidemiological or research studies are used. A nutrition assessment matrix that links nutrition assessment parameters with nutrition diagnoses is available to assist practitioners in identifying nutrition diagnoses.

How are Nutrition Assessment data organized? In five categories:

Food/Nutrition-Related History	Anthropometric Measurements	Biochemical Data, Medical Tests, and Procedures	Nutrition-Focused Physical Findings	Client History
<i>Food and nutrient intake, food and nutrient administration, medication/herbal supplement use, knowledge/beliefs, food and supplies availability, physical activity, nutrition quality of life</i>	<i>Height, weight, body mass index (BMI), growth pattern indices/percentile ranks, and weight history</i>	<i>Lab data (e.g., electrolytes, glucose) and tests (e.g., gastric emptying time, resting metabolic rate)</i>	<i>Physical appearance, muscle and fat wasting, swallow function, appetite, and affect</i>	<i>Personal history, medical/health/family history, treatments and complementary/alternative medicine use, and social history</i>

What is done with the nutrition assessment data? Nutrition assessment data (indicators) are compared to criteria, relevant norms and standards, for interpretation and decision making. These may be national, institutional, or regulatory norms and standards. Nutrition assessment findings are documented in nutrition diagnosis statements and nutrition intervention goal setting.

Critical thinking during this step...

- Determining appropriate data to collect
- Determining the need for additional information
- Selecting assessment tools and procedures that match the situation
- Applying assessment tools in valid and reliable ways
- Distinguishing relevant from irrelevant data
- Distinguishing important from unimportant data
- Validating the data

Is there a standardized language or taxonomy for nutrition assessment? Yes. A standard taxonomy for nutrition assessment supports a consistent approach to the NCP and enhances communication and research. The terms for nutrition assessment and nutrition monitoring and evaluation are combined, because the data points are the same or related; however, the data purpose and use are distinct in these two steps.

Are food and nutrition professionals limited to the nutrition assessment data included in the matrix and used in the nutrition diagnoses? Nutrition assessment data listed in the nutrition diagnoses reference sheets are undergoing study and research to confirm (validate) which data are most relevant to specific nutrition diagnoses. However, proposals for additions or revisions can be submitted using the Procedure for Nutrition Controlled Vocabulary/Terminology Maintenance/Review available from the Academy.

*Patient/client refers to individuals, groups, populations, family members, and/or caregivers.

Nutrition Care Process Step 1: Nutrition Assessment

Introduction

Nutrition assessment is the first of four steps in the Nutrition Care Process (1). At its simplest, it is a systematic method for obtaining, verifying, and interpreting data needed to identify nutrition-related problems, their causes, and significance. While the types of data collected during nutrition assessment may vary among nutrition settings, the process and intention are the same. When possible, the assessment data are compared to reliable norms and standards for evaluation. Further, nutrition assessment initiates data collection, which is continued throughout the Nutrition Care Process and forms the foundation for nutrition reassessment and re-analysis of data in nutrition monitoring and evaluation.

What Is New in This Edition Related to Nutrition Assessment?

This edition includes revisions to the standardized language for nutrition assessment and monitoring and evaluation. As a result of work to align the IDNT with existing standardized medical languages, there are several changes. All changes to the terminology and reference sheets were carefully reviewed by the NCP/SL Committee, members of the Academy's IDNT Advisory Panel, members of the IDNT classification workgroup and experts from the international community. This included review of the Academy's evidence-based practice guidelines by the Academy's Evidence-based Practice Committee.

Changes Affecting All Domains

Overall, there are modifications that affect each domain in Nutrition Assessment:

An Academy Unique Identifier, a five-digit number following the alpha-numeric term code is added to the Nutrition Assessment/Nutrition Monitoring and Evaluation (NA/ME) terminology list (e.g., Total energy intake, FH-1.1.1.1, 10005).

- The Academy Unique Identifier is an essential element used by information technology (IT) professionals for data monitoring and tracking in electronic health records (EHRs). Food and nutrition professionals use this number to request data needed for reports and quality improvement.
 - The Academy Unique Identifier is associated with a term and never changes. If the term is modified, then the original term and unique identifier are retired. The new term is assigned a new unique identifier.
 - The unique identifiers do not have a structure. Although unique identifiers were initially assigned in sequential order, there is no order for the identifiers, and they do not have meaning or show relationships between terms. This is in contrast to the IDNT alpha-numeric term codes (e.g., FH-1.1.1.1), which change as the terminology changes and demonstrate relationships between terms and groups of terms.
- Neither the Academy Unique Identifiers nor the alpha-numeric term codes are recommended in nutrition documentation. Food and nutrition professionals should document only the terms (e.g., Total energy intake).

Of interest to practitioners is refinement of the Nutrition Assessment and Monitoring and Evaluation terminology content for improved use for all food and nutrition professionals in the U.S. and internationally. Toward that goal are the following changes.

- Inclusion of the following U.S. and metric measures—fluid volume (ounce [oz]/milliliter[mL]), weight (pound/kilogram [kg]), height (feet and inches/centimeters [cm]), food intake measures (servings/piece, cups/deciliter [dL]/mL, oz/gram [g]/kg, teaspoon [tsp]/tablespoon [tbsp]/mL), food energy (calories/kilocalories [kcal]/kilojoules [kJ]).

- Maintenance of existing laboratory values in the reference sheets with the addition of arrows to provide information on the direction of change. Arrows used with laboratory values are ↑, which represents above reference standard, and ↓, which represents below reference standard.
- Reference standards or resources shall contain a generic description, and when available, a specific standard or resource following in parentheses. Examples are dietary reference intake standard (e.g., Dietary Reference Intakes (DRIs)), national food guideline (e.g., U.S. Dietary Guidelines, MyPlate) and diet quality index standard (e.g., Healthy Eating Index).
- Addition of vitamin and mineral intake units used outside of the U.S. and Canada. As an example, the listing for Vitamin A intake included a recommendation to specify the form and amount in µg/day. This will now reflect a Vitamin A intake recommendation to specify form, µg (micrograms) or RE (retinol equivalents), and frequency of the intake (e.g., twice per day).
- Clarification of specific words used in the manual. As an example, “nutrition support” is used in the manual without a definition. Therefore, nutrition support will be followed by a definition in parentheses: nutrition support (enteral and parenteral nutrition) in the class definition. Enteral and Parenteral Nutrition (ND-2) are defined as nutrition provided through the gastrointestinal (GI) tract via tube, catheter, or stoma that delivers nutrients distal to the oral cavity (enteral) or the administration of nutrients intravenously (centrally or peripherally) (parenteral).

Most of the changes for improved U.S. and international use impact the Nutrition Assessment/Monitoring and Evaluation reference sheets, but the changes occur throughout the manual and impact Nutrition Diagnosis and Nutrition Intervention as well.

Food/Nutrition-Related History Domain

The Academy continues work toward including the concepts from the Nutrition Care Process and the specific terms into standardized informatics languages and language systems, such as the Systematized Nomenclature of Medicine International (SNOMED), Logical Observation Identifiers Names and Codes (LOINC), and United Medical Language System (UMLS). As a result of the work, new terms have been added and some terms have been separated within the terminology lists. Changes to Nutrition Assessment include:

- Separate terms for documenting intake of the bioactive substances, plant stanol esters (FH-1.4.2.1), plant sterol esters (FH-1.4.2.2), psyllium (FH-1.4.2.4) and β glucan (FH-1.4.2.5)
- Additional terms for documenting vitamin intake of pantothenic acid (FH-1.6.1.12) and biotin (FH-1.6.1.13)
- Additional terms for documenting mineral intake of sulfate (FH-1.6.2.9), fluoride (FH-1.6.2.10), copper (FH-1.6.2.11), iodine (FH-1.6.2.12), selenium (FH-1.6.2.13), manganese (FH-1.6.2.14), chromium (FH-1.6.2.15), molybdenum (FH-1.6.2.16), boron (FH-1.6.2.17), and cobalt (FH-1.6.2.18)
- Revision of the class Medications and Herbal Supplement Use (FH-3) to include all complementary/alternative medicine products. This change resulted in deletion of the term Complementary/alternative medicine (CH-2.2.3). The two new subclasses are:
 - Medications (FH-3.1)
 - Complementary/alternative medicine (FH-3.2)
- Separate terms for Procurement of safe food (FH-6.2.2) and Identification of safe food (FH-6.2.6)
- Separate terms Remembers to eat (FH-7.2.7) and Recalls eating (FH-7.2.8)
- Additional terms, as a result of this work, are in Biochemical Data, Medical Tests and Procedures.

Other changes include:

- In Breastmilk/infant formula intake (FH-1.2.3), “human milk” is an approved synonym for “breastmilk.”

Two new terms have been added as part of the Diet History (FH-2.1) to cover diets followed by the patient/client due to diagnosed or reported:

- Food allergies (FH-2.1.2.5)
- Food intolerance (FH-2.1.2.6)

One new term has been added within Enteral and parenteral nutrition administration (FH-2.1.4)

- Body position, EN (FH-2.1.4.3)

Food and nutrition knowledge (FH-4.1) and Area(s) and levels of knowledge includes food and nutrition-related *skills*. Thus, the terms were retitled Food and Nutrition Knowledge/Skills (FH-4.1) and Area(s) and levels of knowledge/skills.

Four new terms within the class Physical Activity and Function (FH-7). All of the new terms are part of a new subclass, Factors affecting access to physical activity (FH-7.4):

- Neighborhood safety (FH-7.4.1)
- Walkability of neighborhood (FH-7.4.2)
- Proximity to parks/green space (FH-7.4.3)
- Access to physical activity facilities/programs (FH-7.4.4)

Physical disability, mobility and socioeconomic factors affecting physical activity can be documented in the Client History, specifically, Personal data (CH-1.1) and Social history (CH-3.1). Please see the reference sheet for more specific information on how these terms are described.

Shading/** was removed from all terms in Food and Nutrient Administration (FH-2), Behavior (FH-5) and Physical Activity and Function (FH-7) so that all of the indicators in Food/Nutrition-Related History Domain can be used and studied for both Nutrition Assessment and Nutrition Monitoring and Evaluation.

The Academy is continuing to work toward including the concepts from the Nutrition Care Process and the specific terms into standardized informatics languages and language systems, such as the Systematized Nomenclature of Medicine International (SNOMED), Logical Observation Identifiers Names and Codes (LOINC), and United Medical Language System (UMLS). As a result of the work, new terms have been added or terms have been separated within the terminology lists. Changes to Nutrition Assessment include:

- Separate terms for documenting intake of the bioactive substances, plant stanol esters (FH-1.4.2.1), plant sterol esters (FH-1.4.2.2), psyllium (FH-1.4.2.4) and β glucan (FH-1.4.2.5)
- Additional terms for documenting vitamin intake of pantothenic acid (FH-1.6.1.12) and biotin (FH-1.6.1.13)
- Additional terms for documenting mineral intake of sulfate (FH-1.6.2.9), fluoride (FH-1.6.2.10), copper (FH-1.6.2.11), iodine (FH-1.6.2.12), selenium (FH-1.6.2.13), manganese (FH-1.6.2.14), chromium (FH-1.6.2.15), molybdenum (FH-1.6.2.16), boron (FH-1.6.2.17), and cobalt (FH-1.6.2.18)
- Revision of the class Medications and Herbal Supplement Use (FH-3) to include all complementary/alternative medicine products. This change results in deletion of the term Complementary/alternative medicine (CH-2.2.3). The two new subclasses are:
 - Medications (FH-3.1)
 - Complementary/alternative medicine (FH-3.2)
- Separate terms for Procurement of safe food (FH-6.2.2) and Identification of safe food (FH-6.2.6)
- Separate terms for Remembers to eat (FH-7.2.7) and Recalls eating (FH-7.2.8)
- Additional terms for documenting laboratory findings related to the minerals boron (BD-1.9.4), chromium (BD-1.9.5), fluoride (BD-1.9.6), manganese (BD-1.9.7), molybdenum (BD-1.9.8), and selenium (BD-1.9.9)

Other changes include:

Addition of the Academy Unique Identifier, a five-digit number following the alpha-numeric term code (e.g., Total energy intake, FH-1.1.1.1, 10005).

- The Academy Unique Identifier is an essential element used by information technology (IT) professionals for data monitoring and tracking in electronic health records (EHRs). Food and nutrition professionals use this number to request data needed for reports and quality improvement.
 - The Academy Unique Identifier is associated with a term and never changes. If the term is modified, then the original term and unique identifier are retired. The new term is assigned a new unique identifier.
 - The unique identifiers do not have a structure. Although unique identifiers were initially assigned in sequential order, there is no order for the identifiers, and they do not have meaning or show relationships between terms. This is in contrast to the IDNT alpha-numeric term codes (e.g., FH-1.1.1.1), which change as the terminology changes and demonstrate relationships between terms and groups of terms.
- Neither the Academy Unique Identifiers nor the alpha-numeric term codes are recommended in nutrition documentation. Food and nutrition professionals should document only the terms (e.g., Total energy intake).

Anthropometric Measurements Domain

There are no changes to the Anthropometric Measurements Domain.

Biochemical Data, Medical Tests, and Procedures Domain

- Glucose/endocrine profile (BD-1.5) is clarified to include specific Pituitary hormone tests (growth hormone (GH), adrenocorticotrophic hormone (ACTH), luteinizing hormone (LH) and follicle-stimulating hormone (FSH)) (BD-1.5.10).
- Mineral profile (BD-1.9) has additional terms for documenting laboratory findings related to the minerals boron (BD-1.9.4), chromium (BD-1.9.5), fluoride (BD-1.9.6), manganese (BD-1.9.7), molybdenum (BD-1.9.8), and selenium (BD-1.9.9).
- Protein profile (BD-1.11) is revised to include Carbohydrate deficient transferrin (BD-1.11.8).
- Urine profile (BD-1.12) includes Urine microalbumin as an example of a Urine test (BD-1.12.4).

Shading/*** was removed from all terms in Acid-base balance profile (BD-1.1), Gastrointestinal profile (BD-1.4), Inflammatory profile (BD-1.6), Metabolic rate profile (BD-1.8) and Protein profile (BD-1.11), so that all of the indicators in Biochemical Data, Medical Tests and Procedures Domain can be used and studied for both Nutrition Assessment and Nutrition Monitoring and Evaluation.

Nutrition Focused Physical Findings Domain

Shading/*** was removed from all terms in Body language (PD-1.1.2), so that all of the indicators in Nutrition-Focused Physical Findings Domain can be used and studied for both Nutrition Assessment and Nutrition Monitoring and Evaluation.

Client History Domain (Nutrition Assessment Only)

Shading/*** was not removed from the Client History Domain because it is believed that these indicators do not change as a result of nutrition intervention. Therefore, terms in this domain are used only for Nutrition Assessment.

Comparative Standards

- Terms for documenting Estimated vitamin needs of pantothenic acid (CS-4.1.12) and biotin (CS-4.1.13) were added.
- Terms for documenting Estimated mineral needs of sulfate (CS-4.2.9), fluoride (CS-4.2.10), copper (CS-4.2.11), iodine (CS-4.2.12), selenium (CS-4.2.13), manganese (CS-4.2.14), chromium (CS-4.2.15), molybdenum (CS-4.2.16), boron (CS-4.2.17), and cobalt (CS-4.2.18) were also added for consistency with terms in Nutrition Assessment and Monitoring and Evaluation.

Nutrition Assessment Matrix

The Nutrition Assessment Matrix is a tool that provides a resource to cross-reference specific nutrition assessment parameters with the nutrition diagnoses with which they are associated. With the completion of the nutrition assessment and monitoring evaluation terms, the alpha-numeric codes for locating the nutrition assessment parameters are noted on the matrix. This is useful for accurate labeling of the nutrition assessment/monitoring and evaluation indicators and for electronic health record documentation.

Nutrition Care Process and Nutrition Assessment

Step 1, nutrition assessment, of the Nutrition Care Process forms the foundation for progressing through the other three steps in the process. It is a systematic method for obtaining, verifying, and interpreting data needed to identify nutrition-related problems, their causes, and significance. Nutrition assessment is an ongoing, nonlinear, dynamic process that involves initial data collection as well as also continual reassessment and analysis of the patient/client's status compared to specified criteria.

Special Note: The terms patient(s)/client(s) are used in association with the NCP; however, the process is also intended for use with groups. In addition, family members or caregivers are an essential asset to the patient/client and food and nutrition professional in the NCP. Therefore, groups, populations, families, and caregivers of patients/clients are implied each time a reference is made to patient/client.

Several data sources frequently contribute to a nutrition assessment, such as information gained from the referring health care provider or agency, patient/client interview, medical record, patient/client rounds, community-based surveys, administrative data, and epidemiological studies. Data sources may vary among nutrition settings.

Patients/clients enter the first step of the NCP – nutrition assessment – through two means: screening and referral, both of which are outside of the NCP.

Strong critical thinking skills are essential for selection, collection, and interpretation of data relevant to patients/clients. Each patient/client presents a unique mix of factors, that impact the nutrition assessment approach. The nature of the individual or group and the practice setting/environment guide the appropriate selection of validated and reliable tools to use in data collection.

Critical Thinking Skills for Nutrition Assessment

- Determining appropriate data to collect
- Determining the need for additional information
- Selecting assessment tools and procedures that match the situation
- Applying assessment tools in valid and reliable ways
- Distinguishing relevant from irrelevant data
- Distinguishing important from unimportant data
- Validating the data

Results of a Nutrition Assessment

Nutrition assessment leads to the appropriate initial determination that a nutrition diagnosis/problem exists. Nutrition reassessment leads to reverification that a nutrition diagnosis/problem exists. If a nutrition diagnosis can be made, the food and nutrition professional labels the problem and creates a PES (Problem, Etiology, Signs/Symptoms) statement in Step 2 of the NCP.

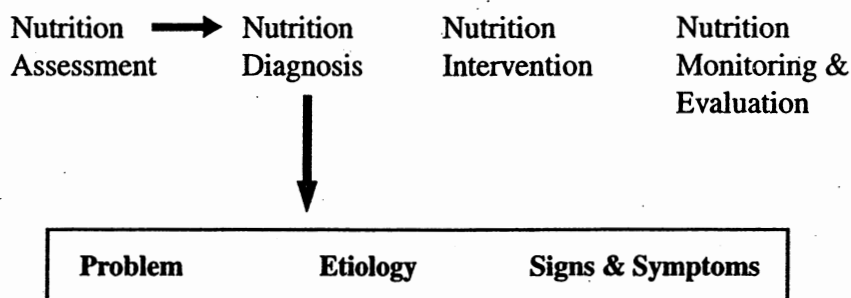
Upon completion of an initial or reassessment, it is also possible that a nutrition problem may not be identified; further information or testing may be necessary to make a determination; or the problem may not be modifiable by further nutrition care and discharge or discontinuation from this episode of nutrition care may be appropriate. If the assessment indicates that no nutrition problem currently exists that warrants a nutrition intervention, practitioners may use the term "No nutrition diagnosis at this time (NO-1.1)" (2).

As noted earlier, screening and referral are the typical entrance points into the Nutrition Care Process. A screening tool may provide some evidence of an emerging nutrition problem; however, thorough review of the patient/client assessment data may yield no nutrition problem. The same may be true of a referral. Other medical professionals or system protocols may prompt a referral of a patient/client to a food and nutrition professional, but a nutrition problem is not always present. At that point, it is incumbent on the professional to document the approach recommended, such as whether additional information/testing is needed or if discharge from nutrition care is appropriate.

Important: Based on the nutrition assessment/reassessment, the food and nutrition professional determines:

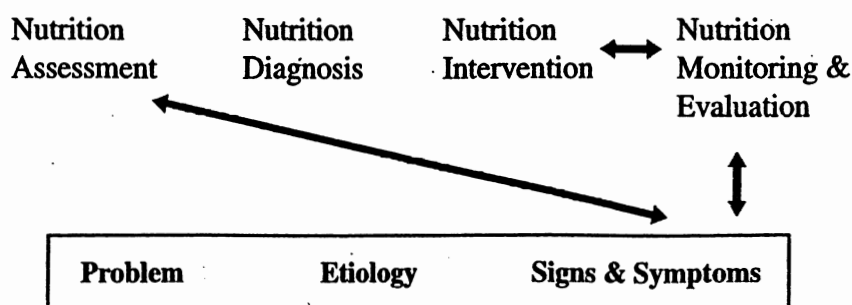
- IF a nutrition diagnosis/problem exists
- AND the plan for continuation of care; specifically, progression through the NCP, the need for additional information/testing prior to continuing in the process, or discharge from nutrition care.

Relationships



Food and nutrition professionals use the data collected in the nutrition assessment to identify and label the patient/client's nutrition diagnosis using standard nutrition diagnosis terminology. Each nutrition diagnosis has a reference sheet that includes its definition, possible etiology/causes, and common signs or symptoms identified in the nutrition assessment step.

Relationships



In addition, through nutrition reassessment, food and nutrition professionals perform nutrition monitoring and evaluation to determine whether the nutrition intervention strategy is working to resolve the nutrition diagnosis, its etiology, and/or signs and symptoms.

Nutrition Assessment Domains

In the development of the standardized nutrition diagnosis language, the following five domains of nutrition assessment data were identified—Food/Nutrition-Related History; Biochemical Data, Medical Tests, and Procedures; Anthropometric Measurements; Nutrition-Focused Physical Findings; and Client History. Because the nutrition assessment forms the basis for identifying a nutrition diagnosis, these terms are reflected on each nutrition diagnosis reference sheet and the signs/symptoms are grouped by category of nutrition assessment data.

Following are some examples of data collected within each assessment domain; however, these examples are not all-inclusive:

Food/Nutrition-Related History consists of Food and Nutrient Intake, Food and Nutrient Administration, Medication and Complimentary/Alternative Medicine Use, Knowledge/Beliefs/Attitudes, Behavior, Factors Affecting Access to Food and Food/Nutrition-Related Supplies, Physical Activity and Function, and Nutrition-Related Patient/Client-Centered Measures.

Food and Nutrient Intake includes factors such as composition and adequacy of food and nutrient intake, and meal and snack patterns.

Food and Nutrient Administration includes current and previous diets and/or food modifications, eating environment, and enteral and parenteral nutrition administration.

Medication and Complimentary/Alternative Medicine Use includes prescription and over-the-counter medications, including herbal preparations and complementary/alternative medicine products used.

Knowledge/Beliefs/Attitudes includes understanding of nutrition-related concepts and conviction of the truth and feelings/emotions toward some nutrition-related statement or phenomenon, along with readiness to change nutrition-related behaviors.

Behavior includes patient/client activities and actions which influence achievement of nutrition-related goals.

Factors Affecting Access to Food and Food/Nutrition-Related Supplies includes factors that affect intake and availability of a sufficient quantity of safe, healthful food and water as well as food/nutrition-related supplies.

Physical Activity and Function includes physical activity, and cognitive and physical ability to engage in specific tasks, e.g., breastfeeding and self-feeding.

Nutrition-Related Patient/Client-Centered Measures consists of patient/client's perception of his or her nutrition intervention and its impact on life.

Note: Whenever possible, nutrient intake data should be considered in combination with clinical, biochemical, anthropometric information, medical diagnosis, clinical status, and/or other factors as well as diet to provide a valid assessment of nutritional status based on a totality of the evidence. (Institute of Medicine. *Dietary Reference Intakes: Applications in Dietary Assessment*. Washington, DC: National Academies Press, 2000.)

Anthropometric Measurements include height, weight, body mass index (BMI), growth pattern indices/percentile ranks, and weight history.

Biochemical Data, Medical Tests, and Procedures include laboratory data, (e.g., electrolytes, glucose, and lipid panel) and tests (e.g., gastric emptying time, resting metabolic rate).

Nutrition-Focused Physical Findings include findings from an evaluation of body systems, muscle and subcutaneous fat wasting, oral health, suck/swallow/breathe ability, appetite, and affect.

Client History consists of current and past information related to personal, medical, family, and social history.

Personal History includes general patient/client information such as age, gender, race/ethnicity, language, education, and role in family.

Patient/Client/Family Medical/Health History includes patient/client or family disease states, conditions, and illnesses that may have a nutritional impact.

Social History includes items such as socioeconomic status, housing situation, medical care support, and involvement in social groups.

In addition to this reference, additional resources for nutrition assessment include *ADA Pocket Guide to Nutrition Assessment* (3), and *ADA Pocket Guide to Pediatric Nutrition Assessment* (4).

In regard to the Biochemical, Medical Tests, and Procedures category of nutrition assessment, the nutrition diagnoses contain normal test levels and ranges only for guidance. Nutrition interventions should be individualized based on many factors, and laboratory values alone are not diagnostic. The clinical judgment of an appropriately educated, experienced individual is the basis for nutrition diagnosis.

Nutrition Assessment Components: Review, Cluster, and Identify

In the first step of the Nutrition Care Process, food and nutrition professionals do the following three things—

- Review data collected for factors that affect nutritional and health status.
- Cluster individual data elements to identify a nutrition diagnosis as described in the nutrition diagnosis reference sheets.
- Identify standards by which data will be compared.

Review

Nutrition assessment indicators are clearly defined markers that can be observed and measured. Selected nutrition assessment data should be relevant to the patient/client's nutrition diagnosis, its etiology, and signs/symptoms. The data may also be relevant to the patient/client disease state, quality management goals for nutrition, and nutrition care and health care outcome goals.

Practitioners use nutrition assessment data to identify and provide evidence about a nutrition-related problem or diagnosis. Specific data elements or indicators may also be used by practitioners to monitor and evaluate progress made toward desired nutrition care outcomes, where the nutrition care outcome indicators provide information about the type and magnitude of progress made, when the nutrition problem is resolved, and what aspects of nutrition intervention are or are not working.

Cluster

Organized assessment data are clustered for comparison with the defining characteristics of suspected diagnoses as listed in the diagnosis reference sheets. One data element of the nutrition assessment may lead food and nutrition professionals toward a particular nutrition diagnosis, but it is the clustering of data that results in identification of the correct nutrition diagnosis at that point in time.

Note: Defining characteristics are a typical cluster of signs and symptoms that provide evidence that a nutrition diagnosis exists. Signs are the observations of a trained clinician and symptoms are changes reported by the patient/client (1).

Many food and nutrition professionals cluster data without consciously deciding to do so. For example, food and nutrition professionals evaluate laboratory or food intake differently depending upon the age or medical condition of the patient/client. Daily intake of 1-2 pieces of fruit (i.e., bananas, oranges) by a 9-year-old child on dialysis is interpreted differently than the same intake by a healthy 22-year-old college student.

To maintain consistency in the organization of the nutrition assessment terminology, practitioners may find it challenging at times to locate specific pieces of information to accomplish the clustering.

Example: Food preferences, likes and dislikes, was moved, in a previous edition, from the Food Intake (FH-1.2.2) reference sheet to the Beliefs and Attitudes (FH-4.2) reference sheet.

The Food intake (FH-1.2.2) reference sheet defines how practitioners describe intake in amounts, types, pattern, and/or quality (for example, 1-2 pieces of fruit/day). Beliefs and Attitudes gives insight into why the patient/client has a particular belief or attitude toward food and nutrition, and food preferences may be one factor to explain why a patient/client consumes bananas and oranges.

Term number (e.g., NI-1.2) used for information. The Academy does not recommend using codes in documentation.

Identify

When available, national, institutional, and/or regulatory standards are essential for nutrition assessment data comparison. For assessment data related to the intake of specific nutrients, comparative standards are available in this resource to guide accurate documentation of a patient/client's nutrition recommendation and for comparison of the patient/client's estimates of intake or estimates of usual intake of one or more nutrients. Food and nutrition professionals must identify the most appropriate reference standard or goal based on, at a minimum, the following:

- Practice setting (e.g., inpatient or outpatient, long-term care, public health/community)
- Age of the patient/client (e.g., pediatrics, geriatrics)
- Disease/injury state and severity (e.g., renal disease, diabetes, critical illness)

For example, HgbA1c is a valid measure of glucose status during a 60- to 90-day period. Therefore, it may be useful in assessing a patient/client's glucose status prior to a hospital admission, but it is not relevant data for assessing an intensive care patient/client with an acute elevation of blood glucose. This example illustrates the importance of appropriate nutrition assessment data selection and interpretation.

Each situation will be different depending on the practice setting, population, and disease state and severity. Additional factors, such as regulations, care standards, and quality management goals, may also influence indicator selection and evaluation. Identification of the incorrect assessment data or misinterpretation of the data element may lead to an incorrect nutrition diagnosis. Moreover, the appropriate standards or criteria should be noted in the food and nutrition professional's policies and procedures or other documents for use in patient/client records, quality or performance improvement, or in formal research projects.

Nutrition Assessment Components Summary

- Review data collected for factors that influence nutritional and health status.
- Cluster individual data elements to identify a nutrition diagnosis as described in the diagnosis reference sheets.
- Identify standards by which data will be compared.

Nutrition Care Indicators

Nutrition care indicators are clearly defined markers that can be observed and measured. As noted previously, indicators gathered during nutrition assessment are clustered to identify and label a patient/client's nutrition diagnosis and its etiology and signs/symptoms. The indicators selected may also be used in the future to evaluate changes in the patient/client's nutrition diagnosis, disease state, quality management goals for nutrition, and health care outcome goals.

Nutrition care indicators include:

- Food and nutrient intake; medication use; growth and body composition; food and nutrition-related knowledge, attitudes and behaviors; food access; and functional capabilities such as physical activity
- Anthropometric data, such as growth pattern and weight history
- Laboratory values, such as HgbA1c, hematocrit, or serum cholesterol
- Physical findings that are observed or obtained through interview or the medical record
- Personal and family medical history and social factors

Nutrition assessment reference sheets, which are combined with nutrition monitoring and evaluation reference sheets, define the nutrition care indicators that may be appropriate for assessment and monitoring and evaluation within a variety of practice settings.

Nutrition Care Indicator → What will be measured

Assessment of Nutrition Indicators

Food and nutrition professionals make judgments comparing the actual value of the measured indicator to a science-based criteria or individualized goal.

Nutrition Care Criteria → What it is compared against

Criteria

Two criteria are suggested for nutrition assessment. The same two criteria are used for monitoring and evaluation:

- Nutrition prescription or goal (e.g., a behavior has a goal not a nutrition prescription)
- Reference standard (e.g., national, institutional, and/or regulatory standards)

The nutrition prescription is the patient/client's individualized recommended dietary intake of energy and/or selected foods or nutrients based on current reference standards or dietary guidelines and the patient/client's health condition and nutrition diagnosis. For example, a patient of normal body weight has a serum low density lipoprotein (LDL) cholesterol of 150 mg/dL. His nutrition prescription is less than 30% calories/kcal/kJ from fat with less than 10% calories/kcal/kJ from saturated fat.

For biochemical measures such as LDL cholesterol, the criteria that may be used is the reference standard established by the U.S. National Heart Lung and Blood Institute of serum LDL <100 mg/dL.

Special Note: Laboratory parameters within the reference sheets are provided only for guidance.

- Laboratory values may vary depending on the laboratory performing the test.
- Scientific consensus does not always exist concerning selection of biochemical tests, laboratory methods, reference standards, or interpretation of data.
- Laboratory findings (normal or abnormal) may be evaluated for their significance or lack of significance depending on the patient/client population, disease severity, and/or treatment goals.
- Current national, institutional, and regulatory guidelines that affect practice should be appropriately applied to individual patients/clients.
- Arrows used with laboratory values: ↑ represents above a reference standard and ↓ represents below a reference standard.

Reference standards, as noted previously, are national, institutional, and/or regulatory standards. Food and nutrition professionals are familiar with reference standards for laboratory measures. Examples of other reference standards include:

- National standards for populations or patient/client groups or disease conditions: dietary reference intake standards (e.g., Dietary Reference Intakes (DRIs)) or other reference intakes, national food guidelines (e.g., U.S. Dietary Guidelines) or guidelines for specific treatment or disease condition such as those developed by the American Society of Parenteral and Enteral Nutrition, the European Society of Parenteral and Enteral Nutrition (ESPEN) and/or the U. S. National Kidney Foundation as examples.
- Institutional standards: e.g., established guidelines specifying how to evaluate weight change in geriatric patients/clients.
- Regulatory standards: laws with nutrition care guidelines for a certain population, such as long-term care, or accreditation and certification standards such as those developed by the Joint Commission.

Food and nutrition professionals select the most appropriate reference standard or goal based on the patient/client condition and patient care setting. Further, food and nutrition professionals are responsible for understanding any defining parameters or limitations for reference standards used. The DRIs, for example, have very specific parameters for interpretation of estimated intake.

Assessment of Nutrient Intake

Food and nutrition professionals must keep in mind that nutrient intake assessments are estimations. To begin with, data collection for nutrient intake is imprecise since it relies generally on patient/client estimations and reports of intake. Enteral and/or parenteral nutrition intake can be more precisely measured if it is the sole source of nutrition and accurate records of enteral and/or parenteral nutrition delivery are available.

Once the data are collected, food and nutrition professionals compare the estimated nutrient intake to a patient/client goal or a reference standard. Historically, dietary reference intake standards, (e.g., DRIs) have been used for comparison of intake in a variety of populations since other specific reference standards are not always available. Practitioners must keep in mind that if using the DRIs, there are the following interpretation parameters:

- For evaluation of nutritional status, nutrient intake data should be combined with biochemical, clinical, anthropometric, medical diagnosis, and clinical data.
- The DRIs are established for healthy individuals. It is not clear how the DRIs should be interpreted in patients/clients with an illness, injury, disease, or other medical condition.
- Estimations consistent with inadequate intake do not necessarily mean there is a nutrient deficiency.

The notation from the U.S. Institute of Medicine (IOM) advises combining intake data with clinical, biochemical, and other supporting information to complete a valid assessment of nutritional status. While it is acknowledged that inadequate intake is not synonymous with nutritional status, there may be an implied expectation that an inadequate intake

over a period of time will lead to a change in nutritional status. The difficulty encountered is in the ability to accurately predict the consequences of intake due to a myriad of factors such as scientific uncertainty about “nutrient requirements,” individual differences, and inaccurate intake assessments.

- If a synonym for the term “inadequate” is helpful or needed, an approved alternate is the word “suboptimal.” Thus, a food and nutrition professional could use either the nutrition diagnosis label “Suboptimal Protein Intake” or “Inadequate Protein Intake.”
- The following note is part of the definition for the ten nutrition assessment and monitoring and evaluation reference sheets related to nutrient intake and the eleven nutrition diagnoses with “Inadequate” in the label.

Note: Whenever possible, nutrient intake data should be considered in combination with clinical, biochemical, anthropometric information, medical diagnosis, clinical status, and/or other factors as well as diet to provide a valid assessment of nutritional status based on a totality of the evidence. (Institute of Medicine. Dietary Reference Intakes: Applications in Dietary Assessment. Washington, DC: National Academies Press; 2000.)

Bioactive substances do not have established DRIs. They are not considered essential nutrients because inadequate intakes do not result in biochemical or clinical symptoms of deficiency. However, naturally occurring food components with potential risk or benefit to health are reviewed by the Food and Nutrition Board of the Institute of Medicine and, if sufficient data exist, reference intakes are established. Further, the nutrition assessment and nutrition monitoring and evaluation reference sheets note that the criteria for evaluation of intake must be the patient/client goal or nutrition prescription since there are no established minimum requirements or Tolerable Upper Intake Levels. The patient/client goal or nutrition prescription would be based on an individual goal or research, for example, the Academy Disorders of Lipid Metabolism Evidence-Based Guideline. This guideline considers the evidence supporting intake of plant stanol/sterol esters in the presence of lipid disorders. It is available in the Academy Evidence Analysis Library (www.andevidencelibrary.com). Therefore, the note added to the definition of Suboptimal bioactive substance intake is:

Note: Bioactive substances are not part of the Dietary Reference Intakes, and therefore there are no established minimum requirements or Tolerable Upper Intake Levels. However, RDs can assess whether estimated intakes are adequate or excessive using the patient/client goal or nutrition prescription for comparison.

It is important to reiterate that food and nutrition professionals are given two criteria for use when assessing intake—the nutrition prescription/goal and the reference standards (e.g., national, institutional, and/or regulatory standards). Practitioners are not limited to using the DRIs as the criteria for comparison of nutrient intake data. In certain populations where other appropriate scientific information has emerged and reference standards are available, such as in renal disease, it may be appropriate to use an alternate reference standard instead of the DRIs.

Practitioners from countries that do not use the Institute of Medicine’s Dietary Reference Intakes (DRIs) should refer to their own established dietary reference standards and guidance provided in this manual regarding Other Reference Intakes Interpretation.

Nutrition Assessment and Nutrition Monitoring and Evaluation Reference Sheets

In the manual are the combined Nutrition Assessment and Nutrition Monitoring and Evaluation reference sheets.

Similarities Between Nutrition Assessment and Nutrition Monitoring and Evaluation

Food and nutrition professionals familiar with the standardized language for nutrition monitoring and evaluation will find that the data described for nutrition assessment are quite familiar. In defining the nutrition monitoring and evaluation taxonomy, it was clear that there is substantial overlap between nutrition assessment and nutrition monitoring and evaluation terminology. Many data points assessed are used, through nutrition reassessment, in monitoring and evaluation.

Therefore, the domains, classes, terms, and reference sheets were combined for Nutrition Assessment and Nutrition Monitoring and Evaluation. The approach for collecting both types of data is the same. Practitioners first collect and record data and then interpret the data relative to some criteria, a goal or nutrition prescription, or national, institu-

tional, and/or regulatory standards. Further, food and nutrition professionals assess and reassess data during monitoring and evaluation.

Some practitioners may believe that during an episode of nutrition care, the process from nutrition assessment to nutrition monitoring and evaluation is strictly linear; however, this is not always the case. Food and nutrition professionals assess and reassess the patient/client during an episode of care to determine whether there are changes to the nutrition diagnosis, emergence of a new nutrition diagnosis, and progress because of nutrition intervention.

It is important to reiterate that while the data may be the same or related in these two steps, the purpose and use are distinct. The nutrition assessment data are needed to identify whether a nutrition-related problem exists and to establish a plan for continuation for care. The monitoring and evaluation data are necessary for evaluating the outcomes of nutrition interventions.

Differences Between Nutrition Assessment and Nutrition Monitoring and Evaluation

Nutrition assessment includes a broader set of data elements or indicators since certain types of data may be assessed but may not be monitored to evaluate whether the nutrition intervention affected the patient/client outcome. On the reference sheets, indicators used only for nutrition assessment, those in the Client History Domain, have *** after the indicator. In some reference sheets for the Food/Nutrition-Related History, Anthropometric Measurements, Biochemical Data, Medical Tests and Procedures, and Nutrition-Focused Physical Findings Domains there are *no* indicators with *** because all of the indicators are used for both nutrition assessment and nutrition monitoring and evaluation.

One example of an indicator used only for nutrition assessment is physical disability. Practitioners include physical disability in a nutrition assessment if it is relevant to the patient/client's nutrition diagnosis and/or nutrition intervention. However, the practitioner cannot change the physical disability through nutrition intervention; therefore, physical disability is not included in nutrition monitoring and evaluation as an indicator of the impact of nutrition care. Another example of an assessment indicator not used in monitoring and evaluation is medical history data, since nutrition intervention does not influence the presence or absence of a medical diagnosis (or diagnoses). Although Client History Domain indicators are not used for nutrition monitoring and evaluation, they may be reassessed for their presence and impact on nutrition care.

Nutrition Assessment and Nutrition Monitoring and Evaluation Reference Sheet Content

The combined reference sheets contain eight distinct components:

- Definition of the nutrition assessment and nutrition monitoring and evaluation term
- The nutrition assessment and nutrition monitoring and evaluation indicators
- Measurement method or data sources recommended
- The nutrition interventions with which the nutrition assessment and nutrition monitoring and evaluation data are associated
- The nutrition diagnoses with which the nutrition assessment and nutrition monitoring and evaluation data are used
- The criteria for evaluation
- The patient/client nutrition assessment and nutrition monitoring and evaluation documentation example
- References

Following is a more complete description of the eight components of the combined nutrition assessment and nutrition monitoring and evaluation reference sheet:

The **definition** defines the specific parameters of the term.

The **indicators** identify the data elements that are evaluated to (a) determine the defining characteristics of the patient/client and (b) measure change based on nutrition intervention. Food and nutrition professionals may or may not use all of the indicators associated with a term. Indicators used only for

nutrition assessment (i.e., Client History indicators) have *** after the indicator. In the remaining Nutrition Assessment domains, *no* indicators have *** because all of the indicators are used for both nutrition assessment and nutrition monitoring and evaluation.

The **measurement method or data sources** identify some of the resources that food and nutrition professionals use to obtain nutrition assessment and nutrition monitoring and evaluation data.

The typical **nutrition interventions** with which the nutrition care outcomes are associated are listed.

The typical **nutrition diagnoses** associated with the term and indicators are listed.

Two **criteria** are identified for comparison of the indicators: (a) goal/nutrition prescription, or (b) reference standard.

The **patient/client example** includes sample nutrition assessment and nutrition monitoring and evaluation documentation. It describes only one of the indicators. As described earlier, depending on (a) the practice setting (e.g., inpatient or outpatient, long-term care, community), (b) the patient/client (e.g., pediatrics, geriatrics), and (c) disease state and severity, one or multiple indicators may be followed at a time.

References list citations for published measurement techniques and reference standards for common patient/client populations and settings. Food and nutrition professionals are not limited to the references offered and are encouraged to use others pertinent to their patient/client and practice setting needs.

Once measurement techniques and criteria as well as any other pertinent parameters are identified, they should be noted in the food and nutrition professional's policies and procedures or other documents for use in patient/client records, quality or performance improvement, or in formal research projects.

Individual Patient/Client Example

Nutrition assessment and/or monitoring and evaluation term: Nutritional anemia profile

Nutrition care indicator: Serum ferritin

Criteria: Based on a reference standard: The patient/client's serum ferritin is 8 ng/mL, which is below (above, below, within) the expected limit for adult females.

Nutrition assessment and monitoring and evaluation documentation:

<i>Initial nutrition assessment with patient/client</i>	Patient/client's serum ferritin is 8 ng/mL, which is below the expected limit for adult females. Will monitor change in serum ferritin at the next appointment.
<i>Reassessment after nutrition intervention</i>	Goal/reference standard achieved as patient/client's serum ferritin is 10.9 ng/mL, within normal limits.

Group Example

Nutrition assessment and/or monitoring and evaluation term: Nutritional anemia profile

Nutrition care indicator: Hemoglobin

Criteria: Based on a reference standard: 20% or fewer of low-income women will have a hemoglobin level < 11.0 g/dL during the third trimester of pregnancy (5).

Nutrition assessment and monitoring and evaluation documentation:

<i>Initial nutrition assessment with population</i>	44% of low-income women have a hemoglobin level of < 11.0 g/dL during the third trimester of pregnancy. Monitor change in prevalence of low hemoglobin levels among low-income women.
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<i>Reassessment after nutrition intervention</i>	Prevalence of anemia among low-income pregnant women is 29%. Significant progress made toward the goal, 20% or less, for prevalence of anemia.
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These reference sheets will assist food and nutrition professionals working in a variety of settings, with individuals and groups, when assessing and monitoring and evaluating nutrition care indicators.

Nutrition Assessment: Documentation

Documentation is recommended throughout the Nutrition Care Process and supports all of the steps. Quality documentation of the nutrition assessment step should be relevant, accurate, and timely. Inclusion of the following information would further describe quality nutrition assessment documentation:

- Date and time
- Pertinent data collected and comparison with standards such as estimated nutrient intake; dietary reference intakes; patient/client perceptions, values, and motivation related to presenting problems; patient/client's level of understanding, food-related behaviors, and other nutrition care indicators for future nutrition monitoring and evaluation
- Reason for discharge/discontinuation if appropriate

Nutrition Assessment: Data Sources and Tools

To complete a patient/client's nutrition assessment, the following tools may be useful:

- Screening or referral form
- Patient/client interview
- Medical or health records
- Consultation with other caregivers including family members
- Community based surveys and focus groups
- Statistical reports, administrative data, and epidemiological studies

These tools can be used when patients are seen individually or in groups, or when the encounter is conducted by phone or via computer. Pooled data may be monitored and evaluated using tracking forms and computer software programs.

Summary

Nutrition assessment is the first step in the Nutrition Care Process; however, it is used throughout each cycle of the Nutrition Care Process and is not an isolated event. Food and nutrition professionals recognize that nutrition assessment is a dynamic process that develops throughout the Nutrition Care Process. For example, a food and nutrition professional may be in the middle of the nutrition education intervention when the client provides a new piece of information that may cause a modification of the nutrition diagnosis, the PES statement, or even the nutrition intervention.

Future research will continue to shed light on the appropriate data to collect and their application in nutrition assessment with a patient/client. Moreover, as the profession utilizes nutrition assessment within the other steps of the Nutrition Care Process, the most valid and reliable assessment data to use in nutrition diagnosis, nutrition intervention, and nutrition monitoring and evaluation will also become evident.

References

1. Writing Group of the Nutrition Care Process/Standardized Language Committee. Nutrition Care Process and Model part I: The 2008 update. *J Am Diet Assoc.* 2008;108:1113-1117.
2. Writing Group of the Nutrition Care Process/Standardized Language Committee. Nutrition Care Process part II: Using the International Dietetics and Nutrition Terminology to document the nutrition care process. *J Am Diet Assoc.* 2008;108:1287-1293.
3. Charney P, Malone A, eds. *ADA Pocket Guide to Nutrition Assessment*. 2nd ed. Chicago, IL: American Dietetic Association; 2009.
4. Leonberg BL. *ADA Pocket Guide to Pediatric Nutrition Assessment*. Chicago, IL: American Dietetic Association; 2008.

NCP Step 2: Nutrition Diagnosis

What is the purpose of a nutrition diagnosis? The purpose is to identify and describe a specific nutrition problem that can be resolved or improved through treatment/nutrition intervention by a food and nutrition professional. A nutrition diagnosis (e.g., inconsistent carbohydrate intake) is different from a medical diagnosis (e.g., diabetes).

How does a food and nutrition professional determine a nutrition diagnosis? Food and nutrition professionals use the data collected in the nutrition assessment to identify and label the patient/client's* nutrition diagnosis using standard nutrition diagnostic terminology. Each nutrition diagnosis has a reference sheet that includes its definition, possible etiology/causes, and common signs or symptoms identified in the nutrition assessment step.

How are the Nutrition Diagnoses organized? In three categories:

Intake	Clinical	Behavioral-Environmental
<i>Too much or too little of a food or nutrient compared to actual or estimated needs</i>	<i>Nutrition problems that relate to medical or physical conditions</i>	<i>Knowledge, attitudes, beliefs, physical environment, access to food, or food safety</i>

How is the Nutrition Diagnosis documented? Food and nutrition professionals write a PES statement to describe the problem, its root cause, and the assessment data that provide evidence for the nutrition diagnosis. The format for the PES statement is "Nutrition problem label related to ____ as evidenced by ____."

(P) Problem or Nutrition Diagnosis Label	(E) Etiology Cause/Contributing Risk Factors	(S) Signs/Symptoms
Describes alterations in the patient/client's nutritional status.	Linked to the nutrition diagnosis label by the words "related to."	Data used to determine that the patient/client has the nutrition diagnosis specified. Linked to the etiology by the words "as evidenced by."

No nutrition diagnosis at this time (NO-1.1) may be documented if the assessment indicates that no nutrition problem currently exists that warrants a nutrition intervention.

What are the guidelines for selecting the nutrition diagnosis and writing a clear PES statement? The most important and urgent problem to be addressed is selected. When specifying the nutrition diagnosis and writing the PES statement, food and nutrition professionals ask themselves a series of questions that help clarify the nutrition diagnosis. (See the critical thinking box.)

Critical thinking during this step...

Evaluate your PES statement by using the following:

- P** – Can the nutrition professional resolve or improve the nutrition diagnosis for this individual, group, or population? When all things are equal and there is a choice between stating the PES statement using two nutrition diagnoses from different domains, consider the Intake nutrition diagnosis as the one more specific to the role of the RD.
 - E** – Evaluate what you have used as your etiology to determine if it is the "root cause" or the most specific root cause that the RD can address with a nutrition intervention. If as an RD you cannot resolve the problem by addressing the etiology, can the RD intervention at least lessen the signs and symptoms?
 - S** – Will measuring the signs and symptoms indicate if the problem is resolved or improved? Are the signs and symptoms specific enough that you can monitor (measure/evaluate changes) and document resolution or improvement of the nutrition diagnosis?
- PES Overall** – Does the nutrition assessment data support a particular nutrition diagnosis with a typical etiology and signs and symptoms?

Are food and nutrition professionals limited to the nutrition diagnosis terms? Nutrition diagnosis terms and definitions were developed with extensive input and should fit most situations; however, food and nutrition professionals can submit proposals for additions or revisions using the Procedure for Nutrition Controlled Vocabulary/Terminology Maintenance/Review available from the Academy.

*Patient/client refers to individuals, groups, populations, family members, and/or caregivers.

Nutrition Care Process Step 2: Nutrition Diagnosis

Introduction

The Academy has identified and defined nutrition diagnoses*/problems used in the profession of dietetics. A nutrition diagnosis identifies and labels a nutrition problem that a food and nutrition professional is responsible for treating independently. The standardized language of nutrition diagnoses/problems is an integral component in the Nutrition Care Process (NCP). In fact, several other professions, including medicine, nursing, physical therapy, and occupational therapy, utilize care processes with defined terms for making diagnoses specific to their professional scope of practice.

* If a synonym for “nutrition diagnosis” is helpful or needed, an approved alternate is “nutrition problem.”

The Academy’s Nutrition Care Process/Standardized Language (NCP/SL) Committee developed a conceptual framework for the standardized nutrition language and identified the nutrition diagnoses/problems. The framework outlines the domains within which the nutrition diagnoses/problems fall and the flow of the Nutrition Care Process in relation to the continuum of health, disease, and disability.

The methodology for developing sets of nutrition diagnosis terms included systematically and simultaneously collecting data from multiple sources. Data were collected from a select group of Academy-recognized leaders and award winners prior to starting the project. A 12-member task force developed the terms with input from groups of community, ambulatory, acute care, and long-term care practitioners and obtained feedback from experts concerning the research supporting the terms and definitions.

The methodology for continued development and refinement of these terms has been identified. As with the ongoing updating of medical procedure codes, (e.g., the American Medical Association Current Procedural Terminology [CPT] codes), these terms will also be published on an ongoing basis. The terms are being studied in a number of research projects to assess their validity. Based on the results of content validation studies by Charney (1) and E.B. Enrione (unpublished correspondence with the Committee; 2006), the Committee recommended changes to the nutrition diagnoses, and these were published in the *IDNT Reference Manual*, First Edition (2). Further changes are anticipated as results of additional studies become available. The nutrition diagnosis terms are being incorporated into several research studies that explore use in ambulatory or inpatient settings or by specific types of practice, e.g., nutrition support and oncology.

As research is completed, findings will be incorporated into future versions of these terms. Future iterations and changes to the nutrition diagnoses/problems and the reference sheets are expected as this standard language evolves. In addition, practitioners can submit suggested changes. The process for practitioners to submit suggested revisions to the nutrition diagnoses is available on the Academy website in the Nutrition Care Process section.

The Academy is working toward including the concepts from the Nutrition Care Process and these specific terms in standards for electronic health records and incorporation into standardized informatics languages and language systems, such as the Systematized Nomenclature of Medicine International (SNOMED), Logical Observation Identifiers Names and Codes (LOINC), and Unified Medical Language System (UMLS). The Academy is in dialogue with these groups to include the NCP terminology, where appropriate, in these languages. Thus far, the feedback from the database and informatics groups has been quite positive, and they support a need for documenting the unique nature of nutrition services.

What Is New in This Edition Related to Nutrition Diagnosis?

This edition includes revisions to the standardized language for nutrition diagnosis. Additional nutrition diagnoses and changes to the reference sheets were carefully reviewed by the NCP/SL Committee, members of the Academy’s IDNT

Advisory Panel, members of the IDNT classification workgroup, and experts from the international community. This included review of the Academy's evidence-based practice guidelines by the Academy's Evidence-based Practice Committee and review of the nutrition diagnosis Malnutrition (NI-5.2) by the Academy's Malnutrition Workgroup.

Nutrition Diagnoses

This edition includes revisions to the standardized language for nutrition diagnosis. Additional nutrition diagnoses and changes to the reference sheets were carefully reviewed by the NCP/SL Committee, members of the Academy's IDNT Advisory Panel, members of the IDNT classification workgroup, and experts from the international community. This included review of the Academy's evidence-based practice guidelines by the Academy's Evidence-based Practice Committee and review of the nutrition diagnosis Malnutrition (NI-5.2) by the Academy's Malnutrition Workgroup.

As a result of the work toward including the specific terms into standardized informatics languages and language systems, new terms have been added or terms have been separated within the terminology lists. New Nutrition Diagnoses include:

- Additional terms for documenting Inadequate vitamin intake of pantothenic acid (NI-5.9.1.12) and biotin (NI-5.9.1.13).
- Additional terms for documenting Excessive vitamin intake of pantothenic acid (NI-5.9.2.12) and biotin (NI-5.9.2.13).
- Additional terms for documenting Inadequate mineral intake of sulfate (NI-5.10.1.9), fluoride (NI-5.10.1.10), copper (NI-5.10.1.11), iodine (NI-5.10.1.12), selenium (NI-5.10.1.13), manganese (NI-5.10.1.14), chromium (NI-5.10.1.15), molybdenum (NI-5.10.1.16), boron (NI-5.10.1.17), and cobalt (NI-5.10.1.18).
- Additional terms for documenting Excessive mineral intake of sulfate (NI-5.10.2.9), fluoride (NI-5.10.2.10), copper (NI-5.10.2.11), iodine (NI-5.10.2.12), selenium (NI-5.10.2.13), manganese (NI-5.10.2.14), chromium (NI-5.10.2.15), molybdenum (NI-5.10.2.16), boron (NI-5.10.2.17), and cobalt (NI-5.10.2.18).
- Separate terms for Overweight/Obesity including Overweight, adult or pediatric (NC-3.3.1), Obese, pediatric (NC-3.3.2), and three classes for documenting obesity in adults, Obese, Class I (NC-3.3.3), Obese, Class II (NC-3.3.4), Obese, Class III (NC-3.3.5). Obese, Class III also has an approved synonym of "morbid obesity."
- Inability or lack of desire to manage self-care (NB-2.3) was changed to Inability to manage self-care (NB-2.3). Lack of desire to manage self-care is not a separate nutrition diagnosis, but a possible etiology, which is already listed in the nutrition diagnosis.

The Nutrition Diagnoses in the Energy Balance (NI-1) Class were renumbered (NI-1.1 to NI-1.5) due to unused nutrition diagnoses.

In response to suggestions by food and nutrition professionals, several modifications and terms additions were made:

Suboptimal enteral nutrition (NI-2.3), which is a synonym of Inadequate enteral nutrition (NI-2.3), and Less than optimal enteral nutrition (NI-2.5) are two terms that are not clear without reviewing the definitions. Therefore, clarifying words from the definition were added:

- Less than optimal enteral nutrition (NI-2.5) is relabeled Less than optimal enteral nutrition composition or modality (NI-2.5)
- Less than optimal parenteral nutrition (NI-2.8) is relabeled Less than optimal parenteral nutrition composition or modality (NI-2.8)

In a previous edition of the IDNT, the nutrition diagnoses above were labeled Inappropriate enteral nutrition and Inappropriate parenteral nutrition; however, feedback revealed that the word "inappropriate" was considered too value-laden. This led to a change in the label from "inappropriate" to "less than optimal." Three other nutrition diagnoses that have the "inappropriate" label are also changed in this edition:

- Inappropriate intake of fats (specify) (NI-5.6.3) is relabeled Less than optimal intake of types of fats (NI-5.6.3)

- Inappropriate intake of proteins or amino acids (specify) (NI-5.7.3) is relabeled Less than optimal intake of types of proteins or amino acids (specify) (NI-5.7.3)
- Inappropriate intake of types of carbohydrate (specify) (NI-5.8.3) is relabeled Less than optimal intake of types of carbohydrate (specify) (NI-5.8.3)

While not the intent, certain terms, such as Harmful beliefs and attitudes about food and nutrition-related topics (NB-1.2) and Undesirable food choices (NB-1.7) can seem judgemental. For that reason, the following changes were made:

- Harmful beliefs/attitudes about food or nutrition-related topics (NB-1.2) is relabeled Unsupported beliefs/attitudes about food or nutrition-related topics (NB-1.2). It is believed that this term is less value-laden, and maintains the intent of the term definition.
- Undesirable food choices (NB-1.7) was not relabeled but it now has a synonym of Suboptimal food choices (NB-1.7) that may be used.

Two nutrition diagnoses were carefully considered and added:

- Suboptimal growth rate (NC-3.5)
- Excessive growth rate (NC-3.6)

These diagnoses are available to label nutrition problems related to growth rate. Please refer to the reference sheets for definitions, etiologies and signs/symptoms.

Another change is the addition of the Academy Unique Identifier, a five-digit number following the alpha-numeric term code (e.g., Inadequate oral intake, NI-2.1, 10639).

- The Academy Unique Identifier is an essential element used by information technology (IT) professionals for data monitoring and tracking in electronic health records (EHRs). Food and nutrition professionals use this number to request data needed for reports and quality improvement.
 - The Academy Unique Identifier is associated with a term and never changes. If the term is modified, then the original term and unique identifier are retired. The new term is assigned a new unique identifier.
 - The unique identifiers do not have a structure. Although unique identifiers were initially assigned in sequential order, there is no order for the identifiers, and they do not have meaning or show relationships between terms. This is in contrast to the IDNT alpha-numeric term codes (e.g., NI-2.1), which change as the terminology changes and demonstrate relationships between terms and groups of terms.
- Neither the Academy Unique Identifiers nor the alpha-numeric term codes are recommended in nutrition documentation. Food and nutrition professionals should document only the terms (e.g., Inadequate oral intake).

Approved synonyms for Nutrition Diagnoses are noted on each Reference Sheet. As the publication went to press, additional synonyms were under consideration by experts in the U.S. and internationally. A complete list of synonyms will be available on the web page: www.eatright.org/ncp, see IDNT Reference Manual Related References or the On-line IDNT Reference Manual.

Nutrition Diagnosis Reference Sheet Modifications

Specific changes to the reference sheets within nutrition diagnosis are generally described here and listed by domain. A more detailed document describing the exact wording changes is available on the Academy website (www.eatright.org) in the Nutrition Care Process section.

There are numerous revisions to existing nutrition diagnosis reference sheets, and a few are important to describe. These include:

The Nutrition Diagnosis Reference Sheet content has been refined for improved use for all food and nutrition professionals in the U.S. and internationally. Toward that goal are the following changes:

- Inclusion of the following U.S. and metric measures--fluid volume (ounce [oz]/milliliter [mL]), weight (pound/kilogram [kg]), height (feet and inches/centimeters [cm]), food intake measures (servings/piece, cups/deciliter [dL]/mL, oz/gram [g]/kg, teaspoon [tsp]/tablespoon [tbsp]/mL), food energy (calories/kilocalories [kcal]/kilojoules [kJ]).
- Maintenance of existing laboratory values in the reference sheets with the addition of arrows to provide information on the direction of change. Arrows used with laboratory values are ↑, which represents above reference standard, and ↓, which represents below reference standard.
- Reference standards or resources shall contain a generic description, and when available, a specific standard or resource following in parentheses. Examples are dietary reference intake standard (e.g., Dietary Reference Intakes), national food guideline (e.g., U.S. Dietary Guidelines, MyPlate) and diet quality index standard (e.g., Healthy Eating Index).
- Addition of vitamin and mineral intake units used outside of the U.S. and Canada. As an example, the listing for Vitamin A intake included a recommendation to specify the *form* and amount in $\mu\text{g/day}$. This will now reflect a Vitamin A intake recommendation to specify form, μg (micrograms) or RE (retinol equivalents), and frequency of the intake (e.g., twice per day).
- Clarification of specific words used in the manual. As an example, "nutrition support" is used in the manual without a definition. Therefore, nutrition support will be followed by a definition in parentheses: nutrition support (enteral and parenteral nutrition) in the class definition. Enteral and Parenteral Nutrition (ND-2) are defined as nutrition provided through the gastrointestinal (GI) tract via tube, catheter, or stoma that delivers nutrients distal to the oral cavity (enteral) or the administration of nutrients intravenously (centrally or peripherally) (parenteral).

NI-5.2 Malnutrition

The Academy of Nutrition and Dietetics and the American Society for Parenteral and Enteral Nutrition (ASPEN) continue to work with the U.S. National Center for Health Statistics to revise projected ICD-10 coding terminology to incorporate an etiology-based approach to malnutrition diagnosis (*J Parenter Enteral Nutr.* 2010;34[2]:156-159). Clinical characteristics or indicators of malnutrition determined by this collaboration are included in the nutrition diagnosis Malnutrition (NI-5.2). The Academy's Nutrition Care Manual contains more-specific descriptions of severe and nonsevere malnutrition. Pediatric malnutrition (ages 1-18) has not been defined as part of the Academy and ASPEN collaboration. The process of developing characteristics to diagnose pediatric malnutrition is underway. Therefore, indicators within the nutrition diagnosis were refined based on the documents of the collaboration for adult malnutrition. Future changes are expected, including defined clinical characteristics for pediatric malnutrition, but they are not available for this publication. For additional information, visit the Academy's Web page at: www.eatright.org/coverage.

Breastfeeding Difficulty (NC-1.3)

Practitioners in public health/community nutrition practice worked extensively on a new NCP toolkit for this practice area. During this work, authors identified the need to include an etiology and signs/symptoms related to the impact of other feeding on the ability to sustain infant nutrition through breastfeeding.

No Nutrition Diagnosis At This Time (NO-1.1)

A new reference sheet was added for clarity, electronic health records, and quality improvement purposes so that food and nutrition professionals can clearly document when a nutrition assessment indicates that no nutrition problem currently exists that warrants a nutrition intervention. This concept was included in a previous journal article (3), but a term and reference sheet permit clearer understanding and tracking of its use.

Intake Domain

- Inadequate fluid intake (NI-3.1) includes new signs/symptoms of urine-specific gravity and hyperglycemia in diabetic patient/client(s), tachycardia and normal or hypotensive blood pressure, fever, increased respirations, flattened neck veins, and increased insensible losses, as well as new client history diagnoses associated with the nutrition diagnosis.
- Excessive fluid intake (NI-3.2) received clarification for the sign/symptom plasma osmolality and added the sign/symptom of urine-specific gravity.
- Malnutrition (NI-5.2) indicators or clinical characteristics of adult malnutrition were refined based on the working documents of an Academy/ASPEN collaboration. For additional information visit the Academy's Web page at: www.eatright.org/coverage.
- Inadequate fat intake (NI-5.6.1) includes signs/symptoms related to knowledge and cultural/religious beliefs consistent with etiologies already present.
- Excessive fat intake (NI-5.6.2) includes signs/symptoms related to knowledge and beliefs/attitudes consistent with the etiologies already present. The etiology of physiological causes decreasing total fat needs or recommendations was added.
- Less-than-optimal intake of types of fats (NI-5.6.3) includes a new etiology of physiological causes altering fatty acid needs or recommendations and signs/symptoms related to knowledge and beliefs/attitudes consistent with the etiologies already present.
- Inadequate protein intake (NI-5.7.1) includes a sign/symptom related to knowledge consistent with an etiology already present.
- Excessive protein intake (NI-5.7.2) includes signs/symptoms related to knowledge and beliefs/attitudes consistent with the etiologies already present.
- Inadequate carbohydrate intake (NI-5.8.1) includes a sign/symptom related to knowledge consistent with an etiology already present.
- Excessive carbohydrate intake (NI-5.8.2) includes a sign/symptom related to knowledge consistent with an etiology already present.
- Less-than-optimal intake of types of carbohydrates (specify) (NI-5.8.3) includes a sign/symptom related to cultural/religious beliefs consistent with an etiology already present.
- Inconsistent carbohydrate intake (NI-5.8.4) includes signs/symptoms related to knowledge and cultural/religious beliefs consistent with etiologies already present.
- Inadequate fiber intake (NI-5.8.5) includes a sign/symptom related to knowledge consistent with an etiology already present.
- Excessive fiber intake (NI-5.8.6) includes signs/symptoms related to knowledge and beliefs/attitudes consistent with the etiologies already present.

Clinical Domain

- Breastfeeding difficulty (NC-1.3) includes signs/symptoms for mother and infant related to introduction of feeding via bottle or other route that may affect breastfeeding.
- Impaired nutrient utilization (NC-2.1) provides a clarification of the pituitary hormones included as signs/symptoms.
- Unintended weight loss (NC-3.2) now includes a pediatric weight sign/symptom.
- Unintended weight gain (NC-3.4) includes clarification of weight sign/symptoms for pediatrics and adults.

Behavioral/Environmental Domain

- Food- and nutrition-related knowledge deficit (NB-1.1) has a revised definition with removal of the examples and clarification that No prior education is included in this nutrition diagnosis.
- Unsupported beliefs/attitudes about food or nutrition-related topics (NB-1.2) includes a sign/symptom of Intake of nonfood items consistent with the etiology of pica and the sign/symptom related to intake of complementary and alternative medicine products and dietary supplements that may be harmful to health.
- Self-monitoring deficit (NB-1.4) includes signs/symptoms related to knowledge, cultural/religious beliefs and social support consistent with etiologies already present.
- Limited adherence to nutrition-related recommendations (NB-1.6) contains a new etiology of Lack of confidence in ability to change along with signs/symptoms of this etiology.
- Undesirable food choices (NB-1.7) has a revised definition that provides a generic description of U.S.-based resources and reference standards cited.
- Inability or lack of desire to manage self-care (NB-2.3) was retitled Inability to manage self-care (NB-2.3) as lack of desire was determined to be an existing etiology rather than a separate nutrition diagnosis.
- Self-feeding difficulty (NB-2.6) includes Absence of recommended adaptive eating devices as a new sign/symptom.
- Intake of unsafe food (NB-3.1) includes mislabeled or unlabeled foods and knowledge related signs/symptoms.
- Limited access to food and/or water (NB-3.2) has a revised definition that provides a generic description of U.S.-based resources and reference standards cited.

Nutrition Care Process and Nutrition Diagnosis

Nutrition diagnosis is a critical step between nutrition assessment and nutrition intervention. The nutrition diagnosis is the identification and labeling of the specific nutrition problem that food and nutrition professionals are responsible for treating independently.

Naming the nutrition diagnosis and identifying the etiology, and signs and symptoms provide a way to document the link between nutrition assessment and nutrition intervention and set realistic and measurable expected outcomes for each patient/client. Identifying the nutrition diagnosis also assists practitioners in establishing priorities when planning an individual patient/client's nutrition intervention.

Special Note: The terms **patient(s)/client(s)** are used in association with the NCP; however, the process is also intended for use with groups. In addition, family members or caregivers are an essential asset to the patient/client and food and nutrition professional in the NCP. Therefore, **groups, populations, families, and caregivers** of patients/clients are implied each time a reference is made to patient/client.

In simple terms, a food and nutrition professional identifies and labels a specific nutrition diagnosis (problem) that, in general, he or she is responsible for treating independently (e.g., excessive carbohydrate intake). With nutrition intervention, the nutrition diagnosis ideally resolves. In contrast, a medical diagnosis describes a disease or pathology of organs or body systems (e.g., diabetes). In some instances, such as the nutrition diagnosis Swallowing Difficulty (NC-1.1), food and nutrition professionals label or diagnose the functional problem that has a nutritional consequence. Food and nutrition professionals do not identify medical diagnoses; they diagnose phenomena in the nutrition domain.

Categories of Nutrition Diagnosis Terminology

The nutrition diagnoses/problems have been given labels that are clustered into three domains: Intake, Clinical, and Behavioral-Environmental. Each domain represents unique characteristics that contribute to nutritional health. Within each domain are classes and, in some cases, subclasses of nutrition diagnoses. No nutrition diagnosis at this time (NO-1.1) may be documented if the assessment indicates that no nutrition problem currently exists that warrants a nutrition intervention.

A definition of each follows:

The **Intake** domain lists actual problems related to intake of energy, nutrients, fluids, or bioactive substances through oral diet or nutrition support (enteral or parenteral nutrition).

Note: Whenever possible, nutrient intake data should be considered in combination with clinical, biochemical, anthropometric information, medical diagnosis, clinical status, and/or other factors as well as diet to provide a valid assessment of nutritional status based on a totality of the evidence. (Institute of Medicine. *Dietary Reference Intakes: Applications in Dietary Assessment*. Washington, DC: National Academies Press; 2000.)

Class: Energy Balance (1)—Actual or estimated intake of energy (kcal).

Class: Oral or Nutrition Support Intake (2)—Actual or estimated food and beverage intake from oral diet or nutrition support compared with patient/client's goal.

Class: Fluid Intake (3)—Actual or estimated fluid intake compared with patient/client's goal.

Class: Bioactive Substances Intake (4)—Actual or estimated intake of bioactive substances, including single or multiple functional food components, ingredients, dietary supplements, and alcohol.

Class: Nutrient Intake (5)—Actual or estimated intake of specific nutrient groups or single nutrients as compared with desired levels.

Subclass: Fat and cholesterol (5.6)

Subclass: Protein (5.7)

Subclass: Carbohydrate and fiber (5.8)

Subclass: Vitamin (5.9)

Subclass: Mineral (5.10)

Subclass: Multi-nutrient (5.11)

The **Clinical** domain includes nutritional findings/problems identified as related to medical or physical conditions.

Class: Functional (1)—Change in physical or mechanical functioning that interferes with or prevents desired nutritional consequences.

Class: Biochemical (2)—Change in the capacity to metabolize nutrients as a result of medications, surgery, or as indicated by altered laboratory test values.

Class: Weight (3)—Chronic weight or changed weight status when compared with usual or desired body weight.

The **Behavioral-Environmental** domain includes identified nutritional findings/problems that relate to knowledge; attitudes/beliefs; physical environment; access to food, water, or nutrition-related supplies; and food safety.

Class: Knowledge and Beliefs (1)—Actual knowledge and beliefs as reported, observed, or documented.

Class: Physical Activity and Function (2)—Actual physical activity, self-care, and quality-of-life problems as reported, observed, or documented.

Class: Food Safety and Access (3)—Actual problems with food safety or access to food, water, or nutrition-related supplies.

Examples of nutrition diagnoses and their definitions include the following:

INTAKE DOMAIN • Energy Balance

Inadequate* Energy Intake (NI-1.2) Energy intake that is less than energy expenditure, established reference standards, or recommendations based on physiological needs.

Note: May not be an appropriate nutrition diagnosis when the goal is weight loss, during end-of-life care, upon initiation of EN/PN, or acute stressed state (e.g., surgery, organ failure).

Whenever possible, nutrient intake data should be considered in combination with clinical, biochemical, anthropometric information, medical diagnosis, clinical status, and/or other factors as well as diet to provide a valid assessment of nutritional status based on a totality of the evidence. (Institute of Medicine. Dietary Reference Intakes: Applications in Dietary Assessment. Washington, DC: National Academies Press; 2000.)

Term number (e.g., NI-1.2) used for information. The Academy does not recommend using codes in documentation.

*If a synonym for the term "inadequate" is helpful or needed, an approved alternate is the word "suboptimal." Thus, a food and nutrition professional could use either the nutrition diagnosis label "Suboptimal energy intake" or "Inadequate energy intake."

CLINICAL DOMAIN • Functional

Swallowing difficulty (NC-1.1) Impaired movement of food and liquid from the mouth to the stomach.

BEHAVIORAL-ENVIRONMENTAL DOMAIN • Knowledge and Beliefs

Not ready for diet/lifestyle change (NB-1.3) Lack of perceived value of nutrition-related behavior change compared to costs (consequences or effort required to make changes); conflict with personal value system; preceding event, condition or cause to behavior change.

Term number (e.g., NI-1.2) used for information. The Academy does not recommend using codes in documentation.

The Nutrition Diagnosis Statement (or PES)

The nutrition diagnosis or nutrition problem is summarized into a structured sentence named the nutrition diagnosis statement. This statement, also called a PES statement is composed of three distinct components: the problem (P), the etiology (E), and the signs and symptoms (S). The practitioner obtains the etiology and the signs and symptoms during the nutrition assessment phase of the Nutrition Care Process. The nutrition diagnosis is derived from the synthesis of nutrition assessment data, and the wording is obtained from the nutrition diagnosis reference sheets. If the assessment indicates that no nutrition problem currently exists that warrants a nutrition intervention, practitioners may use the term No nutrition diagnosis at this time (NO-1.1) (3).

The generic format for the nutrition diagnosis statement is problem (P) *related to* etiology (E) *as evidenced by* signs and symptoms (S).

Where:

The Problem or Nutrition Diagnosis Label describes alterations in the patient/client's nutritional status that food and nutrition professionals are responsible for treating independently. A nutrition diagnosis allows the food and nutrition professional to identify realistic and measurable outcomes, formulate nutrition interventions, and monitor and evaluate change. Select from terms on pages 235-362.	The Etiology (Cause/Contributing Risk Factors) are those factors contributing to the existence or maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems. It is linked to the nutrition diagnosis label by the words <i>related to</i>. Identifying the etiology will lead to the selection of a nutrition intervention aimed at resolving the underlying cause of the nutrition problem whenever possible. Usually free text in electronic health records (EHRs), but can also use some terms from pages 235-362.	The Signs/Symptoms (Defining Characteristics) consist of objective (signs) and/or subjective (symptoms) data used to determine whether the patient/client has the nutrition diagnosis specified. It is linked to the etiology by the words <i>as evidenced by</i>. The clear identification of quantifiable data in the signs and symptoms will serve as the basis for monitoring and evaluating nutrition outcomes. Usually free text in EHRs, but can also use some terms from pages 235-362 as long as they are quantified.
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A well-written nutrition diagnostic (PES) statement is:

- Simple, clear, and concise
- Specific to the patient/client or group
- Related to a single patient/client nutrition-related problem
- Accurately related to an etiology
- Based on reliable and accurate nutrition assessment data

Specific questions that food and nutrition professionals should use in evaluating the PES they have developed include the following:

P — Can the nutrition professional resolve or improve the nutrition diagnosis for this individual, group, or population? When all things are equal and there is a choice between stating the PES statement using two nutrition diagnoses from different domains, consider the intake nutrition diagnosis as the one more specific to the role of the RD. E — Evaluate what you have used as your etiology to determine if it is the "root cause" or the most specific root cause that the RD can address with a nutrition intervention. If as an RD you cannot resolve the problem by addressing the etiology, can the RD intervention at least lessen the signs and symptoms? S — Will measuring the signs and symptoms indicate if the problem is resolved or improved? Are the signs and symptoms specific enough that you can monitor (measure/evaluate changes) and document resolution or improvement of the nutrition diagnosis? PES Overall — Does the nutrition assessment data support a particular nutrition diagnosis with a typical etiology and signs and symptoms?

The following are examples of nutrition diagnosis statements (PES):

Nutrition Diagnosis or Problem		Etiology		Signs and/or Symptoms
Excessive Fat Intake	<i>related to</i>	limited access to healthful options—frequent consumption of high-fat fast-food meals	<i>as evidenced by</i>	serum cholesterol level of 230 mg/dL and 10 meals per week of hamburgers/sandwiches and fries
Excessive Energy Intake	<i>related to</i>	unchanged dietary intake and restricted mobility while fracture heals	<i>as evidenced by</i>	5 lb weight gain during last 3 weeks due to consumption of 500 kcal/day more than estimated needs
Inadequate* Oral Intake	<i>related to</i>	lack of GI access	<i>as evidenced by</i>	nothing by mouth (NPO) diet order for 7 days and absence of consistent bowel sounds
Disordered Eating Pattern	<i>related to</i>	unsupported belief about food and nutrition	<i>as evidenced by</i>	reported use of laxatives after meals and statements that calories are not absorbed when laxatives are used
Swallowing Difficulty	<i>related to</i>	poststroke complications	<i>as evidenced by</i>	results of swallowing tests and reports of choking during mealtimes

* If a synonym for the term “inadequate” is helpful or needed, an approved alternate is the word “suboptimal.” Thus, a food and nutrition professional could use either the nutrition diagnosis label “Suboptimal Oral Intake” or “Inadequate Oral Intake.”

The Etiology of the Nutrition Diagnosis

Essential to the understanding of the nutrition problem is the identification of the etiology or cause or contributing risk factor of the problem. The NCP/SL Committee defined the categories of etiologies so practitioners and researchers can better understand the etiology concept and intent. The relationship between the nutrition diagnosis etiology and the nutrition intervention is shown below.

Identifying the etiology leads to the selection of a nutrition intervention aimed at resolving the underlying cause of the nutrition problem whenever possible. If the intervention cannot be aimed at resolving the underlying cause, as is the case in Physiologic-Metabolic Etiologies, then the nutrition intervention is targeted at minimizing the signs/symptoms of the nutrition problem.

Following are the etiology categories and their definitions. Etiologies are grouped by the type of cause or contributing risk factor. In two specific instances, Access and Behavior etiologies, these alone may be the cause or contributing risk factor of the nutrition diagnosis or the practitioner may determine a more specific root cause, e.g., Belief-Attitudes of the problem.

Etiology Category	Definition
Beliefs–Attitudes Etiologies	Cause or contributing risk factors related to the conviction of the truth of some nutrition-related statement or phenomenon; feelings or emotions toward that truth or phenomenon and activities.
Cultural Etiologies	Cause or contributing risk factors related to the patient/client's values, social norms, customs, religious beliefs and/or political systems.
Knowledge Etiologies	Cause or contributing risk factors impacting the level of understanding about food, nutrition and health, or nutrition-related information and guidelines.
Physical Function Etiologies	Cause or contributing risk factors related to physical ability to engage in specific tasks, may be cognitive in nature.
Physiologic–Metabolic Etiologies	Cause or contributing risk factors related to medical/health status that may have a nutritional impact (excludes psychological etiologies—see separate category).
Psychological Etiologies	Cause or contributing risk factors related to a diagnosed or suspected mental health/psychological problem (<i>Diagnostic and Statistical Manual of Mental Disorders, DSM</i>)
Social–Personal Etiologies	Cause or contributing risk factors associated with the patient/client's personal and/or social history.
Treatment Etiologies	Cause or contributing risk factors related to medical or surgical treatment or other therapies and management or care.
Access Etiologies	Cause or contributing risk factors that affect intake and the availability of safe, healthful food, water, and food/nutrition-related supplies. A more specific root cause of Access Etiologies may not be known but may eventually reveal Beliefs-Attitudes, Cultural, Knowledge, Physical Function, Psychological, Social-Personal, or Treatment Etiologies.
Behavior Etiologies	Cause or contributing risk factors related to actions which influence achievement of nutrition-related goals. A more specific root cause of Behavior Etiologies may not be known but may eventually reveal Beliefs-Attitudes, Cultural, Knowledge, Physical Function, Psychological, Social-Personal, or Treatment Etiologies.

The Nutrition Diagnosis Etiology Matrix is a resource that identifies the etiology category to which each etiology in the nutrition diagnoses belong. This resource is available in the online version of the *IDNT Reference Manual* and as a supplemental document on the Academy website (www.eatright.org) in the Nutrition Care Process section.

Nutrition Diagnosis Reference Sheets

A reference sheet is available for each nutrition diagnosis. Reference sheets contain four distinct components: the nutrition diagnosis label, the definition of the nutrition diagnosis label, examples of common etiologies, and signs/symptoms. Following is a description of the four components of the reference sheet.

The problem or nutrition diagnosis label describes alterations in the patient/client's nutritional status that food and nutrition professionals are responsible for treating independently. Nutrition diagnosis differs from medical diagnosis in that a nutrition diagnosis changes as the patient/client response changes. The medical diagnosis does not change as long as the disease or condition exists. A nutrition diagnosis allows the food and nutrition professional to identify realistic and measurable outcomes, formulate nutrition interventions, and monitor and evaluate change.

The definition of the nutrition diagnosis label briefly describes the nutrition diagnosis label to differentiate a discrete problem area.

The etiology (cause/contributing risk factors) includes those factors contributing to the existence or maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environ-

mental problems. It is linked to the nutrition diagnosis label by the words *related to*.

The **signs/symptoms** (defining characteristics) consist of subjective and/or objective data used to determine whether the patient/client has the nutrition diagnosis specified. It is linked to the etiology by the words *as evidenced by*.

The signs and symptoms are gathered in Step 1 of the Nutrition Care Process, nutrition assessment. There are five categories of nutrition assessment data used to cluster the information on the nutrition diagnosis reference sheet: Food/Nutrition-Related History; Biochemical Data, Medical Tests, and Procedures; Anthropometric Measurements; Nutrition-Focused Physical Findings; and Client History. Within each nutrition assessment category, potential indicators associated with the specific nutrition diagnosis are listed on the reference sheet.

Example

Swallowing Difficulty (NC-1.1)

Nutrition Assessment Category	Potential Indicator of this Nutrition Diagnosis
<i>Nutrition-Focused Physical Finding</i>	• Evidence of dehydration, e.g., dry mucous membranes, poor skin turgor

The nutrition diagnosis indicators assist practitioners with consistently and correctly identifying the nutrition diagnoses.

Special Note: Laboratory parameters within the reference sheets are provided only for guidance:

- Laboratory values may vary depending on the laboratory performing the test.
- Scientific consensus does not always exist concerning selection of biochemical tests, laboratory methods, reference standards, or interpretation of data.
- Laboratory findings (normal or abnormal) may be evaluated for their significance or lack of significance depending on the patient/client population, disease severity, and/or treatment goals.
- Current national, institutional, and regulatory guidelines that affect practice should be appropriately applied to individual patients/clients.
- Arrows used with laboratory values: ↑ represents above a reference standard and ↓ represents below a reference standard.

Summary

Nutrition diagnosis is the critical link between nutrition assessment and nutrition intervention in the Nutrition Care Process. Nutrition interventions can then be clearly targeted to address either the etiology (E) or signs and symptoms (S) of the specific nutrition diagnosis/problem identified. Using a standardized terminology for identifying the nutrition diagnosis/problem makes one aspect of the critical thinking of food and nutrition professionals visible to other professionals and provides a clear method of communicating among food and nutrition professionals. Implementation of a standard language throughout the profession, with tools to assist practitioners, is making this language a success. Ongoing study and evaluation is critical as the standardized language is utilized by the profession.

References

1. Charney PJ. *Reliability of Nutrition Diagnostic Codes and Their Defining Characteristics*. [dissertation]. University of Medicine and Dentistry of New Jersey; 2006.
2. American Dietetic Association. *International Dietetics and Nutrition Terminology (IDNT) Reference Manual*, 1st Ed. Chicago, IL: American Dietetic Association; 2008.
3. Writing Group of the Nutrition Care Process/Standardized Language Committee. Nutrition Care Process part II: Using the International Dietetics and Nutrition Terminology to document the Nutrition Care Process. *J Am Diet Assoc*. 2008;108:1287-1293.

NCP Step 3: Nutrition Intervention

What is the purpose of a nutrition intervention? The purpose is to resolve or improve the identified nutrition problem by planning and implementing appropriate nutrition interventions that are tailored to the patient/client's* needs.

How does a food and nutrition professional determine a nutrition intervention? The selection of nutrition interventions is driven by the nutrition diagnosis and its etiology. Nutrition intervention strategies are purposefully selected to change nutritional intake, nutrition-related knowledge or behavior, environmental conditions, or access to supportive care and services. Nutrition intervention goals provide the basis for monitoring progress and measuring outcomes.

How are the nutrition intervention strategies organized? In four categories:

Food and/or Nutrient Delivery	Nutrition Education	Nutrition Counseling	Coordination of Nutrition Care
<i>Individualized approach for food/nutrient provision.</i>	<i>A formal process to instruct or train a patient/client in a skill or to impart knowledge to help patients/clients voluntarily manage or modify food, nutrition and physical activity choices and behavior to maintain or improve health.</i>	<i>A supportive process, characterized by a collaborative counselor-patient relationship, to establish food, nutrition and physical activity priorities, goals, and individualized action plans that acknowledge and foster responsibility for self-care to treat an existing condition and promote health.</i>	<i>Consultation with referral to or coordination of nutrition care with other health care providers, institutions, or agencies that can assist in treating or managing nutrition-related problems.</i>

What does nutrition intervention involve? Nutrition intervention entails two distinct and interrelated components—planning and implementing. Planning the nutrition intervention involves (a) prioritizing nutrition diagnoses, (b) consulting the Academy's Evidence-Based Nutrition Practice Guidelines and other practice guidelines, (c) determining patient-focused expected outcomes for each nutrition diagnosis, (d) conferring with patient/client/caregivers, (e) defining a nutrition intervention plan and strategies, (f) defining time and frequency of care, and (g) identifying resources needed. Implementation is the action phase and involves (a) communication of the nutrition care plan and (b) carrying out the plan.

Critical thinking during this step...

- Setting goals and prioritizing
- Defining the nutrition prescription or basic plan
- Making interdisciplinary connections
- Initiating behavioral and other nutrition interventions
- Matching nutrition intervention strategies with patient/client's needs, nutrition diagnosis, and values
- Choosing from among alternatives to determine a course of action
- Specifying the time and frequency of care

Are food and nutrition professionals limited to the defined nutrition intervention terms? Nutrition intervention terminology includes commonly used strategies and emphasizes the application of evidence-based strategies matched to appropriate circumstances. Evaluation of the nutrition intervention terminology is ongoing and will guide future modifications. Food and nutrition professionals can propose additions or revisions using the Procedure for Nutrition Controlled Vocabulary/Terminology Maintenance/Review available from the Academy.

*Patient/client refers to individuals, groups, populations, family members, and/or caregivers.

Nutrition Care Process Step 3: Nutrition Intervention

Introduction

Nutrition intervention is the third step in the Nutrition Care Process, preceded by nutrition assessment and nutrition diagnosis. Nutrition intervention is defined as purposefully planned actions intended to positively change a nutrition-related behavior, environmental condition, or aspect of health status for an individual (and his or her family or caregivers), target group, or the community at large. A food and nutrition professional works in conjunction with the patient/client(s) and other health care providers, programs, or agencies during the nutrition intervention phase.

Special Note: The terms patient(s)/client(s) are used in association with the NCP; however, the process is also intended for use with groups. In addition, family members or caregivers are an essential asset to the patient/client and food and nutrition professional in the NCP. Therefore, groups, populations, families, and caregivers of patients/clients are implied each time a reference is made to patient/client.

While nutrition intervention is one step in the Nutrition Care Process, it consists of two interrelated components—planning and implementation. Planning involves prioritizing the nutrition diagnoses, conferring with the patient/client and others, reviewing practice guides and policies, and setting goals and defining the specific nutrition intervention strategy. Implementation of the nutrition intervention is the action phase that includes carrying out and communicating the plan of care, continuing data collection, and revising the nutrition intervention strategy, as warranted, based on the patient/client response.

When drafting the specific nutrition intervention terms, the Nutrition Care Process/Standardized Language (NCP/SL) Committee strived to include information necessary for medical record documentation, billing, and research. These terms intentionally distinguish between two distinct nutrition interventions: nutrition education and nutrition counseling. However, the patient/client care plan can include more than one nutrition intervention that may be implemented simultaneously during the actual interaction with the patient/client.

The nutrition intervention terminology is organized into four domains: Food and/or Nutrient Delivery, Nutrition Education, Nutrition Counseling, and Coordination of Nutrition Care. Each domain defines classes of nutrition interventions. Reference sheets for each term define the nutrition intervention, list typical details of the nutrition intervention, and illustrate the potential connection to the nutrition diagnoses.

The nature of a single nutrition intervention encounter with a patient/client can be described in many ways. It could include face-to-face contact with the patient/client or an encounter via e-mail or telephone. The encounter may involve an individual or group and may be described in varying increments of contact time. Throughout the course of nutrition care, the food and nutrition professional and patient/client might engage in several encounters (e.g., interactions, visits, contacts) aimed at helping the patient/client implement the nutrition intervention(s). Nutrition interventions in the Food and/or Nutrient Delivery domain and Coordination of Nutrition Care domain may occur without direct patient/client contact (e.g., change in enteral formula).

At all levels of practice, food and nutrition professionals are competent in providing many types of nutrition interventions. However, food and nutrition professionals' roles and responsibilities vary with experience, education, training, practice setting, employer expectations, and local standards of care. Responsible food and nutrition professionals ensure that they are competent to practice by participating in continuing education activities and obtaining necessary education, training, and credentials related to their area of practice. The Scope of Practice documents (available at www.eatright.org/scope) provide guidance to the food and nutrition professional in identifying activities within the Scope of Practice as well as demonstrated competencies that enhance individual Scope of Practice. The Academy/Commission on Dietetic Registration Code of Ethics assists the practitioner with understanding the responsibilities to the public, clients, and the profession. Several Academy Dietetic Practice Groups for food and nutrition professionals also have documents that help identify appropriate roles and responsibilities.

Individualized nutrition interventions based on a patient/client's needs identified through nutrition assessment and nutrition diagnosis are the product of this step of the Nutrition Care Process. Using a standardized terminology for describing the nutrition interventions extends the ability of the food and nutrition professional to document, communicate, and research the impact of nutrition care on health and disease.

What Is New in This Edition Related to Nutrition Intervention?

This edition includes revisions to the standardized language for nutrition intervention. Of significance is the improved alignment between the Nutrition Intervention Terminology List and all of the Nutrition Intervention Reference Sheets. In previous editions of the IDNT, it was difficult to clearly identify the individual nutrition intervention terms on the reference sheets. Revisions now make the terms and their criteria more clear. Additionally, each nutrition intervention contains the statement that food and nutrition professionals recommend, implement, or order nutrition interventions and the action(s) may initiate, modify or discontinue the nutrition intervention(s). Food and nutrition professionals are encouraged to clearly identify in documentation the nature of the nutrition intervention.

Additionally, as a result of the work toward including the specific terms into standardized informatics languages and language systems, new terms have been added or terms have been separated within the terminology lists. Changes to Nutrition Intervention include:

- Separation of Modify distribution of, type, or amount of food and nutrients within meals or at specified time (ND-1.2) to Composition of meals/snacks (ND-1.2) with addition of ten types of diets from the Academy diet order taxonomy project *and* Schedule of food/fluids (ND-1.3).
- Addition of six new terms for Enteral nutrition (ND-2.1): composition (ND-2.1.1), concentration (ND-2.1.2), rate (ND-2.1.3), volume (ND-2.1.4), schedule (ND-2.1.5), and route (ND-2.1.6).
- Addition of five new terms for Parenteral nutrition/IV fluids (ND-2.2): composition (ND-2.2.1), concentration (ND-2.2.2), rate (ND-2.2.3), schedule (ND-2.2.4), and route (ND-2.2.5).
- Addition of terms for documenting vitamin supplement of pantothenic acid (ND-3.2.3.12) and biotin (ND-3.2.3.13)
- Addition of terms for documenting mineral supplement of sulfate (ND-3.2.4.9), fluoride (ND-3.2.4.10), copper (ND-3.2.4.11), iodine (ND-3.2.4.12), selenium (ND-3.2.4.13), manganese (ND-3.2.4.14), chromium (ND-3.2.4.15), molybdenum (ND-3.2.4.16), boron (ND-3.2.4.17), cobalt (ND-3.2.4.18)
- Separate terms for documenting intake of the bioactive substances plant stanol esters (ND-3.3.1), plant sterol esters (ND-3.3.2), psyllium (ND-3.3.4), β glucan (ND-3.3.5), alcohol (ND-3.3.7) and caffeine (ND-3.3.8)
- Separation of Prescription medications (ND-6.1) and OTC medications (ND-6.2).
- Revision of Herbal/complementary products, specify to Complementary/alternative medicine (ND-6.3).
- Revision of terms for the Coordination of Nutrition Care Domain, namely, separation of referral and collaboration.

Other changes include:

- Addition of Menu selection assistance (ND-4.5) to Feeding assistance (ND-4)
- Addition of Meal service (ND-5.7) and Meal location (ND-5.8) to Feeding environment (ND-5)
- Addition to the Nutrition Prescription reference sheet of an alpha-numeric code of (NP-1.1) for tracking and quality improvement purposes. The Committee reviewed and removed the word "individualized" from the definition of nutrition prescription after authors of the Public Health/Community Nutrition NCP Toolkit raised a concern that this word made it appear that a nutrition prescription only applied to individuals. As a reminder, although patient/client is used throughout the NCP and IDNT, the term patient/client applies to individuals, groups, populations, family members, and/or caregivers.
- Addition of the Academy Unique Identifier, a five-digit number following the alpha-numeric term code (e.g., General, healthful diet, ND-1.1 10489).

- The Academy Unique Identifier is an essential element used by information technology (IT) professionals for data monitoring and tracking in electronic health records (EHRs). Food and nutrition professionals use this number to request data needed for reports and quality improvement.
 - The Academy Unique Identifier is associated with a term and never changes. If the term is modified, then the original term and unique identifier are retired. The new term is assigned a new unique identifier.
 - The unique identifiers do not have a structure. Although unique identifiers were initially assigned in sequential order, there is no order for the identifiers, and they do not have meaning or show relationships between terms. This is in contrast to the IDNT alpha-numeric term codes (e.g., ND-1.1), which change as the terminology changes and demonstrate relationships between terms and groups of terms.
- Neither the Academy Unique Identifiers nor the alpha-numeric term codes are recommended in nutrition documentation. Food and nutrition professionals should document only the terms (e.g., General, healthful diet).

Nutrition Intervention Reference Sheet Modifications

Specific changes to the reference sheets within nutrition intervention are generally described here. A more detailed document describing the exact wording changes is available on the Academy website (www.eatright.org) in the Nutrition Care Process section.

Food and/or Nutrient Delivery Domain

- Meals and snacks (ND-1) has a revised definition to indicate that meals are eating episodes that may include a variety of foods, such as grains and/or starches, meat and/or meat alternatives, fruits and vegetables, and milk or milk products. The definition of a snack is unchanged. The terms have been changed and categories of diets were added.
- Enteral nutrition (ND-2.1) terms were revised to separate the specific concepts within this intervention.
- Parenteral nutrition/IV fluids (ND-2.2) terms were revised to separate the specific concepts within this intervention.
- Medical food supplements (ND-3.1) clarifies that “commercial beverages and foods” refers to prepackaged products whereas “modified beverages and foods” refers to beverages and foods that are prepared.
- Feeding assistance (ND-4) terms were revised to separate the specific concepts within this intervention.
- Feeding environment (ND-5) terms were revised to separate the specific concepts within this intervention.
- Nutrition-related medication management (ND-6) terms were revised to separate prescription, OTC and complementary/alternative medicine products.

Nutrition Education Domain

- The Nutrition Education (E) domain definition was revised to clarify that food, nutrition and physical activity are included in this nutrition intervention.

Nutrition Counseling Domain

- The Nutrition Counseling (C) domain definition was revised to clarify that food, nutrition and physical activity are included in this nutrition intervention.

Nutrition Intervention Components

Planning and implementation are the two components of nutrition intervention. These components are interrelated, and the food and nutrition professional will make decisions about the nutrition intervention when both planning and implementation are feasible.

Planning the Nutrition Intervention

As a food and nutrition professional plans the nutrition intervention, he or she prioritizes the nutrition diagnoses based on the severity of the problem, safety, patient/client need, the likelihood that the nutrition intervention will impact the problem, and the patient/client perception of importance.

To determine which nutrition diagnosis can be positively affected, a food and nutrition professional needs to examine the relationship between each aspect of the nutrition diagnosis and the nutrition intervention. It has been previously established that the nutrition diagnosis states the problem, etiology, and the signs and symptoms based on data from the nutrition assessment.

The nutrition intervention is directed whenever possible at the etiology or cause of the problem identified in the PES (i.e., problem, etiology, and signs/symptoms) statement. In some cases, it is not possible to direct the nutrition intervention at the etiology because the etiology cannot be changed by a food and nutrition professional. For example, if Excessive energy intake (NI-1.5) is caused by depression, the nutrition intervention aims to reduce the impact of the signs and symptoms of the problem, e.g., weight gain due to energy intake more than estimated needs.

Note: Whenever possible, food and nutrition professionals direct the nutrition intervention at the etiology of the problem. In some cases, practitioners may need to direct the nutrition intervention at the signs and symptoms because the etiology can not be changed by the food and nutrition professional.

The *IDNT Reference Manual* defines the categories of etiologies so that practitioners and researchers can better understand the etiology concept and intent. Identifying the etiology leads to the selection of a nutrition intervention that aims to resolve the underlying cause of the nutrition problem whenever possible. Please refer to the Nutrition Diagnosis chapter for more information.

Follow-up monitoring of the signs and symptoms is used to determine the impact of the nutrition intervention on the etiology of the problem.

To choose the most appropriate nutrition intervention, the food and nutrition professional uses evidence-based guidelines, institutional policies and procedures, care maps, and other resources for recommended nutrition interventions to reach medical nutrition therapy goals, desired behavior changes, and/or expected outcomes. The Academy's Evidence-Based Nutrition Practice Guidelines provide evidence-based recommendations for nutrition interventions. Food and nutrition professionals should carefully examine resources to determine whether the recommendations are evidence-based.

Nutrition Prescription (NP-1.1)

An essential part of planning the nutrition intervention is the nutrition prescription. The nutrition prescription concisely states the patient/client's recommended dietary intake of energy and/or selected foods or nutrients based on current reference standards and dietary guidelines and the patient/client's health condition and nutrition diagnosis. It is determined using the assessment data; the nutrition diagnosis (PES) statement; current evidence, policies and procedures; and patient/client values and preferences. The nutrition prescription either drives the nutrition intervention selection or is the context within which the nutrition intervention should be implemented. With the nutrition prescription defined, the food and nutrition professional identifies the specific nutrition intervention strategies and establishes the patient/client-focused goals to be accomplished. A reference sheet defining a nutrition prescription and its components is included with the nutrition intervention reference sheets.

The Nutrition Prescription (NP-1.1) concisely states the patient/client's recommended dietary intake of energy and/or selected foods or nutrients based on current reference standards and dietary guidelines and the patient/client's health condition and nutrition diagnosis. A nutrition prescription reference sheet is included with the Nutrition Intervention reference sheets.

Goal Setting

Goal setting establishes patient/client goals that are clear, measurable, achievable, and time-defined. It is most desirable to set goals jointly with the patient/client; however, this is not always possible, such as in the case of some patients/clients receiving enteral or parenteral nutrition. In goal setting, the individuals responsible for the associated actions to achieve the goals are clearly identified.

These steps are essential because it is impossible to assess the impact of the nutrition intervention without quantifying or qualifying the goals so that they can be measured. If the goals are not achievable, even the most appropriate nutrition intervention could be judged as unsuccessful. Additionally, the time for achieving the individual goals should be delineated into short-term (next visit) and long-term goals (over the course of the nutrition intervention).

Goal-setting documentation should identify the parties responsible for establishing the goals and the associated actions—such as joint development with patient/client and/or family or provider-directed (e.g., patient/client unable to participate in interaction and family/other not available).

Planning Summary

- Prioritize the nutrition diagnoses, based on problem severity, safety, patient/client need, likelihood that the nutrition intervention will impact the problem, and patient/client perception of importance.
- Consult the Academy's Evidence-Based Nutrition Practice Guidelines and other evidence-based practice guidelines/policies.
- Confer with patient/client and other caregivers, or refer to policies throughout the planning step.
- Detail the nutrition prescription and identify the specific nutrition intervention strategies.
- Determine patient/client-focused goals/expected outcomes.
- Define time and frequency of care.

Implementing the Nutrition Intervention

Implementation is the action portion of the nutrition intervention, in which food and nutrition professionals carry out and communicate the plan of care to all relevant parties, continue the data collection that was initiated with the nutrition assessment, and revise the nutrition intervention based on the patient/client response.

Once a food and nutrition professional has verified that the nutrition intervention is occurring, the data collected will also provide evidence of the response(s) and potentially lead to revision of the nutrition intervention.

Implementation Summary

- Action phase:
 - Communicate the plan of care.
 - Carry out the plan.
 - Continue data collection.
- Other aspects:
 - Individualize the nutrition intervention.
 - Collaborate with other colleagues.
 - Follow-up and verify that nutrition intervention is occurring.
 - Adjust intervention strategies, if needed, as response occurs.

Nutrition Intervention Terms

The NCP/SL Committee identified four domains of nutrition interventions—Food and/or Nutrient Delivery, Nutrition Education, Nutrition Counseling, and Coordination of Nutrition Care—and defined classes within them. These domains and classes are intended to be used by all food and nutrition professionals in all nutrition intervention settings (e.g., community, public health, home care, long-term care, private practice, and pediatric and adult acute care). Currently, the nutrition intervention terms are being tested for usability and validity in clinical settings. The specific nutrition intervention domains and classes are as follows:

Food and/or Nutrient Delivery (ND) refers to an individualized approach for food/nutrient provision.

Meal and Snacks (ND-1)—meals are regular eating episodes that may include a variety of foods consisting of grains and/or starches, meat and/or meat alternatives, fruits and vegetables, and milk or milk products. A snack is food served between regular meals.

Enteral and Parenteral Nutrition (ND-2)—nutrition provided through the gastrointestinal (GI) tract via tube, catheter, or stoma that delivers nutrients distal to the oral cavity (enteral) or the administration of nutrients intravenously (centrally or peripherally) (parenteral).

Enteral nutrition (ND-2.1)—nutrition provided through the GI tract via tube, catheter, or stoma that delivers nutrients distal to the oral cavity.

Parenteral nutrition/IV fluids (ND-2.2)—intravenous administration of nutrients and fluids. Delivery may be central (delivered into a large-diameter vein, usually the superior vena cava adjacent to the right atrium) or peripheral (delivered into a peripheral vein, usually of the hand or forearm).

Supplements (ND-3)—foods or nutrients that are not intended as a sole (only) item or a meal or diet, but that are intended to provide additional nutrients.

Medical food supplement (ND-3.1)—commercial or prepared foods or beverages intended to supplement the nutrient intake in energy, protein, carbohydrate, fiber, and/or fat, which may also contribute to vitamin and mineral intake.

Vitamin and mineral supplement (ND-3.2)—a product that is intended to supplement vitamin or mineral intake.

Bioactive substance management (ND-3.3)—addition or change in provision of bioactive substances (e.g., plant stanol and sterol esters, psyllium, food additives, other bioactive substances).

Feeding Assistance (ND-4)—accommodation or assistance designed to restore the patient/client's ability to eat independently, support adequate nutrient intake, and reduce the incidence of unplanned weight loss and dehydration.

Feeding Environment (ND-5)—adjustment of the physical environment, temperature, convenience, and attractiveness of the location where food is served that impacts food consumption.

Nutrition-Related Medication Management (ND-6)—modification of a drug or nutrition-related complementary/alternative medicine to optimize patient/client nutritional or health status.

Nutrition Education (E) is a formal process to instruct or train a patient/client in a skill or to impart knowledge to help patients/clients voluntarily manage or modify food, nutrition and physical activity choices and behavior to maintain or improve health.

Nutrition Education-Content (E-1)—instruction or training intended to lead to nutrition-related knowledge.

Nutrition Education-Application (E-2)—instruction or training intended to lead to nutrition-related result interpretation and/or skills.

Nutrition Counseling (C) is a supportive process, characterized by a collaborative relationship between the counselor and the patient/client to establish food, nutrition and physical activity priorities, goals, and action plans that acknowledge and foster responsibility for self-care to treat an existing condition and promote health.

Theoretical Basis/Approach (C-1)—the theories or models used to design and implement an intervention. Theories and theoretical models consist of principles, constructs, and variables, which offer systematic explanations of the human behavior change process. Behavior change theories and models provide a research-based rationale for designing and tailoring nutrition interventions to achieve the desired effect. A theoretical framework for curriculum and treatment protocols, it guides determination of (a) what information patients/clients need at different points in the behavior change process, (b) what tools and strategies may be best applied to facilitate behavior change, and (c) outcome measures to assess effectiveness in interventions or components of interventions.

Strategies (C-2)—An evidence-based method or plan of action designed to achieve a particular goal. Application of behavior change theories in nutrition practice has provided practitioners with a collection of evidence-based strategies to promote behavior change. Some strategies target change in motivation and intention to change, and others target behavior change. Food and nutrition professionals selectively apply strategies based on patient/client goals and objectives, as well as their personal counseling philosophy and skill.

Food and nutrition professionals engaging in nutrition counseling are asked to indicate for each encounter both the theoretical basis or approach they are using (multiple approaches may be used) as well as the strategy or strategies they are using within a particular encounter.

Coordination of Nutrition Care (RC) is consultation with, referral to, or coordination of nutrition care with other health care providers, institutions, or agencies that can assist in treating or managing nutrition-related problems.

Collaboration and Referral of Care During Nutrition Care (RC-1)—facilitating services or interventions with other professionals, institutions, or agencies on behalf of the patient/client prior to discharge from nutrition care.

Discharge and Transfer of Nutrition Care to New Setting or Provider (RC-2)—discharge planning and transfer of nutrition care from one level or location of care to another.

Term number (e.g., ND-2.2) used for information. The Academy does not recommend using codes in documentation.

Nutrition Education Versus Nutrition Counseling

As mentioned earlier, nutrition education has been intentionally separated from nutrition counseling even though a food and nutrition professional may use both of these nutrition interventions during a single encounter.

More than one type of intervention (e.g., nutrition education and nutrition counseling) may be applied within a single encounter or in sequential encounters. The appropriate nutrition intervention domain(s) and class(es) are selected based on the nutrition assessment, nutrition diagnosis, and patient/client needs and interests, and are reported on the care plan. For example, the food and nutrition professional could refer the client to a nutrition education class to address knowledge barriers and spend individual counseling time exploring ambivalence to change (motivational interviewing) and food/nutrition access issues. Group classes are frequently designed to impart knowledge and are therefore nutrition education. These may include didactic classes, supermarket tours, and/or cooking demonstrations. Nutrition counseling may address a variety of etiologies such as beliefs and attitudes, behavior, and access to healthful food. Nutrition counseling is a process characterized as an interpersonal helping relationship that begins by exploring the way the patient/client thinks and feels as well as his or her current dietary habits, for the purpose of facilitating dietary change.

During the nutrition encounter, the following attitudinal, knowledge, and personal-social barriers to change (etiologies) may be identified: lack of motivation, lack of knowledge, and/or lack of financial resources. When knowledge-related etiologies are addressed via knowledge transfer within a counseling session, nutrition education is the intervention applied. The food and nutrition professional uses different nutrition intervention techniques to address barriers identified. These may include the following:

- Nutrition Counseling (C-1 or C-2) using the motivational interviewing strategy to address lack of motivation, and development of an action plan to facilitate a patient/client link with community/government food/nutrition resources.
- Nutrition Education (E-1 or E-2) in a group or individual setting to address knowledge deficits related to disease/condition, interpreting laboratory test results, self-management parameters, selection of healthful foods/meals, and food preparation and cooking.

Nutrition counseling and education interventions are separated to highlight the differences between them and show the true nature of the interaction(s) between food and nutrition professional and patient/client. This will assist a practitioner in thinking about providing distinct education and counseling approaches, while moving seamlessly between these two activities.

Uses of Nutrition Interventions Based on Practice Setting

The typical uses of nutrition interventions may vary by practice setting, but they are not limited by the practice setting. The following are some typical uses:

- Food and/or Nutrient Delivery nutrition interventions will commonly be used by food and nutrition professionals in institutional settings (e.g., hospitals, long-term care) and home care.
- Nutrition Education-Content (E-1) interventions may be utilized more often in institutionalized settings, and Nutrition Education-Application (E-2) interventions may be utilized more often in outpatient/noninstitutionalized settings (e.g., outpatient offices, private practice, community).
- Nutrition Counseling will likely be used more by food and nutrition professionals in outpatient/noninstitutionalized settings (e.g., outpatient offices, private practice, community) due to the nature of the nutrition intervention and the practice setting.
- Coordination of Nutrition Care interventions will be used by food and nutrition professionals in a variety of practice settings.

It is important to reiterate that these are typical uses of specific nutrition interventions. Food and nutrition professionals in any practice setting can use the complete array of nutrition interventions as appropriate and necessary.

Nutrition Intervention Reference Sheets

A reference sheet for each nutrition intervention has been developed. It includes the nutrition intervention label and its definition, descriptive details of the nutrition intervention, and the nutrition diagnoses with which the nutrition intervention might typically be used. Additional considerations pertinent to the nutrition intervention are also included. The following is a partial example of a nutrition intervention reference sheet:

Example

Feeding Assistance (ND-4)

Defined as accommodation or assistance designed to restore the patient/client's ability to eat independently, support adequate nutrient intake, and reduce the incidence of unplanned weight loss and dehydration.

Details of Nutrition Intervention: A typical intervention might be further described with the following details. Food and nutrition professionals recommend, implement, or order nutrition interventions and the action(s) may initiate, modify or discontinue the nutrition intervention(s):

- Adaptive eating devices (equipment or utensils) (e.g., specify)
- Feeding position (e.g., specify patient/client position in relationship to eating or degree angle for enteral feeding)
- Meal set-up (e.g., specify actions to make food accessible for consumption)
- Mouth care (e.g., specify treatment to promote oral health and hygiene)
- Menu selection assistance (yes/no)
- Other (specify)

These reference sheets are designed to assist food and nutrition professionals with consistent and correct utilization of the nutrition interventions and are available in this manual.

Encounter Details

A single nutrition intervention encounter (i.e., interactions, visits, contacts, sessions) includes time spent reviewing the medical record or patient/client information, time spent interacting with other health care professionals involved in patient/client care, and direct (i.e., face-to-face) or indirect (e.g., electronic, phone) contact with the patient/client and his or her family or caregiver. With the expanded use of electronic communication has come the growth of nutrition interventions via methods like e-mail and Webinars (seminars on the Internet), along with phone and teleconference encounters.

Encounters may involve an individual or group. These terms are defined as follows:

- An *individual* is one person with his or her family or caregiver.
- A *group* is intended to meet more than one individual's needs.

A typical method to indicate contact time in ambulatory care is in increments of 15 minutes (one unit = 15 minutes). Of course, throughout a course of nutrition care, the food and nutrition professional and patient/client might engage in several encounters.

Roles and Responsibilities

Nutrition and dietetics practice is such that practitioners differ in their need, desire, opportunity, experience, or credentials to perform various nutrition interventions. The Competent level practitioner is an advanced beginner who starts technical training and interaction for advancement and breadth of competence. The Competent practitioner may find his/her practice includes responsibilities across several focus areas including community, clinical, consultation and business, research, education, and food and nutrition systems management while the Proficient level practitioner will demonstrate additional knowledge, skills and experience in the focus area of nutrition and dietetics practice and may attain a specialist credential. Some nutrition interventions described in the reference sheets (e.g., nutrition counseling, enteral and parenteral nutrition, or nutrition-related medication management) may require specialist or advanced education and/or training to achieve Proficient and Expert levels of practice.

Practice roles and responsibilities may vary according to employer expectations or organization tradition. Disease-specific nutrition protocols and condition-specific nutrition protocols may be used to allow interventions to be implemented or modified. Clinical privileges allow the individual RD who has demonstrated competency to autonomously intervene according to an enhanced scope of practice. Obtaining clinical privileges or being granted authority to make independent changes to a patient/client's nutrition prescription or nutrition intervention may be needed. In some situations, such as an RD in private business practice or community settings, he/she may have complete autonomy. Further, depending on the setting, the food and nutrition professional may assume various levels of autonomy for different nutrition interventions. Examples include the following:

- *Implements the specified nutrition intervention; recommends initiating, modifying, or discontinuing a nutrition intervention as appropriate.* Upon completion of a nutrition assessment, the food and nutrition professional may recommend (verbally or by writing) refinements, modifications, or alternative nutrition interventions that require affirmation before they can be implemented.

Example: The food and nutrition professional assesses a patient/client on a general diet and notices elevated serum cholesterol and triglyceride levels. The food and nutrition professional recommends a modification of the nutrition prescription to the physician, physician's assistant, or nurse practitioner, and modifies the nutrition prescription upon affirmation of the recommendation.

- *Implements, within the parameters of an approved protocol or algorithm, the initiation, modification, or discontinuance of a nutrition intervention.* Upon completion of a nutrition assessment, the food and nutrition professional modifies the original nutrition intervention within preapproved parameters.

Example: The food and nutrition professional assesses a patient/client with a general nutrition prescription and notices elevated serum cholesterol, triglyceride, and blood glucose levels. According to an approved treatment algorithm, the food and nutrition professional can implement a "heart healthy" nutrition prescription for any patient/client with a serum cholesterol level greater than 200 mg/dL. The food and nutrition professional changes the nutrition prescription to "heart healthy," initiates patient/client nutrition education, and documents the change and other details of the nutrition intervention in the medical record. Because the algorithm does not specify the nutrition intervention for hyperglycemia, the food and nutrition professional must provide (verbally or in writing) recommendations for an additional carbohydrate restriction or management in the nutrition prescription, then await affirmation before implementation.

- *Independently orders the initiation, modification, or discontinuance of a nutrition intervention based on an enhanced individual scope of practice.* Authority may be specified in an approved clinical privileging document or inherent in the setting. Upon completion of the nutrition assessment, the food and nutrition professional is able to initiate, modify, or discontinue a nutrition intervention based on independent clinical judgment.

Example: The food and nutrition professional assesses a patient/client with a general nutrition prescription and notices elevated serum cholesterol, triglyceride levels, and blood glucose levels. In this setting, a food and nutrition professional has the autonomy to order, change, and implement nutrition prescriptions designed to manage disorders of lipid, carbohydrate, protein, and energy metabolism. The food and nutrition professional changes the nutrition prescription to "heart healthy" with consistent carbohydrate intake and initiates patient/client nutrition education and other details of the nutrition intervention as appropriate.

The table provides examples of the typical level of autonomy of food and nutrition professionals in a few practice settings:

Setting	Typical Triggers	Typical Levels of Autonomy
Inpatient	Physician, physician's assistant, or advanced practice nurse orders a diet or requests a consultation, or the patient is identified at risk by screening criteria.	• Implements the specified nutrition intervention; recommends initiating, modifying, or discontinuing a nutrition intervention. • Within the parameters of an approved protocol or algorithm, implements the initiation, modification, or discontinuance of a nutrition intervention. • Independently orders initiation, modification, or discontinuance of a nutrition intervention based on an enhanced individual scope of practice. Authority is usually specified in an approved clinical privileging document.

Outpatient	Physician, physician's assistant, or advanced practice nurse refers the patient/client, or the patient/client is self-referred .	• Implements the specified nutrition intervention; recommends initiating, modifying, or discontinuing a nutrition intervention. • Within the parameters of an approved protocol or algorithm, implements the initiation, modification, or discontinuance of a nutrition intervention. • Independently orders initiation, modification, or discontinuance of a nutrition intervention based on an enhanced individual scope of practice. Authority may be specified in an approved clinical privileging document or inherent in practice setting.
Private Practice	Physician, physician's assistant, or advanced practice nurse refers the patient/client, or the patient/client is self-referred .	• Independently orders initiation, modification, or discontinuance of a nutrition intervention based on an enhanced individual scope of practice.
Community	Patient/client is self-referred or is identified to be at-risk by screening criteria.	• Independently orders initiation, modification, or discontinuance of a nutrition intervention based on an enhanced individual scope of practice.

As mentioned earlier, the Scope of Practice documents provide guidance to the food and nutrition professional in identifying activities within the Scope of Practice as well as demonstrated competencies that enhance individual Scope of Practice. All Scope of Practice documents are available on the Academy website (www.eatright.org/scope). RDs and DTRs should refer to these documents for guidance in identifying if an activity, role, and responsibility is within their Scope of Practice.

Summary

Using defined nutrition intervention terminology assists the profession in communicating within the profession and also among a variety of other health care providers. It is also instrumental in documenting and researching the impact the profession has on specific diagnoses and/or etiologies in all patient/client populations. The nutrition intervention reference sheets are a tool that food and nutrition professionals can use to select strategies and implement this aspect of the Nutrition Care Process. Finally, evaluation of the nutrition intervention terminology is ongoing and will guide possible future modifications.

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NCP Step 4: Nutrition Monitoring and Evaluation

What is the purpose of nutrition monitoring and evaluation? The purpose is to determine the amount of progress made and whether goals/expected outcomes are being met. Nutrition monitoring and evaluation identifies patient/client* outcomes relevant to the nutrition diagnosis and intervention plans and goals. Nutrition care outcomes—the desired results of nutrition care—are defined in this step. The change in specific nutrition care indicators between assessment and reassessment can be measured and compared to the patient/client's previous status, nutrition intervention goals, or reference standards. The aim is to promote more uniformity within the dietetics profession in assessing the effectiveness of nutrition intervention.

How does a food and nutrition professional determine what to measure for nutrition monitoring and evaluation? Practitioners select nutrition care indicators that will reflect a change as a result of nutrition care. In addition, food and nutrition professionals will consider factors such as the nutrition diagnosis and its etiology and signs or symptoms, the nutrition intervention, medical diagnosis, health care outcome goals, quality management goals for nutrition, practice setting, patient/client population, and disease state and/or severity.

How are outcomes used in nutrition monitoring and evaluation organized? In four categories**:

Food/Nutrition-Related History Outcomes	Anthropometric Measurement Outcomes	Biochemical Data, Medical Tests, and Procedure Outcomes	Nutrition-Focused Physical Finding Outcomes
Food and nutrient intake, food and nutrient administration, medication/herbal supplement use, knowledge/beliefs, food and supplies availability, physical activity, nutrition quality of life	Height, weight, body mass index (BMI), growth pattern, indices/percentile ranks, and weight history	Lab data (e.g., electrolytes, glucose) and tests (e.g., gastric emptying time, resting metabolic rate)	Physical appearance, muscle and fat wasting, swallow function, appetite, and affect

What does nutrition monitoring and evaluation involve? Practitioners do three things as part of nutrition monitoring and evaluation—monitor, measure, and evaluate the changes in nutrition care indicators—to determine patient/client progress. Practitioners monitor by providing evidence that the nutrition intervention is or is not changing the patient/client's behavior or status. They measure outcomes by collecting data on the appropriate nutrition outcome indicator(s). Finally, food and nutrition professionals compare the current findings with previous status, nutrition intervention goals, and/or reference standards (i.e., criteria) and evaluate the overall impact of the nutrition intervention on the patient/client's health outcomes. The use of standardized indicators and criteria increases the validity and reliability in how outcome data are collected. All these procedures facilitate electronic charting, coding, and outcomes measurement.

Critical thinking during this step...

- Selecting appropriate indicators/measures
- Using appropriate reference standards for comparison
- Defining where patient/client is in terms of expected outcomes
- Explaining a variance from expected outcomes
- Determining factors that help or hinder progress
- Deciding between discharge and continuation of nutrition care

Are food and nutrition professionals limited to the nutrition monitoring and evaluation outcomes terms? A cascade of outcomes of nutrition care have been identified; each outcome has several possible indicators that can be measured depending on the patient/client population, practice setting, and disease state/severity. Food and nutrition professionals can propose additions or revisions using the Procedure for Nutrition Controlled Vocabulary/Terminology Maintenance/Review available from the Academy.

*Patient/client refers to individuals, groups, populations, family members, and/or caregivers.

**While the domains, classes, and terms for nutrition assessment and nutrition monitoring and evaluation are combined, there are no nutrition care outcomes associated with the domain entitled Client History. Items from this domain are used for nutrition assessment only and do not change as a result of nutrition intervention.

Nutrition Care Process Step 4. Nutrition Monitoring and Evaluation

Introduction

In 2003, the Academy initiated efforts to describe and research the steps in the Nutrition Care Process (NCP), nutrition assessment, nutrition diagnosis, and nutrition intervention, and nutrition monitoring and evaluation. All four steps have a standardized language to enhance the ability to communicate within and outside of the profession and improve the consistency and quality of individualized patient/client care and the measurement of patient/client outcomes.

The fourth step is a critical component of the NCP because it identifies important measures of change or patient/client outcomes relevant to the nutrition diagnosis and nutrition intervention and describes how best to measure and evaluate these outcomes. The aim is to promote more uniformity within the profession in evaluating the efficacy of nutrition intervention.

In defining a nutrition monitoring and evaluation taxonomy, it was clear that there is substantial overlap between nutrition assessment and nutrition monitoring and evaluation. Many data points may be the same or related; however, the data purpose and use are distinct in these two steps. The items included in the nutrition monitoring and evaluation terms are those thought to be useful in evaluating the outcomes of nutrition interventions.

Special Note: The term patient(s)/client(s) are used in association with the NCP; however, the process is also intended to be used with groups. In addition, family members or caregivers are an essential asset to the patient/client, and food and nutrition professionals in the NCP. Therefore, groups, populations, families, and caregivers of patients/clients are implied each time a reference is made to patient/client.

The Nutrition Care Process steps are not necessarily linear. However, a food and nutrition professional using the process completes a nutrition assessment, identifies and labels the patient/client nutrition diagnosis, and targets the nutrition intervention at the etiology of the nutrition diagnosis. Nutrition monitoring and evaluation determines whether the patient/client is achieving the nutrition intervention goals or desired outcomes (1).

The nutrition care outcomes that food and nutrition professionals strive to measure will result directly from the Nutrition Care Process and represent the practitioner's contribution to care. Many food and nutrition professionals have been involved in tracking physician-centric or institution-centric health care outcomes, such as length of stay or reduction in health risk profile, but efforts to measure the nutrition-specific contributions to patient/client care have been sporadic and uncoordinated. This section of the *IDNT Reference Manual* will focus on describing and defining nutrition care outcomes. Nutrition care outcomes contribute to favorable health care outcomes; however, describing and defining the food and nutrition profession's impact on health care outcomes are beyond the scope of this publication.

The following figure illustrates how nutrition care outcomes are categorized and are linked together in a logical cascade that flows to other health care outcomes that are of concern to other health care providers, health systems, payers, and patients/clients.

Cascade of Nutrition Care and Health Care Outcomes

		Nutrition Care Outcomes*				Health Care Outcomes		
		Food/Nutrition-Related History	Anthropometric Measurements	Biochemical Data, Medical Tests, and Procedures	Nutrition-Focused Physical Findings	Health and Disease Outcomes	Cost Outcomes	Patient Outcomes
Nutrition diagnosis and etiology	Appropriate nutrition intervention	Improved nutrient intake and administration, knowledge, behavior, access, and ability and nutrition quality of life.	Normalization of anthropometric measures.	Normalization of biochemical data, tests, and procedures.	Normalization of physical findings.	Decreased risk, improvement of disease or condition, Prevention of adverse events.	Decreased diagnostic and treatment costs, Decreased hospital and outpatient visits.	Decreased disability, Increased quality of life.
		→	→	→	→	→	→	→

*While the domains, classes, and terms for nutrition assessment and nutrition monitoring and evaluation are combined, there is no Client History domain in nutrition monitoring and evaluation because there are no nutrition care outcomes associated with Client History. Items in the Client History domain are used for nutrition assessment only and do not change as a result of nutrition intervention.

The Academy has developed a language and methodology to help standardize the food and nutrition professional's approach to nutrition monitoring and evaluation of the Nutrition Care Process. The combined nutrition assessment and nutrition monitoring and evaluation reference sheets are based on scientific literature and describe how food and nutrition professionals measure nutrition care indicators and evaluate them.

Food and nutrition professionals are encouraged to pool or aggregate data from the nutrition monitoring and evaluation step to create an outcomes management system. Like nutrition screening, the outcomes management system is not a part of the Nutrition Care Process. The primary purpose of an outcomes management system is to evaluate the efficacy of the entire process.

What Is New in This Edition Related to Nutrition Monitoring and Evaluation?

This edition includes revisions to the standardized language for nutrition assessment and nutrition monitoring and evaluation. Since these terminologies are combined, please refer to the Nutrition Assessment chapter for the details of the changes.

One change to 33 nutrition assessment terms is removal of the asterisks (***) and shading in four domains, which makes these terms available for both nutrition assessment and nutrition monitoring and evaluation. The asterisks (***) or shading on the terminology list mean that the indicator is used only for Nutrition Assessment and is not an indicator that may change as a result of nutrition intervention. The Committee agreed with practitioner input that all terms in the four domains of Food/Nutrition-Related History; Anthropometric Measurements; Biochemical Data, Medical Tests and Procedures; and Nutrition-Focused Physical Findings should be available for use and study as nutrition assessment and nutrition monitoring and evaluation terms.

Nutrition Care Process and Nutrition Monitoring and Evaluation

Nutrition monitoring and evaluation determines whether the patient/client is meeting the nutrition intervention goals or desired outcomes (1). To reach this point in the process, a nutrition reassessment is needed to identify whether the nutrition-related problem still exists and evaluate the progress made toward resolving the problem.

If a nutrition diagnosis/problem does exist, the food and nutrition professional labels the problem and creates a PES (problem, etiology, signs/symptoms) statement.

The nutrition intervention is almost always aimed at the etiology of the nutrition diagnosis/problem identified in the PES statement. Less frequently, the nutrition intervention is directed at the signs and symptoms to minimize their impact.

Nutrition monitoring and evaluation determine whether the patient/client is achieving the nutrition intervention goals or desired outcomes.

Nutrition monitoring and evaluation answer the question, "Is the nutrition intervention strategy working to resolve the nutrition diagnosis, its etiology, and/or signs and symptoms?" This step clearly defines the outcomes specific to nutrition care. For instance, a patient newly diagnosed with hyperlipidemia may have goals related to nutrition knowledge and fat, fiber, and energy intake along with biochemical measures of total cholesterol and LDL cholesterol. The food and nutrition professional may develop an action plan to periodically monitor, evaluate, and document nutrition knowledge, intake of fat and/or saturated fat, and/or lab values.

As will be described in greater detail throughout this chapter, nutrition monitoring and evaluation assesses the patient/client's progress by comparing very specific markers or nutrition care indicators against recognized, science-based standards or baselines. Some of the terminology essential to this step is defined here. Its application to patient/client nutrition care will be covered thoroughly.

Nutrition Monitoring and Evaluation Definitions:

Nutrition monitoring—preplanned review and measurement of selected nutrition care indicators of patient/client status relevant to the defined needs, nutrition diagnosis, nutrition intervention, and outcomes.

Nutrition evaluation—the systematic comparison of current findings with the previous status, nutrition intervention goals, effectiveness of overall nutrition care, or a reference standard.

Nutrition care outcomes—the results of nutrition care that are directly related to the nutrition diagnosis and the goals of the intervention plan.

Nutrition care indicators—markers that can be measured and evaluated to determine the effectiveness of the nutrition care.

Nutrition Care Outcomes

Nutrition care should result in important changes that lead to improved behaviors and/or nutritional status. In outpatient and community settings, outcomes might include improvement in the patient/client's understanding of the food and nutrient needs and his or her ability and motivation to meet those needs. In hospital settings, outcomes might include an improvement in biochemical parameters or a basic understanding of the nutrition prescription. In long-term care facilities, outcomes might include an improvement in a patient/client's ability to feed himself or herself independently and a reduction in need for supplemental enteral nutrition support.

Nutrition care outcomes are often intermediate outcomes to other broader health care outcomes (e.g., occurrence, duration, or severity of acute and chronic disease; infections; wound healing; health care cost; and patient functional ability).

Nutrition care outcomes are distinguished by several characteristics. They:

- Represent results that the practitioner and nutrition care impacted independently
- Can be linked to nutrition intervention goals
- Are measurable with tools and resources available to the practitioner
- Occur in a reasonable time period

- Can be attributed to the nutrition care
- Are logical and biologically or psychologically plausible stepping stones to other health care outcomes (e.g., health and disease, cost, and patient/client outcomes)

Nutrition Care Outcome Categories

Nutrition care outcomes are distinct from health care outcomes because the former represent the food and nutrition professional's specific contribution to care. They are categorized into four of the five domains included in nutrition assessment. There is no Client History domain in nutrition monitoring and evaluation because there are no nutrition care outcomes associated with client history. Items in the Client History domain are used for nutrition assessment only and do not change as a result of nutrition intervention.

Nutrition Care Outcome Domains

Food/Nutrition-Related History consists of Food and Nutrient Intake, Food and Nutrient Administration, Medication and Complementary/Alternative Medicine Use, Knowledge/Beliefs/Attitudes, Behavior, Factors Affecting Access to Food and Food/Nutrition-Related Supplies, Physical Activity and Function, and Nutrition-Related Patient/Client-Centered Measures.

Food and Nutrient Intake includes factors such as composition and adequacy of food and nutrient intake, and meal and snack patterns.

Food and Nutrient Administration includes current and previous diets and/or food modifications, eating environment, and enteral and parenteral nutrition administration.

Medication and Complementary/Alternative Medicine Use includes prescription and over-the-counter medications, including herbal preparations and complementary/alternative medicine products used.

Knowledge/Beliefs/Attitudes includes understanding of nutrition-related concepts and conviction of the truth and feelings/emotions toward some nutrition-related statement or phenomenon, along with readiness to change nutrition-related behaviors.

Behavior includes patient/client activities and actions that influence achievement of nutrition-related goals.

Factors Affecting Access to Food and Food/Nutrition-Related Supplies includes factors that affect intake and availability of a sufficient quantity of safe, healthful food as well as food/nutrition-related supplies.

Physical Activity and Function includes physical activity as well as cognitive and physical ability to engage in specific tasks, e.g., breastfeeding and self-feeding.

Nutrition-Related Patient/Client-Centered Measures consist of patient/client's perceptions of his or her nutrition intervention and its impact on life.

Note: Whenever possible, nutrient intake data should be considered in combination with clinical, biochemical, anthropometric, and medical information and other factors as well as diet to provide a valid assessment of nutritional status. (Source: Institute of Medicine, *Dietary Reference Intakes: Applications and Guidelines*, Washington, DC: National Academies Press, 2000.)

Biochemical Data, Medical Tests, and Procedures include laboratory data (e.g., electrolytes, glucose, and lipid panel) and tests (e.g., gastric emptying time, resting metabolic rate).

Anthropometric Measurements include height, weight, body mass index (BMI), growth pattern indices/percentile ranks, and weight history.

Nutrition-Focused Physical Findings include findings from an evaluation of body systems, muscle and subcutaneous fat wasting, oral health, suck/swallow/breathe ability, appetite, and affect.

Health Care Outcomes

Health care outcomes represent outcomes of interest to health care providers, health systems, and payers and are defined in other standardized languages. Health care outcomes often include the cumulative outcomes of all medical care, including nutrition care. They include:

- **Health and disease outcomes:** Changes in severity, duration, or course of a condition or disease; changes in risk level; prevention of an adverse event; or maintenance of health.

- **Cost outcomes:** Changes in factors that influence the cost of health care such as hospitalization, length of stay, ICU days, number of outpatient visits, home, intermediate, and long-term care, diagnosis, and treatment procedures, and medication and equipment consumed.

- **Patient/client outcomes:** Changes in patient/client-centered indicators that reflect such things as level of disability, functional status, quality of life, and satisfaction with care.

Health care outcomes can be impacted with appropriate nutrition care of sufficient intensity and duration. Adoption of the Nutrition Care Process (including assessment, diagnosis, intervention, and monitoring and evaluation) and associated process improvements and practice innovations should result in positive changes in nutrition care outcomes that in turn improve other health care outcomes. This publication will focus only on nutrition care monitoring and evaluation and nutrition care outcomes. These represent the principle nutrition care contributions to global health care outcomes.

Nutrition Monitoring and Evaluation Components: Monitor, Measure, and Evaluate

In the fourth step of the Nutrition Care Process, food and nutrition professionals do the following three things: monitor progress, measure outcomes, and evaluate the outcomes against criteria to determine changes in specific indicators of nutrition care outcomes.

Monitor

Nutrition intervention typically involves activities completed with the patient/client (e.g., self-monitoring record review, education) and actions taken by the patient/client as a result of the intervention (e.g., adjusting insulin dosage based on self-monitoring, label reading and interpretation, self-feeding with an adapted feeding device). At each encounter, the food and nutrition professional monitors some or all of the nutrition care indicators to determine whether nutrition goals have been achieved or if further intervention is necessary.

In many cases, nutrition monitoring and evaluation will begin with a determination of the patient/client's understanding of the nutrition intervention. Progress may be impacted if the patient/client did not implement the nutrition intervention or did not comprehend how to implement the nutrition intervention.

Measure

Patient/client records, counseling sessions, and classes offer an abundance of potential nutrition care outcomes. The appropriate nutrition care indicators are determined by the nutrition diagnosis and its etiology and signs or symptoms. In addition, the nutrition intervention, medical diagnosis and health care outcome goals, and quality management goals for nutrition may influence the nutrition care indicators chosen. Other factors, such as practice setting, patient/client population, and disease state and/or severity, may also affect the choice of indicator. As noted earlier, nutrition care outcomes and health care outcomes are different and distinct. Only nutrition care outcomes are discussed here.

Sometimes the measurement or data collection occurs during the initial encounter, and other times it occurs during subsequent encounters. For example, food and nutrition professionals can measure knowledge change immediately but may only be able to measure a nutrition-related physical sign and symptom or laboratory indicator at a subsequent encounter.

Use of standardized indicators and measures increase the likelihood that valid and reliable measures of change are collected and facilitate electronic charting, coding, and outcomes measurement.

Evaluate

Comparing the nutrition care indicators against standards shown to produce the desired effect (e.g., < 30% of daily calories/kcal/kJ from fat) aids in more consistent and comparable nutrition care changes and outcomes across patient populations, practitioners, and practice settings. The criteria used for comparison may be national, institutional, and/or regulatory standards. For data related to the intake of specific nutrients, comparative standards are available in this resource for guiding accurate documentation of a patient/client's recommended nutrient intake and for comparison of the patient/clients estimated intake of one or more nutrients.

Fortunately, the nutrition monitoring and evaluation step is flexible. Food and nutrition professionals select the most appropriate reference standard or goal based on the patient/client condition and patient care setting. Not all patients/clients may be able to achieve the goals established by a national standard—e.g., < 2,300 mg sodium per day from the Dietary Guidelines for Americans (2). Mitigating circumstances may be defined and a more suitable goal established—for example, a food and nutrition professional might establish a nutrition prescription for 4,000 mg of sodium per day and evaluate a patient/client's progress toward this nutrition prescription. A second component of the evaluation is to look at the entire picture of the nutrition care by simultaneously evaluating multiple indicators and determining overall impact on the patient/client outcomes.

The following types of critical thinking skills are essential for the nutrition monitoring and evaluation step:

- Selecting appropriate indicators/measures
- Using appropriate criteria (i.e., previous status, nutrition intervention goals, or reference standards) for comparison
- Defining where patient/client is now in terms of expected outcome
- Explaining variance from expected outcomes
- Identifying factors that help or hinder progress
- Deciding between discharge or continuation of nutrition care

Following is a summary of the three components of the nutrition monitoring and evaluation step:

Nutrition Monitoring and Evaluation Components Summary

Monitor progress

- Check patient/client's understanding and compliance with nutrition intervention
- Determine whether the intervention is being implemented as prescribed
- Provide evidence that the nutrition intervention is or is not changing the patient/client's behavior or status
- Identify other positive or negative outcomes
- Gather information indicating reasons for lack of progress
- Support conclusions with evidence

Measure outcomes

- Select the nutrition care indicators to measure the desired outcomes
- Documentize nutrition care indicators to increase the validity and reliability of the measurements of outcomes

Evaluate outcomes

- Compare monitoring data with the nutrition prescription/goals or reference standard to assess progress and determine future action
- Evaluate impact of the sum of all interventions on overall patient/client health outcomes

Nutrition Care Indicators

Nutrition care indicators are clearly defined markers that can be observed and measured and are used to quantify the changes that are the result of nutrition care. Selected indicators for nutrition monitoring should be relevant to and reflect a change in the patient/client's nutrition diagnosis and its etiology and signs/symptoms. The indicators selected may also be relevant to the patient/client disease state, quality management goals for nutrition, and health care outcome goals.

Well-chosen indicators enable practitioners to monitor and evaluate progress made toward desired nutrition care outcomes. Nutrition care indicators provide information about the type and magnitude of progress made, when the nutrition problem is resolved, and what aspects of nutrition intervention are working or where adjustments are needed. This is in contrast to data used for nutrition assessment. Many data points may be the same or related; however, food and nutrition professionals use additional nutrition assessment data to identify and provide evidence about a nutrition-related problem or diagnosis.

Although not part of the Nutrition Care Process, nutrition care indicators are ideal components of a quality improvement program, which will be discussed further at the end of this chapter. Commonly used indicators vary by practice setting.

Nutrition care outcomes and indicators include the following:

- Factors that food and nutrition professionals can impact directly, such as food and nutrient intake; growth and body composition; food and nutrition-related knowledge, attitudes, and behaviors; and food access
- Laboratory values, such as HgbA1c, hematocrit, or serum cholesterol
- Functional capabilities, such as physical activity
- Patient perception of nutrition care and results of nutrition care, such as nutrition quality of life

Nutrition monitoring and evaluation reference sheets, which are combined with the nutrition assessment reference sheets, define the nutrition care outcome and the indicators that may be appropriate for measuring and evaluating outcomes within a variety of practice settings.

Measurement and Evaluation of Nutrition Indicators

Food and nutrition professionals make judgments about progress toward nutrition-related outcomes by comparing the actual value of the measured indicator to science-based criteria or an individualized goal/expected outcome. The food and nutrition professional does this based on the criteria established for the nutrition care outcome.

Criteria

Two criteria are suggested for nutrition monitoring and evaluation:

- Nutrition prescription or goal/expected outcome (e.g., a behavior change has a goal, not a nutrition prescription)
- Reference standard (e.g., national, institutional, and/or regulatory standards)

The nutrition prescription is the patient/client's recommended dietary intake of energy and/or selected foods or nutrients based on current reference standards or dietary guidelines and the patient/client's health condition and nutrition diagnosis. For example, a patient/client of normal body weight has a serum low-density lipoprotein (LDL) cholesterol of 150 mg/dL. His nutrition prescription is <30% calories/kcal/kJ from fat with <10% calories/kcal/kJ from saturated fat. If a behavior change outcome is desired, the patient/client could also have a goal (e.g., take lunch to work at least three times per week and reduce high-fat fast-food intake at lunch to one time per week).

For biochemical outcomes such as LDL cholesterol, the reference standard established by the U.S. National Heart Lung and Blood Institute of serum LDL <100 mg/dL or another reference standard may be used. The outcome could also be stated as a goal to reduce baseline LDL by a specific percentage.

Special Note: Laboratory parameters within the nutrition assessment and monitoring and evaluation reference sheets are provided only for guidance.

- Laboratory values (normal or abnormal) may vary depending on the laboratory performing the test.
- Scientific consensus does not always exist concerning selection of biochemical tests, laboratory methods, reference standards, or interpretation of data.
- Laboratory findings may be evaluated for their significance or lack of significance, depending on the patient/client population, disease severity, and/or treatment goals.
- Current national, institutional, and regulatory guidelines that affect practice should be appropriately applied to individual patients/clients.
- Arrows used with laboratory values: ↑ represents above a reference standard and ↓ represents below a reference standard.

As noted previously, reference standards are national, institutional, and/or regulatory standards. Food and nutrition professionals are familiar with reference standards for laboratory measures. Examples of other reference standards include:

- National standards for populations or patient/client groups or disease conditions: dietary reference intake standards (e.g., Dietary Reference Intakes (DRIs)) or other reference intakes, national food guidelines (e.g., U.S. Dietary Guidelines) or guidelines for specific treatment or disease condition, such as those developed by the American Society of Parenteral and Enteral Nutrition, the European Society of Parenteral and Enteral Nutrition (ESPEN) and/or the U. S. National Kidney Foundation.
- Institutional standards: e.g., established guidelines specifying how to evaluate weight change in geriatric patients/clients.
- Regulatory standards: laws with nutrition care guidelines for a certain population, such as long-term care (e.g., Omnibus Budget Reconciliation Act [OBRA]), or accreditation and certification standards, such as those developed by the Joint Commission.

Food and nutrition professionals select the most appropriate reference standards or goals based on the patient/client condition and patient care setting. Further, food and nutrition professionals are responsible for understanding any defining parameters or limitations for the reference standards used. The Institute of Medicine's Dietary Reference Intakes (DRIs), for example, have very specific parameters for interpretation of estimated intake. Practitioners from countries that do not use the DRIs should refer to their own established dietary reference standards and guidance provided in this manual regarding other reference intakes interpretation.

Monitoring and Evaluation of Nutrient Intake

Data collection for nutrient intake is imprecise because it relies generally on patient/client estimations and reports of intake. Enteral and/or parenteral nutrition intake can be more precise if it is the sole source of nutrition and accurate records of enteral and/or parenteral nutrition delivery are available.

Once the data are collected, food and nutrition professionals compare the estimated nutrient intake to a patient/client goal or a reference standard. Historically, dietary reference intake standards (e.g., DRIs) have been used for comparison of intake in a variety of populations since other specific reference standards are not always available. Practitioners must keep in mind that if using the DRIs, there are the following interpretation parameters:

- For evaluation of nutritional status, nutrient intake data should be combined with biochemical, clinical, anthropometric, medical diagnosis, and clinical data.
- The DRIs are established for healthy individuals. It is not clear how the DRIs should be interpreted in patients/clients with health problems or illnesses.
- Estimations consistent with inadequate intake do not necessarily mean there is a nutrient deficiency.
- The following note is part of the definition for the ten reference sheets related to intake. Additional information is listed on the next page for bioactive substance intake.

Note: Whenever possible, nutrient intake data should be considered in combination with clinical, biochemical, anthropometric information, medical diagnosis, clinical status, and/or other factors as well as diet to provide a valid assessment of nutritional status based on a totality of the evidence. (Institute of Medicine. Dietary Reference Intakes: Applications in Dietary Assessment. Washington, DC: National Academies Press; 2000.)

Bioactive substances do not have established DRIs. They are not considered to be essential nutrients because inadequate intakes do not result in biochemical or clinical symptoms of a deficiency. However, naturally occurring food compounds with potential risk or benefit to health are reviewed by the Food and Nutrition Board of the Institute of Medicine and, if sufficient data exist, reference intakes are established. Further, the nutrition assessment and nutrition monitoring and evaluation reference sheet notes that the criteria for evaluation of bioactive substance intake must be the nutrition prescription or goal since there are no established minimum requirements or Tolerable Upper Intake Levels. The nutrition prescription or goal would be based on an individual goal or research, such as the Academy's Disorders of Lipid Metabolism Evidence-Based Guideline. This guideline considers the evidence supporting intake of plant stanol and sterol esters in the presence of lipid disorders. It is available in the Academy's Evidence Analysis Library (www.andevidencelibrary.com). Therefore, the note added to the definition of Inadequate Bioactive Substance Intake is:

Note: Bioactive substances are not part of the Dietary Reference Intakes, and therefore there are no established minimum requirements or Tolerable Upper Intake Levels. However, RDs can assess whether estimated intakes are adequate or excessive using the patient/client goal or nutrition prescription for comparison.

It is important to reiterate that food and nutrition professionals are given two criteria for use: the nutrition prescription/goal and reference standards (e.g., national, institutional, and/or regulatory standards). They are not limited to using the DRIs as the criteria for comparison of nutrient intake data. In certain populations where other appropriate scientific information has emerged and reference standards are available, such as in renal disease, it may be appropriate to use an alternate reference standard instead of the DRIs.

Practitioners from countries that do not use the Institute of Medicine's DRIs should refer to their own established dietary reference standards and guidance provided in this manual regarding Other Reference Intakes Interpretation.

Scale

Once the nutrition care indicator is selected and the criteria are established, the next step is evaluating the changes using a scale. Practitioners use the scale to define the degree to which the indicator changed to meet the criteria.

Other professions, such as nursing and speech-language pathology, have developed validated scales for evaluating the changes in a patient/client's status. The food and nutrition profession critically needs reliable and valid indicators and scales to demonstrate the impact of nutrition care. This need is balanced with the desire to have these measures as soon as is practical to facilitate measuring outcomes and research and to move toward electronic medical records.

Selection and Interpretation of the Nutrition Care Indicators

Primary Factors Affecting Indicator Selection and Interpretation

Although the nutrition monitoring and evaluation reference sheets define the wide variety of indicators that are appropriate for measuring and evaluating outcomes, the reference sheets do not distinguish which nutrition care indicators are best for a particular situation. The food and nutrition professional makes this decision based on the individual situation.

Three primary factors will influence the selection, measurement, and interpretation of the individual nutrition care outcomes indicators:

- Practice setting (e.g., inpatient or outpatient, long-term care, community)
- Age of the patient/client (e.g., pediatrics, geriatrics)
- Disease state and severity (e.g., renal disease, diabetes, critical illness)

National reference standards are available for many indicators. For example, the Academy has a Critical Illness Evidence-Based Guideline, which addresses glucose level (indicator) for critically ill patients/clients with hyperglycemia. This guideline reads: “Dietitians should promote attainment of strict glycemic control (80–110 mg/dL) to reduce time on mechanical ventilation in critically ill medical ICU patients” (3).

Glucose level is the appropriate indicator in a stressed ICU patient, and the criteria have been defined. HgbA1c is not used as an indicator in this instance. It is the food and nutrition professional’s responsibility to distinguish which indicator is appropriate for the given practice and patient/client situation.

Secondary Factors Affecting Indicator Selection and Interpretation

The time frame over which a patient/client receives nutrition care influences the selection of the indicator. The previous example illustrates this point. HgbA1c is a measure of glucose status for a 60- to 90-day period and is not useful in monitoring and evaluation of the intensive care patient/client with acute elevation of blood glucose. HgbA1c can be appropriate, however, in the outpatient setting when patient/clients are observed over a period of time.

Other Considerations

Interpretation of the changes seen in particular nutrition care indicators may require evidence or explanation by a food and nutrition professional. For example, if a patient/client attains the goal to reduce overall body fat through nutrition intervention, one may see an increase in body mass index (BMI) due to the patient/client’s increase in muscle mass. Occurrences such as these should be anticipated, and appropriate evidence and explanation should be documented.

The considerations described here illustrate the importance of appropriate indicator selection and interpretation. Each situation will be different depending on the practice setting, the population, the disease state and severity, and the time interval over which the patient/client receives nutrition care. Selection of the incorrect indicator may lead to incorrect conclusions about the impact of nutrition interventions.

Nutrition Monitoring and Evaluation Reference Sheets

The reference sheets for nutrition monitoring and evaluation are combined with the nutrition assessment reference sheets.

Nutrition Monitoring and Evaluation: Documentation

Several components of documentation are recommended throughout the Nutrition Care Process. Documentation is an ongoing process that supports all of the steps. Documentation that is relevant and timely is essential, but it will be lacking if it does not include specific statements of where the patient/client is now in terms of expected nutrition outcomes.

Quality documentation for nutrition monitoring and evaluation includes the following:

- Date and time
- Indicators measured, results, and the method for obtaining the measurement
- Criteria to which the indicator is compared (i.e., nutrition prescription/goal or a reference standard)
- Factors facilitating or hampering progress
- Other positive or negative outcomes
- Future plans for nutrition care, nutrition monitoring, and follow-up or discharge

In an initial encounter, it may not be possible to include all of these elements because the nutrition prescription and goals have just been established, and the nutrition intervention may not have occurred. Two complete case studies with examples of documentation in various charting formats are available in the Nutrition Care Process and Model Resource section of the Academy website (www.eatright.org) in the Nutrition Care Process section. Brief excerpts of documentation may look like the sample provided on the following page.

Initial encounter 7/15

Nutrition assessment: Based on a 3-day food diary, patient/client consumes approximately 120 grams fat per day. Meals are frequently consumed at restaurants where patient/client often selects high-fat food items. The patient/client's BMI is 29.

Nutrition diagnosis: Excessive fat intake related to limited access to healthful food during frequent restaurant meals with high-fat food choices as evidenced by a current estimated average intake of 120 grams of fat per day.

Nutrition intervention: Nutrition prescription is 60 grams of fat per day. Nutrition counseling provided.

Nutrition monitoring and evaluation: Estimated intake of fat (indicator) is currently 200% of nutrition prescription (criteria). Will monitor change in fat intake at next encounter.

Follow-up encounter 8/10

Nutrition intervention: Patient/client reports difficulty ordering low-fat selections at restaurants. Provided comprehensive education to identify low-fat items on restaurant menus. Patient/client implementing self-monitoring log.

Nutrition monitoring and evaluation: Based on 3-day diet record, some progress toward nutrition prescription as estimated intake of fat is reduced from 120 to 90 grams per day. Will monitor change in restaurant selections (using patient/client's self-monitoring log) and fat intake at next encounter.

Nutrition Monitoring and Evaluation: Data Sources and Tools

To monitor and evaluate a patient/client's progress, the following tools may be used:

- Patient/client questionnaires
- Surveys
- Pretests and posttests
- Patient/client/family member interviews
- Anthropometric measurements
- Biochemical and medical test results
- Food and nutrition intake tools

These tools can be used when patients are seen individually or in groups, or when the encounter is conducted by phone or via computer. Pooled data can be monitored and evaluated using tracking forms and computer software programs.

Nutrition Care Outcome Management System

Nutrition monitoring and evaluation applies to individual patients/clients and to groups of patients/clients. Selecting nutrition monitoring and evaluation data for an individual patient/client depends primarily on the nutrition diagnosis and the nutrition intervention. When selecting the nutrition monitoring and evaluation indicators for patients/clients consider how data may be used when pooled to assess quality of care provided to specific groups of patients. Choosing what to monitor may also be influenced by facility strategic goals and quality improvement plans or regulatory or certifying agency requirements (e.g., American Diabetes Association Self-Management Education certification or Joint Commission standards and elements of performance).

Aggregate nutrition care indicator data may be reported to administrators, payers, quality improvement organizations, and others who decide health care funding.

Potential benefits of the aggregate data include the following:

- Provide for process improvement and foster understanding of what works and what does not
- Can be used for outcomes measurement studies and quality improvement initiatives
- Link care processes and resource utilization

- Give an opportunity to identify and analyze causes of less than optimal performance and outcomes
- Define information for inclusion in centralized data systems relevant to nutrition care
- Can be used to quantify the food and nutrition professional's contribution to health care

Various factors that can impact aggregate nutrition care indicator data interpretation and need consideration include:

- Method for collecting the outcome, e.g., 3-day diet record versus a 24-hour recall
- Data source, e.g., patient/client, family/caregiver, chart, bedside record
- Intervention components (e.g., type, duration, and intensity)
- Education and skill level of food and nutrition professional
- Nutrition program attributes

A case example integrating nutrition monitoring and evaluation data into a department quality improvement program is available in the Nutrition Care Process section of the Academy website (www.eatright.org/ncp).

Summary

Nutrition monitoring and evaluation describes the patient/client's progress through consistent terms that are evaluated based on carefully selected indicators and criteria. As more and more food and nutrition professionals use these tools and share their progress and nutrition care outcomes, the body of literature quantifying the food and nutrition professional's contribution to improving the health of patients/clients and describing effective methods of intervention will grow.

References

1. Lacey K, Pritchett E. Nutrition Care Process and Model: ADA adopts road map to quality care and outcomes management. *J Am Diet Assoc.* 2003;103:1061-1072.
2. Dietary Guidelines for Americans. 2010. Available at: <http://www.cnpp.usda.gov/DietaryGuidelines.htm>. Accessed: January 24, 2012.
3. Academy of Nutrition and Dietetics. Critical illness evidence-based nutrition guideline. 2006. Available at: <http://www.andevidencelibrary.com/topic.cfm?cat=2799> Accessed January 26, 2012.

Nutrition Assessment and Monitoring and Evaluation Terminology

This is a combined list of Nutrition Assessment and Monitoring and Evaluation terms. Indicators that are shaded are used ONLY for nutrition assessment. The rest of the indicators are used for assessment and monitoring and evaluation. Each term has an Academy unique identifier, a five-digit number (e.g., 99999) following the alpha-numeric IDNT code. Neither should be visible in nutrition documentation. The Academy unique identifier is for data tracking purposes in electronic health records.

FOOD/NUTRITION-RELATED HISTORY (FH)

Food and nutrient intake, food and nutrient administration, medication and complementary/alternative medicine use, knowledge/beliefs/attitudes, behavior, food and supply availability, physical activity and function, nutrition-related patient/client-centered measures.

Food and Nutrient Intake (1)

Composition and adequacy of food and nutrient intake, meal and snack patterns, current and previous diets and/or food modifications, and eating environment.

Energy Intake (1.1)

Total energy intake from all sources including food, beverages, breastmilk/formula, supplements, and via enteral and parenteral routes.

Energy intake (1.1.1)

- ☐ Total energy intake FH-1.1.1.1 10005

Food and Beverage Intake (1.2)

Type, amount, and pattern of intake of foods and food groups, indices of diet quality, intake of fluids, breastmilk and infant formula

Fluid/beverage intake (1.2.1)

- ☐ Oral fluids FH-1.2.1.1 10008
- ☐ Food-derived fluids FH-1.2.1.2 10009
- ☐ Liquid meal replacement or supplement FH-1.2.1.3 10010

Food intake (1.2.2)

- ☐ Amount of food FH-1.2.2.1 10012
- ☐ Types of food/meals FH-1.2.2.2 10013
- ☐ Meal/snack pattern FH-1.2.2.3 10014
- ☐ Diet quality index FH-1.2.2.4 10015
- ☐ Food variety FH-1.2.2.5 10016

Breastmilk/infant formula intake (1.2.3)

- ☐ Breastmilk intake FH-1.2.3.1 10018
- ☐ Infant formula intake FH-1.2.3.2 10019

Enteral and Parenteral Nutrition Intake (1.3)

Specialized nutrition support intake from all sources, e.g., enteral and parenteral routes.

Enteral nutrition intake (1.3.1)

- ☐ Formula/solution FH-1.3.1.1 10022
- ☐ Feeding tube flush FH-1.3.1.2 10023

Parenteral nutrition intake (1.3.2)

- ☐ Formula/solution FH-1.3.2.1 10025
- ☐ IV fluids FH-1.3.2.2 10026

Bioactive Substance Intake (1.4)

Alcohol, plant stanol and sterol esters, soy protein, psyllium and β -glucan, and caffeine intake from all sources, e.g., food, beverages, supplements, and via enteral and parenteral routes.

Alcohol intake (1.4.1)

- ☐ Drink size/volume FH-1.4.1.1 10029
- ☐ Frequency FH-1.4.1.2 10030
- ☐ Pattern of alcohol consumption FH-1.4.1.3 10031

Bioactive substance intake (1.4.2)

- ☐ Plant stanol esters FH-1.4.2.1 10034
- ☐ Plant sterol esters FH-1.4.2.2 10807
- ☐ Soy protein FH-1.4.2.3 10035
- ☐ Psyllium FH-1.4.2.4 10827
- ☐ β -glucan FH-1.4.2.5 10037
- ☐ Food additives (specify) FH-1.4.2.6 10038
- ☐ Other (specify) FH-1.4.2.7 10039

Caffeine intake (1.4.3)

- ☐ Total caffeine FH-1.4.3.1 10041

Macronutrient Intake (1.5)

Fat and cholesterol, protein, carbohydrate, and fiber intake from all sources including food, beverages, supplements, and via enteral and parenteral routes.

Fat and cholesterol intake (1.5.1)

- ☐ Total fat FH-1.5.1.1 10044
- ☐ Saturated fat FH-1.5.1.2 10045
- ☐ Trans fatty acids FH-1.5.1.3 10046

Fat and cholesterol intake (1.5.1), cont'd

- ☐ Polyunsaturated fat FH-1.5.1.4 10047
- ☐ Monounsaturated fat FH-1.5.1.5 10048
- ☐ Omega-3 fatty acids FH-1.5.1.6 10049
- ☐ Dietary cholesterol FH-1.5.1.7 10050
- ☐ Essential fatty acids FH-1.5.1.8 10051

Protein intake (1.5.2)

- ☐ Total protein FH-1.5.2.1 10053
- ☐ High biological value protein FH-1.5.2.2 10054
- ☐ Casein FH-1.5.2.3 10055
- ☐ Whey FH-1.5.2.4 10056
- ☐ Amino acids FH-1.5.2.5 10057
- ☐ Essential amino acids FH-1.5.2.6 10058

Carbohydrate intake (1.5.3)

- ☐ Total carbohydrate FH-1.5.3.1 10060
- ☐ Sugar FH-1.5.3.2 10061
- ☐ Starch FH-1.5.3.3 10062
- ☐ Glycemic index FH-1.5.3.4 10063
- ☐ Glycemic load FH-1.5.3.5 10064
- ☐ Source of carbohydrate FH-1.5.3.6 10065
- ☐ Insulin-to-carbohydrate ratio FH-1.5.3.7 10066

Fiber intake (1.5.4)

- ☐ Total fiber FH-1.5.4.1 10068
- ☐ Soluble fiber FH-1.5.4.2 10069
- ☐ Insoluble fiber FH-1.5.4.3 10070

Micronutrient Intake (1.6)

Vitamin and mineral intake from all sources, e.g., food, beverages, supplements, and via enteral and parenteral routes.

Vitamin intake (1.6.1)

- ☐ A (1) 10073
- ☐ C (2) 10074
- ☐ D (3) 10075
- ☐ E (4) 10076
- ☐ K (5) 10077
- ☐ Thiamin (6) 10078
- ☐ Riboflavin (7) 10079
- ☐ Niacin (8) 10080
- ☐ Folate (9) 10081
- ☐ B6 (10) 10082
- ☐ B12 (11) 10083
- ☐ Pantothenic acid (12) 10084
- ☐ Biotin (13) 10085
- ☐ Multivitamin (14) 10086

Mineral/element intake (1.6.2)

- ☐ Calcium (1) 10089
- ☐ Chloride (2) 10090
- ☐ Iron (3) 10091
- ☐ Magnesium (4) 10092
- ☐ Potassium (5) 10093
- ☐ Phosphorus (6) 10094
- ☐ Sodium (7) 10095
- ☐ Zinc (8) 10096
- ☐ Sulfate (9) 10097
- ☐ Fluoride (10) 10098
- ☐ Copper (11) 10099
- ☐ Iodine (12) 10100
- ☐ Selenium (13) 10101
- ☐ Manganese (14) 10102
- ☐ Chromium (15) 10103
- ☐ Molybdenum (16) 10104
- ☐ Boron (17) 10105
- ☐ Cobalt (18) 10106
- ☐ Multi-mineral (19) 10107
- ☐ Multi-trace element (20) 10108

Food and Nutrient Administration (2)

Current and previous diets and/or food modifications, eating environment, and enteral and parenteral nutrition administration.

Diet History (2.1)

Description of food and drink regularly provided or consumed, past diets followed or prescribed and counseling received, and the eating environment.

Diet order (2.1.1)

- ☐ General, healthful diet FH-2.1.1.1 10113
- ☐ Modified diet FH-2.1.1.2 10114
- ☐ Enteral nutrition order FH-2.1.1.3 10115
- ☐ Parenteral nutrition order FH-2.1.1.4 10116

Diet experience (2.1.2)

- ☐ Previously prescribed diets FH-2.1.2.1 10118
- ☐ Previous diet/nutrition education/counseling FH-2.1.2.2 10119
- ☐ Self-selected diet/s followed FH-2.1.2.3 10120
- ☐ Dieting attempts FH-2.1.2.4 10121
- ☐ Food allergies FH-2.1.2.5 10805
- ☐ Food intolerance FH-2.1.2.6 10806

Nutrition Assessment and Monitoring and Evaluation Terminology, cont'd

Eating environment (2.1.3)

☐ Location	FH-2.1.3.1	10123
☐ Atmosphere	FH-2.1.3.2	10124
☐ Caregiver/companion	FH-2.1.3.3	10125
☐ Appropriate breastfeeding accommodations/facility	FH-2.1.3.4	10126
☐ Eats alone	FH-2.1.3.5	10127

Enteral and parenteral nutrition administration (2.1.4)

☐ Enteral access	FH-2.1.4.1	10129
☐ Parenteral access	FH-2.1.4.2	10130
☐ Body position, EN	FH-2.1.4.3	10804

Medication and Complementary/Alternative Medicine Use (3)

Prescription and over-the-counter medications, including herbal preparations and complementary/alternative medicine products used.

Medications (3.1)

☐ Prescription medication use	FH-3.1.1	10820
☐ OTC medication use	FH-3.1.2	10134
☐ Misuse of medication	FH-3.1.3	10135

Complementary/Alternative Medicine (3.2)

☐ Nutrition-related complementary/alternative medicine use	FH-3.2.1	10137
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Knowledge/Beliefs/Attitudes (4)

Understanding of nutrition-related concepts and conviction of the truth and feelings/emotions toward some nutrition-related statement or phenomenon, along with readiness to change nutrition-related behaviors.

Food and nutrition knowledge/skill (4.1)

☐ Area(s) and level of knowledge/skill	FH-4.1.1	10848
☐ Diagnosis specific or global nutrition-related knowledge score	FH-4.1.2	10143

Beliefs and attitudes (4.2)

☐ Conflict with personal/family value system	FH-4.2.1	10145
☐ Distorted body image	FH-4.2.2	10146
☐ End-of-life decisions	FH-4.2.3	10147
☐ Motivation	FH-4.2.4	10148
☐ Preoccupation with food/nutrients	FH-4.2.5	10149
☐ Preoccupation with weight	FH-4.2.6	10150
☐ Readiness to change nutrition-related behaviors	FH-4.2.7	10151
☐ Self-efficacy	FH-4.2.8	10152
☐ Self-talk/cognitions	FH-4.2.9	10153
☐ Unrealistic nutrition-related goals	FH-4.2.10	10154
☐ Unscientific beliefs/attitudes	FH-4.2.11	10155
☐ Food preferences	FH-4.2.12	10156
☐ Emotions	FH-4.2.13	10157

Behavior (5)

Patient/client activities and actions, which influence achievement of nutrition-related goals.

Adherence (5.1)

☐ Self-reported adherence score	FH-5.1.1	10160
☐ Nutrition visit attendance	FH-5.1.2	10161
☐ Ability to recall nutrition goals	FH-5.1.3	10162
☐ Self-monitoring at agreed upon rate	FH-5.1.4	10163
☐ Self-management as agreed upon	FH-5.1.5	10164

Avoidance behavior (5.2)

☐ Avoidance	FH-5.2.1	10166
☐ Restrictive eating	FH-5.2.2	10167
☐ Cause of avoidance behavior	FH-5.2.3	10168

Bingeing and purging behavior (5.3)

☐ Binge eating behavior	FH-5.3.1	10170
☐ Purging behavior	FH-5.3.2	10171

Mealtime behavior (5.4)

☐ Meal duration	FH-5.4.1	10173
☐ Percent of meal time spent eating	FH-5.4.2	10174
☐ Preference to drink rather than eat	FH-5.4.3	10175
☐ Refusal to eat/chew	FH-5.4.4	10176
☐ Spitting food out	FH-5.4.5	10177
☐ Rumination	FH-5.4.6	10178
☐ Patient/client/caregiver fatigue during feeding process resulting in inadequate intake	FH-5.4.7	10179

Mealtime behavior (5.4), cont'd

☐ Willingness to try new foods	FH-5.4.8	10180
☐ Limited number of accepted foods	FH-5.4.9	10181
☐ Rigid sensory preferences	FH-5.4.10	10182

Social network (5.5)

☐ Ability to build and utilize social network	FH-5.5.1	10184
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Factors Affecting Access to Food and Food/Nutrition-Related

Supplies (6)

Factors that affect intake and availability of a sufficient quantity of safe, healthful food as well as food/nutrition-related supplies.

Food/nutrition program participation (6.1)

☐ Eligibility for government programs	FH-6.1.1	10187
☐ Participation in government programs	FH-6.1.2	10188
☐ Eligibility for community programs	FH-6.1.3	10189
☐ Participation in community programs	FH-6.1.4	10190

Safe food/meal availability (6.2)

☐ Availability of shopping facilities	FH-6.2.1	10192
☐ Procurement of safe food	FH-6.2.2	10800
☐ Appropriate meal preparation facilities	FH-6.2.3	10194
☐ Availability of safe food storage	FH-6.2.4	10195
☐ Appropriate storage technique	FH-6.2.5	10196
☐ Identification of safe food	FH-6.2.6	10801

Safe water availability (6.3)

☐ Availability of potable water	FH-6.3.1	10198
☐ Appropriate water decontamination	FH-6.3.2	10199

Food and nutrition-related supplies availability (6.4)

☐ Access to food and nutrition-related supplies	FH-6.4.1	10201
☐ Access to assistive eating devices	FH-6.4.2	10202
☐ Access to assistive food preparation devices	FH-6.4.3	10203

Physical Activity and Function (7)

Physical activity, cognitive and physical ability to engage in specific tasks, e.g., breastfeeding, self-feeding.

Breastfeeding (7.1)

☐ Initiation of breastfeeding	FH-7.1.1	10206
☐ Duration of breastfeeding	FH-7.1.2	10207
☐ Exclusive breastfeeding	FH-7.1.3	10208
☐ Breastfeeding problems	FH-7.1.4	10209

Nutrition-related ADLs and IADLs (7.2)

☐ Physical ability to complete tasks for meal preparation	FH-7.2.1	10211
☐ Physical ability to self-feed	FH-7.2.2	10212
☐ Ability to position self in relation to plate	FH-7.2.3	10213
☐ Receives assistance with intake	FH-7.2.4	10214
☐ Ability to use adaptive eating devices	FH-7.2.5	10215
☐ Cognitive ability to complete tasks for meal preparation	FH-7.2.6	10216
☐ Remembers to eat	FH-7.2.7	10139
☐ Recalls eating	FH-7.2.8	10218
☐ Mini Mental State Examination Score	FH-7.2.9	10219
☐ Nutrition-related activities of daily living (ADL) score	FH-7.2.10	10220
☐ Nutrition-related instrumental activities of daily living (IADL) score	FH-7.2.11	10221

Physical activity (7.3)

☐ Physical activity history	FH-7.3.1	10223
☐ Consistency	FH-7.3.2	10224
☐ Frequency	FH-7.3.3	10225
☐ Duration	FH-7.3.4	10226
☐ Intensity	FH-7.3.5	10227
☐ Type of physical activity	FH-7.3.6	10228
☐ Strength	FH-7.3.7	10229
☐ TV/screen time	FH-7.3.8	10230
☐ Other sedentary activity time	FH-7.3.9	10231
☐ Involuntary physical movement	FH-7.3.10	10232
☐ NEAT	FH-7.3.11	10233

Nutrition Assessment and Monitoring and Evaluation Terminology, cont'd

Factors affecting access to physical activity (7.4)

☐ Neighborhood safety	FH-7.4.1	10822
☐ Walkability of neighborhood	FH-7.4.2	10823
☐ Proximity to parks/green space	FH-7.4.3	10824
☐ Access to physical activity facilities/programs	FH-7.4.4	10825

Nutrition-Related Patient/Client-Centered Measures (8)

Patient/client's perception of his or her nutrition intervention and its impact on life.

Nutrition quality of life (8.1)

☐ Nutrition quality of life responses	FH-8.1.1	10236
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ANTHROPOMETRIC MEASUREMENTS (AD)

Height, weight, body mass index (BMI), growth pattern indices/percentile ranks, and weight history.

Body composition/growth/weight history (1.1)

☐ Height/length	AD-1.1.1	10239
☐ Weight	AD-1.1.2	10240
☐ Frame size	AD-1.1.3	10241
☐ Weight change	AD-1.1.4	10242
☐ Body mass index	AD-1.1.5	10243
☐ Growth pattern indices/percentile ranks	AD-1.1.6	10244
☐ Body compartment estimates	AD-1.1.7	10245

BIOCHEMICAL DATA, MEDICAL TESTS

AND PROCEDURES (BD)

Laboratory data, (e.g., electrolytes, glucose, and lipid panel) and tests (e.g., gastric emptying time, resting metabolic rate).

Acid-base balance (1.1)

☐ Arterial pH	BD-1.1.1	10248
☐ Arterial bicarbonate	BD-1.1.2	10249
☐ Partial pressure of carbon dioxide in arterial blood, PaCO ₂	BD-1.1.3	10250
☐ Partial pressure of oxygen in arterial blood, PaO ₂	BD-1.1.4	10251
☐ Venous pH	BD-1.1.5	10252
☐ Venous bicarbonate	BD-1.1.6	10253

Electrolyte and renal profile (1.2)

☐ BUN	BD-1.2.1	10255
☐ Creatinine	BD-1.2.2	10256
☐ BUN:creatinine ratio	BD-1.2.3	10257
☐ Glomerular filtration rate	BD-1.2.4	10258
☐ Sodium	BD-1.2.5	10259
☐ Chloride	BD-1.2.6	10260
☐ Potassium	BD-1.2.7	10261
☐ Magnesium	BD-1.2.8	10262
☐ Calcium, serum	BD-1.2.9	10263
☐ Calcium, ionized	BD-1.2.10	10264
☐ Phosphorus	BD-1.2.11	10265
☐ Serum osmolality	BD-1.2.12	10266
☐ Parathyroid hormone	BD-1.2.13	10267

Essential fatty acid profile (1.3)

☐ Triene:Tetraene ratio	BD-1.3.1	10269
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Gastrointestinal profile (1.4)

☐ Alkaline phosphatase	BD-1.4.1	10271
☐ Alanine aminotransferase, ALT	BD-1.4.2	10272
☐ Aspartate aminotransferase, AST	BD-1.4.3	10273
☐ Gamma glutamyl transferase, GGT	BD-1.4.4	10274
☐ Gastric residual volume	BD-1.4.5	10275
☐ Bilirubin, total	BD-1.4.6	10276
☐ Ammonia, serum	BD-1.4.7	10277
☐ Toxicology report, including alcohol	BD-1.4.8	10278
☐ Prothrombin time, PT	BD-1.4.9	10279
☐ Partial thromboplastin time, PTT	BD-1.4.10	10280
☐ INR (ratio)	BD-1.4.11	10281
☐ Fecal fat	BD-1.4.12	10282
☐ Amylase	BD-1.4.13	10283
☐ Lipase	BD-1.4.14	10284
☐ Other digestive enzymes (specify)	BD-1.4.15	10285
☐ D-xylose	BD-1.4.16	10286
☐ Hydrogen breath test	BD-1.4.17	10287
☐ Intestinal biopsy	BD-1.4.18	10288
☐ Stool culture	BD-1.4.19	10289

Gastrointestinal profile (1.4), cont'd

☐ Gastric emptying time	BD-1.4.20	10290
☐ Small bowel transit time	BD-1.4.21	10291
☐ Abdominal films	BD-1.4.22	10292
☐ Swallow study	BD-1.4.23	10293

Glucose/endocrine profile (1.5)

☐ Glucose, fasting	BD-1.5.1	10295
☐ Glucose, casual	BD-1.5.2	10296
☐ HgbA1c	BD-1.5.3	10297
☐ Preprandial capillary plasma glucose	BD-1.5.4	10298
☐ Peak postprandial capillary plasma glucose	BD-1.5.5	10299
☐ Glucose tolerance test	BD-1.5.6	10300
☐ Cortisol level	BD-1.5.7	10301
☐ IGF-binding protein	BD-1.5.8	10302
☐ Thyroid function tests (TSH, T4, T3)	BD-1.5.9	10303
☐ Pituitary hormone tests (GH, ACTH, LH, FSH)	BD-1.5.10	10826

Inflammatory profile (1.6)

☐ C-reactive protein	BD-1.6.1	10305
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Lipid profile (1.7)

☐ Cholesterol, serum	BD-1.7.1	10307
☐ Cholesterol, HDL	BD-1.7.2	10308
☐ Cholesterol, LDL	BD-1.7.3	10309
☐ Cholesterol, non-HDL	BD-1.7.4	10310
☐ Total cholesterol:HDL cholesterol	BD-1.7.5	10311
☐ LDL:HDL	BD-1.7.6	10312
☐ Triglycerides, serum	BD-1.7.7	10313

Metabolic rate profile (1.8)

☐ Resting metabolic rate, measured	BD-1.8.1	10315
☐ Respiratory quotient, measured	BD-1.8.2	10316

Mineral profile (1.9)

☐ Copper, serum or plasma	BD-1.9.1	10318
☐ Iodine, urinary excretion	BD-1.9.2	10319
☐ Zinc, serum or plasma	BD-1.9.3	10320
☐ Boron, serum or plasma	BD-1.9.4	10841
☐ Chromium, serum or urinary	BD-1.9.5	10842
☐ Fluoride, plasma	BD-1.9.6	10843
☐ Manganese, urinary, blood, plasma	BD-1.9.7	10844
☐ Molybdenum, serum	BD-1.9.8	10845
☐ Selenium, serum or urinary	BD-1.9.9	10846

Nutritional anemia profile (1.10)

☐ Hemoglobin	BD-1.10.1	10323
☐ Hematocrit	BD-1.10.2	10324
☐ Mean corpuscular volume	BD-1.10.3	10325
☐ Red blood cell folate	BD-1.10.4	10326
☐ Red cell distribution width	BD-1.10.5	10327
☐ B12, serum	BD-1.10.6	10328
☐ Methylmalonic acid, serum	BD-1.10.7	10329
☐ Folate, serum	BD-1.10.8	10330
☐ Homocysteine, serum	BD-1.10.9	10331
☐ Ferritin, serum	BD-1.10.10	10332
☐ Iron, serum	BD-1.10.11	10333
☐ Total iron-binding capacity	BD-1.10.12	10334
☐ Transferrin saturation	BD-1.10.13	10335

Protein profile (1.11)

☐ Albumin	BD-1.11.1	10337
☐ Prealbumin	BD-1.11.2	10338
☐ Transferrin	BD-1.11.3	10339
☐ Phenylalanine, plasma	BD-1.11.4	10340
☐ Tyrosine, plasma	BD-1.11.5	10341
☐ Amino acid, other, specify	BD-1.11.6	10342
☐ Antibody level, specify	BD-1.11.7	10343
☐ Carbohydrate-deficient transferrin	BD-1.11.8	10847

Urine profile (1.12)

☐ Urine color	BD-1.12.1	10345
☐ Urine osmolality	BD-1.12.2	10346
☐ Urine specific gravity	BD-1.12.3	10347
☐ Urine test, specify	BD-1.12.4	10348
☐ Urine volume	BD-1.12.5	10349

Nutrition Assessment and Monitoring and Evaluation Terminology, cont'd

Vitamin profile (1.13)

☐ Vitamin A, serum or plasma retinol	BD-1.13.1	10351
☐ Vitamin C, plasma or serum	BD-1.13.2	10352
☐ Vitamin D, 25-hydroxy	BD-1.13.3	10353
☐ Vitamin E, plasma alpha-tocopherol	BD-1.13.4	10354
☐ Thiamin, activity coefficient for erythrocyte transketolase activity	BD-1.13.5	10355
☐ Riboflavin, activity coefficient for erythrocyte glutathione reductase activity	BD-1.13.6	10356
☐ Niacin, urinary N'methyl-nicotinamide concentration	BD-1.13.7	10357
☐ Vitamin B6, plasma or serum pyridoxal 5' phosphate concentration	BD-1.13.8	10358
☐ Pantothenic acid, urinary pantothenate excretion, plasma	BD-1.13.9	10850
☐ Biotin, urinary 3-hydroxyisovaleric acid excretion or lymphocyte propionyl-CoA carboxylase in pregnancy, serum	BD-1.13.10	10851

NUTRITION-FOCUSED PHYSICAL FINDINGS (PD)

Findings from an evaluation of body systems, muscle and subcutaneous fat wasting, oral health, suck/swallow/breathe ability, appetite, and affect.

Nutrition-focused physical findings (1.1)

☐ Overall appearance (specify) _____	PD-1.1.1	10362
☐ Body language (specify) _____	PD-1.1.2	10363
☐ Cardiovascular-pulmonary (specify) _____	PD-1.1.3	10364
☐ Extremities, muscles and bones (specify) _____	PD-1.1.4	10365
☐ Digestive system (mouth to rectum) (specify) _____	PD-1.1.5	10366
☐ Head and eyes (specify) _____	PD-1.1.6	10367
☐ Nerves and cognition (specify) _____	PD-1.1.7	10368
☐ Skin (specify) _____	PD-1.1.8	10369
☐ Vital signs (specify) _____	PD-1.1.9	10370

CLIENT HISTORY (CH)

Current and past information related to personal, medical, family, and social history.

Personal History (1)

General patient/client information such as age, gender, race/ethnicity, language, education, and role in family.

Personal data (1.1)

☐ Age	CH-1.1.1	10374
☐ Gender	CH-1.1.2	10375
☐ Race/Ethnicity	CH-1.1.3	10376
☐ Language	CH-1.1.4	10377
☐ Literacy factors	CH-1.1.5	10378
☐ Education	CH-1.1.6	10379
☐ Role in family	CH-1.1.7	10380
☐ Tobacco use	CH-1.1.8	10381
☐ Physical disability	CH-1.1.9	10382
☐ Mobility	CH-1.1.10	10383

Patient/Client/Family Medical/Health History (2)

Patient/client or family disease states, conditions, and illnesses that may have nutritional impact.

Patient/client OR family nutrition-oriented medical/health history (2.1)

Specify issue(s) and whether it is patient/client history (P) or family history (F)

☐ Patient/client chief nutrition complaint (specify) _____	CH-2.1.1	10386
☐ Cardiovascular (specify) _____	CH-2.1.2	10387
☐ Endocrine/metabolism (specify) _____	CH-2.1.3	10388
☐ Excretory (specify) _____	CH-2.1.4	10389

Patient/client OR family nutrition-oriented medical/health history (2.1), cont'd

Specify issue(s) and whether it is patient/client history (P) or family history (F)

☐ Gastrointestinal (specify) _____	CH-2.1.5	10390
☐ Gynecological (specify) _____	CH-2.1.6	10391
☐ Hematology/oncology (specify) _____	CH-2.1.7	10392
☐ Immune (e.g., food allergies) (specify) _____	CH-2.1.8	10393
☐ Integumentary (specify) _____	CH-2.1.9	10394
☐ Musculoskeletal (specify) _____	CH-2.1.10	10395
☐ Neurological (specify) _____	CH-2.1.11	10396
☐ Psychological (specify) _____	CH-2.1.12	10397
☐ Respiratory (specify) _____	CH-2.1.13	10398
☐ Other (specify) _____	CH-2.1.14	10399

Treatments/therapy (2.2)

Documented medical or surgical treatments that may impact nutritional status of the patient

☐ Medical treatment/therapy (specify) _____	CH-2.2.1	10401
☐ Surgical treatment (specify) _____	CH-2.2.2	10402
☐ Palliative/end-of-life care (specify) _____	CH-2.2.3	10404

Social History (3)

Patient/client socioeconomic status, housing situation, medical care support and involvement in social groups.

Social history (3.1)

☐ Socioeconomic factors (specify) _____	CH-3.1.1	10407
☐ Living/housing situation (specify) _____	CH-3.1.2	10408
☐ Domestic issues (specify) _____	CH-3.1.3	10409
☐ Social and medical support (specify) _____	CH-3.1.4	10410
☐ Geographic location of home (specify) _____	CH-3.1.5	10411
☐ Occupation (specify) _____	CH-3.1.6	10412
☐ Religion (specify) _____	CH-3.1.7	10413
☐ History of recent crisis (specify) _____	CH-3.1.8	10414
☐ Daily stress level	CH-3.1.9	10415

COMPARATIVE STANDARDS (CS)

Energy Needs (1)

Estimated energy needs (1.1)

☐ Total energy estimated needs	CS-1.1.1	10419
☐ Method for estimating needs	CS-1.1.2	10420

Macronutrient Needs (2)

Estimated fat needs (2.1)

☐ Total fat estimated needs	CS-2.1.1	10423
☐ Type of fat needed	CS-2.1.2	10424
☐ Method for estimating needs	CS-2.1.3	10425

Estimated protein needs (2.2)

☐ Total protein estimated needs	CS-2.2.1	10427
☐ Type of protein needed	CS-2.2.2	10428
☐ Method for estimating needs	CS-2.2.3	10429

Nutrition Assessment and Monitoring and Evaluation Terminology, cont'd

Estimated carbohydrate needs (2.3)

☐ Total carbohydrate estimated needs	CS-2.3.1	10431
☐ Type of carbohydrate needed	CS-2.3.2	10432
☐ Method for estimating needs	CS-2.3.3	10433

Estimated fiber needs (2.4)

☐ Total fiber estimated needs	CS-2.4.1	10435
☐ Type of fiber needed	CS-2.4.2	10436
☐ Method for estimating needs	CS-2.4.3	10437

Fluid Needs (3)

Estimated fluid needs (3.1)

☐ Total fluid estimated needs	CS-3.1.1	10440
☐ Method for estimating needs	CS-3.1.2	10441

Micronutrient Needs (4)

Estimated vitamin needs (4.1)

☐ A (1)	10444	☐ Niacin (8)	10451
☐ C (2)	10445	☐ Folate (9)	10452
☐ D (3)	10446	☐ B6 (10)	10453
☐ E (4)	10447	☐ B12 (11)	10454
☐ K (5)	10448	☐ Pantothenic acid (12)	10455
☐ Thiamin (6)	10449	☐ Biotin (13)	10456
☐ Riboflavin (7)	10450	☐ Method for estimating needs (14)	10458

Estimated mineral needs (4.2)

☐ Calcium (1)	10460	☐ Copper (11)	10471
☐ Chloride (2)	10461	☐ Iodine (12)	10473
☐ Iron (3)	10462	☐ Selenium (13)	10474
☐ Magnesium (4)	10463	☐ Manganese (14)	10475
☐ Potassium (5)	10464	☐ Chromium (15)	10476
☐ Phosphorus (6)	10465	☐ Molybdenum (16)	10477
☐ Sodium (7)	10466	☐ Boron (17)	10478
☐ Zinc (8)	10467	☐ Cobalt (18)	10479
☐ Sulfate (9)	10469	☐ Method for estimating needs (19)	10480
☐ Fluoride (10)	10470		

Weight and Growth Recommendation (5)

Recommended body weight/body mass Index/growth (5.1)

☐ Ideal/reference body weight (IBW)	CS-5.1.1	10483
☐ Recommended body mass index (BMI)	CS-5.1.2	10484
☐ Desired growth pattern	CS-5.1.3	10485

Dietary Reference Intakes (DRIs) Interpretation

Purpose

This section provides guidance to food and nutrition professionals in the United States, Canada, and other countries who use the Dietary Reference Intakes (DRIs) on how to appropriately use the DRIs. Since all DRIs are for healthy individuals in a particular life stage and gender group, they may not be applicable reference standards for all clinical scenarios (1).

Application in the Nutrition Care Process

DRIs can be used to evaluate a “healthy” individual’s “usual” intake. Usual intake should reflect long-term average intake over many days; if intake is reported for a small number of days, then the probability of adequacy should be interpreted with caution (1). However, assessment in the context of the Nutrition Care Process often involves an individual patient/client whose intake is not “usual” and/or who is not “healthy.”

Therefore, when assessing the adequacy of intake for a patient/client, the food and nutrition professional will need to use clinical judgment to determine adequacy with special consideration for the following two factors:

- Intake may not be “usual” and/or
- Patient may not be “healthy”

Intake May Not Be Usual

The ability and appropriateness of assessing “usual” intake will vary depending on the specific circumstances and may be independent of the care setting.

For example, to evaluate current nutritional status in an acute care setting, it may be necessary to assess current intake (e.g., nutrition support for a trauma patient) or “usual” intake prior to admission (e.g., cystic fibrosis patient/client). Assessing “usual” intake may be appropriate and achievable for the long-term care resident. Additionally, in the ambulatory care setting, “usual” intake will generally be used, but sometimes it may be more appropriate to assess intake since the beginning of an event, such as a new-onset disease diagnosis.

If a patient/client’s estimated intake is less than normally recommended for a healthy individual, then the determination of suboptimal nutrient intake(s) based on a comparison with the DRI will need to be carefully evaluated given the specific circumstances.

Patient/Client May Not Be Healthy

The DRIs are based on recommendations for apparently healthy individuals. However, when a patient/client has an illness, injury, disease, or other medical condition, he or she may no longer be considered healthy. Therefore, the DRIs may not be the most appropriate reference standard to assess intake adequacy for individuals with altered nutrient requirements due to one or more medical condition. However, if no other reference standard exists, it may be safe to assume in most situations that a patient/client’s intake goal/nutrition prescription should not be below the appropriate DRI (Recommended Dietary Allowance [RDA] or Adequate Intake [AI]) so long as the potential for altered nutrient requirements is considered.

In summary, although intake data and recommendations are estimates, assessing intake is still worthwhile and may identify nutrients either under- or overconsumed by individuals. To increase dietary assessment accuracy, ensure that dietary data are as complete as possible, portions are correctly specified, and food composition data are accurate. Whenever possible, nutrient intake data should be considered in combination with clinical, biochemical, and anthropometric information, medical diagnosis, clinical status, and/or other factors as well as diet to provide a valid assessment of nutritional status based on a totality of the evidence.

What Are the DRIs?

The DRIs are four categories of reference values set when adequate evidence-based information is available about nutrients or food components (1).

- **Estimated Average Requirement (EAR)**—Mean requirement for a nutrient or the average daily nutrient intake level estimated to meet the requirement of half of the healthy individuals in a particular life stage and gender group.
- **Recommended Dietary Allowance (RDA)**—Recommended intake or the average daily nutrient intake level sufficient to meet the nutrient requirement of 97% to 98% of individuals in a particular life stage and gender group.
- **Adequate Intake (AI)**—*Recommended intake*—A recommended intake level based on observed or experimentally determined approximations or estimates of nutrient intake by a group (or groups) of healthy people that are assumed to be adequate; used when an RDA cannot be determined.
- **Tolerable Upper Intake Level (UL)**—The highest average daily nutrient intake level likely to pose no risk of adverse health effects to almost all individuals in the general population. As intake increases above the UL, the risk of adverse effects increases.

When the DRIs are determined to be appropriate reference standards for assessing intake adequacy, the following must be considered (2):

Assessing the intake of healthy individuals in a specific life stage and gender category (2)	
DRI	
RDA	For nutrients with an RDA, estimated usual intakes at or above the RDA have a high probability of adequacy.
EAR	For nutrients with an EAR, estimated usual intakes below the EAR very likely need to be improved (because the probability of adequacy is 50% or less); those between the EAR and the RDA probably need to be improved (because the probability of adequacy is less than 97% to 98%).
AI	For nutrients with an AI, estimated usual intakes at or above the AI can be considered adequate. Although the adequacy of intakes below the AI cannot be determined, they should be improved to meet the AI.
UL	For nutrients with a UL, estimated usual intakes below the UL can be considered to be not at risk for toxicity.

Assessing the intake of a group (3)	
DRI	
RDA	Do not use to assess intakes of groups.
EAR	For nutrients with an EAR, use the EAR to assess the prevalence of inadequate intakes or the proportion of a population that has estimated usual intakes below median requirements. Choose between two methods- the probability approach or the EAR cut-point method.
AI	For nutrients with an AI, estimated mean intakes at or above this level implies a low prevalence of inadequate intakes. However, when estimated mean intakes of groups are below the AI, it is not possible to make any assumptions about the prevalence of inadequacy.
UL	For nutrients with a UL, estimated usual intakes above the UL are used to estimate the percentage of the population at risk of adverse effects from excessive nutrient intake.

NOTE: For statistical calculation methods, see reference 1.

References

1. Institute of Medicine. *Dietary Reference Intakes: Applications in Dietary Assessment*. Washington, DC:National Academies Press; 2000.
2. Barr SI, Murphy SP, Poos MI. Interpreting and using the dietary reference intakes in dietary assessment of individuals and groups. *J Am Diet Assoc*. 2002; 102:780-788.
3. Murphy SP, Poos MI. Dietary Reference Intakes: Summary of applications in dietary assessment. *Public Health Nutr*. 2002;5:843-849.

Other Reference Intakes Interpretation

Purpose

This section offers guidance to food and nutrition professionals in countries that use dietary reference intake standards other than the Dietary Reference Intakes (DRIs).

Application in the Nutrition Care Process

An appropriate, alternate dietary reference intake standard to the U.S. and Canadian Dietary Reference Intakes (DRI) can be used to evaluate a “healthy” individual’s “usual” intake. Usual intake should reflect long-term average intake over many days; if intake is reported for a small number of days, then the probability of adequacy should be interpreted with caution or as advised within the dietary reference intake standards. However, assessment in the context of the Nutrition Care Process often involves an individual patient/client whose intake is not “usual” and/or who is not “healthy.”

Therefore, when assessing adequacy of intake for a patient/client, the food and nutrition professional will need to use clinical judgment to determine adequacy with special consideration for the following two factors:

- Intake may not be “usual” and/or
- Patient may not be “healthy”

Intake May Not Be Usual

The ability and appropriateness of assessing usual intake will vary depending on the specific circumstances and may be independent of the care setting.

For example, in an acute care setting, it may be necessary to assess current intake (e.g., nutrition support for a trauma patient) or usual intake prior to admission in order to evaluate current nutritional status (e.g., cystic fibrosis patient/client). Assessing usual intake may be appropriate and achievable for the long-term care resident. Additionally, in the ambulatory care setting, while usual intake will generally be used, it may be more appropriate to assess intake since the beginning of an event, such as a new-onset disease diagnosis.

If a patient/client’s estimated intake is less than normally recommended for a healthy individual, then the determination of suboptimal nutrient intake(s) based on a comparison with the alternate dietary reference intake standard will need to be carefully evaluated given the specific circumstances.

Patient/Client May Not Be Healthy

Dietary reference intake standards are generally based on recommendations for apparently healthy individuals. However, when a patient/client has an illness, injury, disease, or other medical condition, he or she may no longer be considered healthy. Therefore, dietary reference intake standards may not be the most appropriate reference standards to assess intake adequacy for individuals with altered nutrient requirements due to one or more medical condition. However, if no other reference standard exists, it may be safe to assume in most situations that a patient/client’s intake goal/nutrition prescription should not be below the appropriate dietary reference intake standard as long as the potential for altered nutrient requirements is considered.

In summary, although intake data and recommendations are estimates, assessing intake is still worthwhile and may identify nutrients either under- or overconsumed by individuals. To increase dietary assessment accuracy, ensure that dietary data are as complete as possible, portions are correctly specified, and food composition data are accurate. Whenever possible, nutrient intake data should be considered in combination with clinical, biochemical, anthropometric information, medical diagnosis, clinical status and/or other factors as well as diet to provide a valid assessment of nutritional status based on a totality of the evidence.

Nutrition Assessment and/or Nutrition Monitoring and Evaluation Terms and Definitions

Term	Term Number	Definition	Pages
DOMAIN: FOOD/ NUTRITION-RELATED HISTORY	FH	Food and nutrient intake, food and nutrient administration, medication and complementary/alternative medicine supplement use, knowledge/beliefs/attitudes, behavior, food and supply availability, physical activity and function, and nutrition-related patient/client-centered measures	
<i>Class: Food and Nutrient Intake (1)</i>		Composition and adequacy of food and nutrient intake, meal and snack patterns, current and previous diets and/or food modifications, and eating environment	
Subclass: Energy Intake (1.1)		Total energy intake from all sources including food, beverages, breastmilk/formula, supplements, and via enteral and parenteral routes	
Energy intake	FH-1.1.1	Amount of energy intake from all sources, e.g., food, beverages, supplements, and via enteral and parenteral routes	93-94
Subclass: Food and Beverage Intake (1.2)		Type, amount, and pattern of intake of foods and food groups, indices of diet quality, intake of fluids, breastmilk and infant formula	
Fluid/beverage intake	FH-1.2.1	Amount and type of fluid/beverage intake consumed orally	95-96
Food intake	FH-1.2.2	Amount, type, and pattern of food consumed and quality of diet	97-99
Breastmilk/infant formula intake	FH-1.2.3	Amount of breastmilk, and/or the amount, type, and concentration on infant formula consumed orally	100-102
Subclass: Enteral and Parenteral Intake (1.3)		Nutrition support intake from all sources including enteral and parenteral routes	
Enteral nutrition intake	FH-1.3.1	Amount or type of enteral nutrition intake provided via a tube	103-104
Parenteral nutrition/ IV fluid intake	FH-1.3.2	Amount or type of parenteral nutrition or fluids provided intravenously	105-106
Subclass: Bioactive Substances Intake (1.4)		Alcohol, plant stanol and sterol esters, soy protein, psyllium and β -glucan, and caffeine intake from all sources including food, beverages, supplements and via enteral and parenteral routes	
Alcohol intake	FH-1.4.1	Amount and pattern of alcohol consumption	107-108
Bioactive substance intake	FH-1.4.2	Amount and type of bioactive substances consumed	109-110
Caffeine intake	FH-1.4.3	Amount of caffeine intake from all sources, e.g., food, beverages, supplements, medications, and via enteral and parenteral routes	111-112

Term	Term Number	Definition	Pages
Subclass: Macronutrient Intake (1.5)		Fat and cholesterol, protein, carbohydrate, and fiber intake from all sources including food, beverages, supplements, and via enteral and parenteral routes	
Fat and cholesterol intake	FH-1.5.1	Fat and cholesterol consumption from all sources, e.g., food, beverages, supplements, and via enteral and parenteral routes	113-114
Protein intake	FH-1.5.2	Protein intake from all sources, e.g., food, beverages, supplements, and via enteral and parenteral routes	115-116
Carbohydrate intake	FH-1.5.3	Carbohydrate consumption from all sources, e.g., food, beverages, supplements, and via enteral and parenteral routes	117-118
Fiber intake	FH-1.5.4	Amount and/or type of plant source matter consumed that is not completely digested, but may be at least partially fermented in the distal bowel, and is derived from all sources, e.g., food, beverages, supplements, and via enteral routes	119-120
Subclass: Micronutrient Intake (1.6)		Vitamin and mineral intake from all sources, e.g., foods, beverages, supplements, and enteral and parenteral routes	
Vitamin intake	FH-1.6.1	Vitamin intake from all sources, e.g., food, beverages, supplements, and via enteral and parenteral routes	121-122
Mineral/element intake	FH-1.6.2	Mineral/element intake from all sources, e.g., food, beverages, supplements, and via enteral and parenteral routes	123-124
Class: Food and Nutrient Administration (2)		Current and previous diets and/or food modifications, eating environment, and enteral and parenteral nutrition administration.	
Subclass: Diet History (2.1)		Description of food and drink regularly provided or consumed, past diets followed or prescribed and counseling received, and the eating environment.	
Diet order	FH-2.1.1	A general or modified diet prescribed and documented in a patient/client medical record by a credentialed provider as part of a medical treatment plan	125-126
Diet experience	FH-2.1.2	Previous nutrition/diet orders, diet education/counseling, and diet characteristics that influence patient/client's dietary intake	127-128
Eating environment	FH-2.1.3	The aggregate of surrounding things, conditions, or influences that affect food intake	129-130
Enteral and parenteral nutrition administration	FH-2.1.4	Delivery of enteral and/or parenteral nutrition.	131-132
Class: Medication and Complementary/Alternative Medicine Use (3)		Prescription and over-the-counter medications, including herbal preparations and complementary/alternative medicine products used	
Medications	FH-3.1	Prescription and over-the-counter (OTC) medications that may impact nutritional status	133-134

Term	Term Number	Definition	Pages
Complementary/alternative medicine	FH-3.2	Complementary and alternative medicine products, including herbal preparations that may impact nutritional status	135-136
<i>Class: Knowledge/Beliefs/Attitudes (4)</i>		Understanding of nutrition-related concepts and conviction of the truth and feelings/emotions toward some nutrition-related statement or phenomenon, along with readiness to change nutrition-related behaviors	
Food and nutrition knowledge/skill	FH-4.1	Content areas and level of understanding about food, nutrition and health, or nutrition-related information and guidelines relevant to patient/client needs	137-139
Beliefs and attitudes	FH-4.2	Conviction of the truth of some nutrition-related statement or phenomenon, and feelings or emotions toward that truth or phenomenon, along with a patient/client's readiness to change food, nutrition, or nutrition-related behaviors	140-142
<i>Class: Behavior (5)</i>		Patient/client activities and actions that influence achievement of nutrition-related goals	
Adherence	FH-5.1	Level of compliance or adherence with nutrition-related recommendations or behavioral changes agreed upon by patient/client to achieve nutrition-related goals	143-144
Avoidance behavior	FH-5.2	Keeping away from something or someone to postpone an outcome or perceived consequence	145-146
Bingeing and purging behavior	FH-5.3	Eating a larger amount of food than normal for the individual during a short period of time (within any two hour period) accompanied by a lack of control over eating during the binge episode (i.e., the feeling that one cannot stop eating). This may be followed by compensatory behavior to make up for the excessive eating, referred to as purging.	147-148
Mealtime behavior	FH-5.4	Manner of acting, participating or behaving at mealtime which influences patient/client's food and beverage intake	149-150
Social network	FH-5.5	Ability to build and utilize a network of family, friends, colleagues, health professionals, and community resources for encouragement, emotional support and to enhance one's environment to support behavior change	151-152
<i>Class: Factors Affecting Access to Food and Food/Nutrition-Related Supplies (6)</i>		Factors that affect intake and availability of a sufficient quantity of safe, healthful food as well as food/nutrition-related supplies.	
Food/nutrition program participation	FH-6.1	Patient/client eligibility for and participation in food assistance programs	153-154
Safe food/meal availability	FH-6.2	Availability of enough healthful, safe food	155-156
Safe water availability	FH-6.3	Availability of potable water	157-158
Food/nutrition-related supplies availability	FH-6.4	Access to necessary food/nutrition-related supplies	159-160

Term	Term Number	Definition	Pages
Class: Physical Activity and Function (7)		Physical activity, cognitive and physical ability to engage in specific tasks, e.g., breastfeeding and self-feeding	
Breastfeeding	FH-7.1	Degree to which breastfeeding plans and experience meet nutritional and other needs of the infant and mother	161-162
Nutrition-Related ADLs (<i>activities of daily living</i>) and IADLs (<i>instrumental activities of daily living</i>)	FH-7.2	Level of cognitive and physical ability to perform nutrition-related activities of daily living and instrumental activities of daily living by older and/or disabled persons	163-164
Physical activity	FH-7.3	Level of physical activity and/or amount of exercise performed	165-166
Factors affecting access to physical activity	FH-7.4	Factors influencing access to physical activity opportunities and physical activity participation	167-168
Class: Nutrition-Related Patient/Client-Centered Measures (8)		Patient/client's perception of his or her nutrition intervention and its impact on life	
Nutrition quality of life	FH-8.1	Extent to which the Nutrition Care Process impacts a patient/client's physical, mental and social well-being related to food and nutrition	169-170
DOMAIN: ANTHROPOMETRIC MEASUREMENTS	AD	Height, weight, body mass index (BMI), growth pattern indices/percentile ranks, and weight history.	
Body composition/growth/weight history	AD-1.1	Measures of the body, including fat, muscle, and bone components and growth	171-173
DOMAIN: BIOCHEMICAL DATA, MEDICAL TESTS AND PROCEDURES	BD	Laboratory data, (e.g., electrolytes, glucose, and lipid panel) and tests (e.g., gastric emptying time, resting metabolic rate).	
Acid-base balance	BD-1.1	Balance between acids and bases in the body fluids. The pH (hydrogen ion concentration) of the arterial blood provides an index for the total body acid-base balance.	174-175
Electrolyte and renal profile	BD-1.2	Laboratory measures associated with electrolyte balance and kidney function	176-177
Essential fatty acid profile	BD-1.3	Laboratory measures of essential fatty acids	178
Gastrointestinal profile	BD-1.4	Laboratory measures and medical tests associated with function of the gastrointestinal tract and related organs	179-180
Glucose/endocrine profile	BD-1.5	Laboratory measures associated with glycemic control and endocrine findings	181-182
Inflammatory profile	BD-1.6	Laboratory measures of inflammatory proteins	183
Lipid profile	BD-1.7	Laboratory measures associated with lipid disorders	184-185
Metabolic rate profile	BD-1.8	Measures associated with or having implications for assessing metabolic rate	186-187
Mineral profile	BD-1.9	Laboratory measures associated with body mineral status	188-189
Nutritional anemia profile	BD-1.10	Laboratory measures associated with nutritional anemias	190-191

Term	Term Number	Definition	Pages
DOMAIN: BIOCHEMICAL DATA, MEDICAL TESTS AND PROCEDURES, cont'd	BD	Laboratory data, (e.g., electrolytes, glucose, lipid panel and gastric emptying time) and tests (e.g., gastric emptying time, resting metabolic rate).	
Protein profile	BD-1.11	Laboratory measures associated with hepatic and circulating proteins	192-193
Urine profile	BD-1.12	Physical and/or chemical properties of urine	194-195
Vitamin profile	BD-1.13	Laboratory measures associated with body vitamin status	196-197
DOMAIN: NUTRITION-FOCUSED PHYSICAL FINDINGS	PD	Findings from an evaluation of body systems, muscle and subcutaneous fat wasting, oral health, suck/swallow/breathe ability, appetite, and affect.	
Nutrition-focused physical findings	PD-1.1	Nutrition-related physical characteristics associated with pathophysiological states derived from a nutrition-focused physical exam, interview, or the medical record	198-200
DOMAIN: CLIENT HISTORY <i>Note: This domain is used for nutrition assessment only.</i>	CH	Current and past information related to personal, medical, family, and social history.	
Class: Personal History (1)		General patient/client information such as age, gender, race/ethnicity, language, education, and role in family	
Personal data	CH-1.1	General patient/client information such as age, gender race/ethnicity, occupation, tobacco use, and physical disability	201-202
Class: Patient/Client/Family Medical/Health History (2)		Patient/client or family disease states, conditions, and illnesses that may have a nutritional impact	
Patient/client OR family nutrition-oriented medical/health history	CH-2.1	Patient/client or family member disease states, conditions, and illnesses that may impact nutritional status	203-204
Treatments/therapy	CH-2.2	Documented medical or surgical treatments that may impact nutritional status of the patient	205-206
Class: Social History (3)		Patient/client socioeconomic factors, housing situation, medical care support and involvement in social groups	
Social history	CH-3.1	Patient/client information such as socioeconomic factors, housing situation, medical support, occupation, religion, history of recent crisis, and involvement in social groups	207-208

Energy Intake (FH-1.1.1)

Definition

Amount of energy intake from all sources, e.g., food, beverages, breastmilk/formula, supplements, and via enteral and parenteral routes

Note: Whenever possible, nutrient intake data should be considered in combination with clinical, biochemical, anthropometric information, medical diagnosis, clinical status, and/or other factors as well as diet to provide a valid assessment of nutritional status based on a totality of the evidence. (Institute of Medicine. Dietary Reference Intakes: Applications in Dietary Assessment. Washington, DC: National Academies Press; 2000.)

Nutrition Assessment and Monitoring and Evaluation

Indicators

Total energy intake (specify, e.g., calories, kcal or kJ/day, calories, kcal or kJ/kg/day)

Note: Weight and weight change can be found on the Body Composition/Growth/Weight History reference sheet.

Examples of the measurement methods or data sources for these indicators: Food intake records, 24-hour recall, 3 to 5 day food diary, food frequency questionnaire, caretaker intake records, menu analysis, intake and output records

Typically used with the following domains of nutrition interventions: Food and/or nutrient delivery, nutrition education, nutrition counseling, coordination of nutrition care

Typically used to determine and to monitor and evaluate change in the following nutrition diagnoses: Inadequate energy intake, excessive energy intake, evident protein-calorie malnutrition, inadequate protein-energy intake, underweight, involuntary weight loss, overweight/obesity, involuntary weight gain, swallowing difficulty, breastfeeding difficulty, altered GI function, limited adherence to nutrition-related recommendations

Clinical judgment must be used to select indicators and determine the appropriate measurement techniques and reference standards for a given patient population and setting. Once identified, these indicators, measurement techniques, and reference standards should be identified in policies and procedures or other documents for use in patient/client records, quality or performance improvement, or in formal research projects.

Evaluation

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal (tailored to individual's needs)
OR
- 2) Reference Standard (estimated or measured energy requirement)

Patient/Client Example

Indicator(s) Selected

Total energy intake

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal: Food diary indicates patient/client consumes approximately 2600 calories/kcal (10,885 kJ) per day. Patient/client's target caloric intake level is 1800 calories/ kcal (7540 kJ) per day.
OR
- 2) Reference Standard: Patient/client's I & O indicates patient/client's intake at approximately 2000 calories/kcal (8375kJ) per day, 80% of goal based on an estimated energy requirement of 2500 calories/kcal (10465 kJ) per day.

Energy Intake (FH-1.1.1)

Sample Nutrition Assessment and Monitoring and Evaluation Documentation

<i>Initial encounter with patient/client</i>	Based on patient/client food diary, patient/client consuming approximately 2600 calories/kcal (10,885 kJ) per day, 144% of recommended level of 1800 calories/kcal (7540 kJ) per day. Will evaluate calorie intake at next encounter in two weeks.
<i>Reassessment after nutrition intervention</i>	Significant progress toward meeting goal. Based on patient/client food diary, patient/client consuming approximately 2100 calories/kcal (8790 kJ) per day, 117% of recommended level of 1800 calories/kcal (7540 kJ) per day. Will evaluate calorie intake at next encounter in two weeks.

References

The following are some suggested references for indicators, measurement techniques, and reference standards for the outcome; other references may be appropriate.

1. Institute of Medicine, Food and Nutrition Board. Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein and Amino Acids. Washington, DC: National Academies Press; 2002.
Available at: www.iom.edu/Object.File/Master/21/372/DRI%20Tables%20after%20electrolytes%20plus%20micro-macroEAR_2.pdf
2. Frankenfield D, Roth-Yousey L, Compher C. Comparison of predictive equations for resting metabolic rate in healthy nonobese adults: A systematic review. *J Am Diet Assoc.* 2005;105:775-789.
3. Charney P, Malone A. *ADA Pocket Guide to Nutrition Assessment*. 2nd ed. Chicago, IL: American Dietetic Association; 2009.
4. Compher C, Frankenfield D, Keim N, Roth-Yousey L. Best practice methods to apply to measurement of resting metabolic rate in adults: A systematic review. *J Am Diet Assoc.* 2006;106:881-903.
5. Academy of Nutrition and Dietetics. Evidence Analysis Library. Measuring versus estimating resting metabolic rate. Available at: <http://www.andevidencelibrary.com/topic.cfm?cat=2693&highlight=Resting%20Metabolic%20Rate&home=1&library=EBG>. Accessed April 13, 2010.
6. American Society for Parenteral and Enteral Nutrition Board of Directors and The Clinical Guidelines Task Force. Guidelines for the use of parenteral and enteral nutrition in adult and pediatric patients: life cycle and metabolic conditions. *J Parenter Enteral Nutr.* 2002; 26(Suppl):S45-S60.
7. American Society for Parenteral and Enteral Nutrition Board of Directors and The Clinical Guidelines Task Force. Guidelines for the use of parenteral and enteral nutrition in adult and pediatric patients: specific guidelines for disease—adults. *J Parenter Enteral Nutr.* 2002; 26(Suppl):S61-S96.
8. American Society for Parenteral and Enteral Nutrition Board of Directors and The Clinical Guidelines Task Force. Guidelines for the use of parenteral and enteral nutrition in adult and pediatric patients: specific guidelines for disease—pediatrics. *J Parenter Enteral Nutr.* 2002;26(Suppl):S111-S138.
9. US Departments of Agriculture and Health and Human Services. Dietary Guidelines for Americans 2010. Available at: <http://www.cnpp.usda.gov/dietaryguidelines.htm>. Accessed: January 24, 2012.
10. Academy of Nutrition and Dietetics. Nutritional Care Manual. Available at: www.nutritioncaremanual.org. Accessed January 26, 2012.

Updated: 2013 Edition

Fluid/Beverage Intake (FH-1.2.1)

Definition

Amount and type of fluid/beverage intake consumed orally

Note: Whenever possible, nutrient intake data should be considered in combination with clinical, biochemical, anthropometric information, medical diagnosis, clinical status, and/or other factors as well as diet to provide a valid assessment of nutritional status based on a totality of the evidence. (Institute of Medicine. Dietary Reference Intakes: Applications in Dietary Assessment. Washington, DC: National Academies Press; 2000.)

Nutrition Assessment and Monitoring and Evaluation

Indicators

Oral fluid (specify, e.g., oz, or mL or cups/day and type)

- Water
- Coffee and tea
- Juice
- Milk
- Soda (specify regular or artificially sweetened)

Food-derived fluids (e.g., 3 oz (90 mL) fluid in 4 oz (120 mL) apple sauce) (mL/day)

Liquid meal replacement or supplement (e.g., oz, or mL/day and name/description)

Note: Biochemical measures of hydration status are found on the Electrolyte and Renal Profile and the Urine Profile reference sheets.

Examples of the measurement methods or data sources for these indicators: Food intake records, 24-hour recall, food frequency questionnaire, intake and output data, observation

Typically used with the following domains of nutrition interventions: Food and/or nutrient delivery, nutrition education, nutrition counseling, coordination of nutrition care

Typically used to determine and to monitor and evaluate change in the following nutrition diagnoses:

Excessive or inadequate oral food/beverage intake, food–medication interaction, underweight, overweight/obesity, involuntary weight loss, involuntary weight gain, disordered eating pattern, undesirable food choices, limited adherence to nutrition-related recommendations, inability or lack of desire to manage self-care, swallowing difficulty, breastfeeding difficulty, altered GI function

Clinical judgment must be used to select indicators and determine the appropriate measurement techniques and reference standards for a given patient population and setting. Once identified, these indicators, measurement techniques, and reference standards should be identified in policies and procedures or other documents for use in patient/client records, quality or performance improvement, or in formal research projects.

Evaluation

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal (tailored to patient/client's needs)
- OR
- 2) Reference Standard

Patient/Client Example(s)

Example(s) of one or two of the Nutrition Care Indicators (includes sample initial and reassessment documentation for one of the indicators)

Indicator(s) Selected

Oral fluid amounts

Fluid/Beverage Intake (FH-1.2.1)

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal: Patient/client currently drinks 33 oz (1000 mL) of fluid per day and has a personal goal of consuming 64 oz (1920 mL) of fluid per day.
OR
- 2) Reference Standard: No validated standard exists.

Sample Nutrition Assessment and Monitoring and Evaluation Documentation

<i>Initial nutrition assessment with patient/client</i>	Based on patient/client food diary, patient/client consuming approximately 1000 mL fluid per day. Goal is to consume approximately 3000 mL/day. Will monitor fluid intake at next encounter.
<i>Reassessment after nutrition intervention</i>	Significant progress toward recommended fluid intake. Based on fluid intake records, patient/client increased consumption of fluids from 1000 mL to 2600 mL per day.

References

The following are some suggested references for indicators, measurement techniques, and reference standards for the outcome; other references may be appropriate.

1. Institute of Medicine. *Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein and Amino Acids*. Washington, DC: National Academies Press; 2002.
2. American Society for Parenteral and Enteral Nutrition Board of Directors and the Clinical Guidelines Task Force. Guidelines for the use of parenteral and enteral nutrition in adult and pediatric patients: specific guidelines for disease—adults. *J Parenter Enteral Nutr*. 2002; 26(Suppl):S61-S96.
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4. American Society for Parenteral and Enteral Nutrition Board of Directors and the Clinical Guidelines Task Force. Guidelines for the use of parenteral and enteral nutrition in adult and pediatric patients: specific guidelines for disease—pediatrics. *J Parenter Enteral Nutr*. 2002;26(Suppl):S111-S138.
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6. American College of Sports Medicine [website]. Available at: <http://www.acsm.org>.
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8. American Dietetic Association. *Nutrition Care of the Older Adult*. 2nd ed. Chicago, IL: American Dietetic Association; 2004.
9. Consultant Dietitians in Health Care Facilities Dietetic Practice Group. *Nutrition Management and Restorative Dining for Older Adults*. Chicago, IL: American Dietetic Association; 2001.

Updated: 2011 Edition

Food Intake (FH-1.2.2)

Definition

Amount, type, and pattern of food consumed and quality of diet

Note: Whenever possible, nutrient intake data should be considered in combination with clinical, biochemical, anthropometric information, medical diagnosis, clinical status, and/or other factors as well as diet to provide a valid assessment of nutritional status based on a totality of the evidence. (Institute of Medicine. Dietary Reference Intakes: Applications in Dietary Assessment. Washington, DC: National Academies Press; 2000.)

Nutrition Assessment and Monitoring and Evaluation

Indicators

Amount of food

- Grains (servings, cups/dL/mL, ounces/g)
- Fruits (servings/piece, cups/dL, ounces/g)
- Vegetables (servings/piece, cups/dL, ounces/g)
- Fruit and vegetable (servings/piece, cups/dL, ounces/g)
- Milk/milk products (servings, cups/dL/mL, ounce/g)
- Meat, poultry, fish, eggs, beans, nut products (servings/piece, cups/dL, ounces/g, teaspoon/tablespoon/mL)
- Fat and oils (servings, teaspoons/mL/g)
- Concentrated sweets (servings, ounces/g)
- Percent total meal eaten (percent)

Types of food/meals

- Fortified/enriched foods (specify, e.g., amount or servings calcium-fortified orange juice)
- Special dietary products or foods (specify, e.g., servings/day or week, and type, e.g., non-nutritive sweeteners, lactose-free, gluten-free)
- Ready to eat food selections (e.g., type and number/day or week)
- Convenience frozen meals (e.g., type and number/day or week)
- Self-prepared foods/snacks (specify type e.g., low or high in sodium, fat, fiber)

Note: Liquid meal replacements/supplements are found on the Fluid Intake reference sheet.

** Snack is defined as food served between regular meals.*

Meal/snack* pattern

- Number of meals (number/day)
- Number of snack(s) (number/day)

Diet (food and beverages) Quality Index

- Healthy Eating Index (HEI)
- Children's Diet Quality Index (C-DQI)
- Revised Children's Diet Quality Index (RC-DQI)
- Other (specify)

Food variety (present/absent)

Examples of the measurement methods or data sources for these indicators: Food intake records, 24-hour recall, food frequency questionnaire, menu analysis, dietary and physical activity assessment tool (e.g., MyPlate SuperTracker), diet quality index (e.g., Healthy Eating Index, C-DQI, RC-DQI) or other reference intake standard tool

Typically used with the following domains of nutrition interventions: Food and/or nutrient delivery, nutrition education, nutrition counseling, coordination of nutrition care

Food Intake (FH-1.2.2)

Typically used to determine and to monitor and evaluate change in the following nutrition diagnoses:

Excessive or inadequate oral food/beverage intake, food–medication interaction, underweight, overweight/obesity, disordered eating pattern, involuntary weight gain, involuntary weight loss, undesirable food choices, limited adherence to nutrition-related recommendations, inability or lack of desire to manage self-care, limited access to food, intake of unsafe food, inadequate or excessive energy, macronutrient or micronutrient intake

Clinical judgment must be used to select indicators and determine the appropriate measurement techniques and reference standards for a given patient population and setting. Once identified, these indicators, measurement techniques, and reference standards should be identified in policies and procedures for use in patient/client records, quality or performance improvement, or in formal research projects.

Evaluation

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal (tailored to patient/client needs)
OR
- 2) Reference Standard

Patient/Client Example(s)

Example(s) of one or two of the Nutrition Care Indicators (includes sample initial and reassessment documentation for one of the indicators)

Indicator(s) Selected

Amount of food

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal: Patient/client currently eats approximately 1 to 2 servings of fruits and vegetables per day. Goal is to increase fruit and vegetable intake to 5 servings per day.
OR
- 2) Reference Standard: Patient/client's current intake of 1 to 2 servings of fruits and vegetables per day is below the DASH Eating Plan recommendation of 9 servings of fruits and vegetables per day.

Sample Nutrition Assessment and Monitoring and Evaluation Documentation

<i>Initial nutrition assessment with patient/client</i>	Based on patient/client recall, patient/client consuming approximately 1 to 2 servings of fruits and vegetables per day. Will monitor fruit and vegetable intake at next encounter.
<i>Reassessment after nutrition intervention</i>	Some progress toward goal of 9 servings of fruits and vegetables per day. Based on food records, patient/client increased consumption of fruits and vegetables from approximately 1 to 4 servings per day.

References

The following are some suggested references for indicators, measurement techniques, and reference standards for the outcome; other references may be appropriate.

1. US Department of Agriculture and Health and Human Services. Dietary Guidelines for Americans 2010. Available at: <http://www.cnpp.usda.gov/dietaryguidelines.htm>. Accessed: January 24, 2012.
2. US Department of Agriculture Human Nutrition Information Service. MyPlate. 2011. Available at: <http://www.choosemyplate.gov>. Accessed January 24, 2012.
3. Academy of Nutrition and Dietetics. Nutrition Care Manual. Available at: www.nutritioncaremanual.org. Accessed January 26, 2012.
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Food Intake (FH-1.2.2)

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Updated: 2013 Edition

Breastmilk*/Infant Formula Intake (FH-1.2.3)

Definition

Amount of breastmilk, and/or the amount, type, and concentration on infant formula consumed orally

Nutrition Assessment and Monitoring and Evaluation

Indicators

Breastmilk intake (adequacy or oz or mL/day, mL/kg, percent recommended intake)

- Number of feedings (feedings/24-hour period)
- Duration of feedings (number of minutes)
- Modifier/supplement (specify, e.g., thickener, lipid, formula, protein)

Infant formula intake (oz or mL/day)

- Type (specify, e.g., brand, cow's milk-based, soy-based, preterm formula, or other specialty with or without DHA and ARA)
- Concentration (specify, e.g., calorie, kcal or kJ/oz or calorie, kcal or kJ /mL)
- Number of feedings (number/day)
- Volume of formula per feeding (oz or mL; amount prepared – amount left in bottle)
- Number and volume or weight of cans of formula used per week (powder, liquid concentrate, or ready to feed)
- Modifier/supplement (specify, e.g., thickener, lipid, formula, protein)

Note: Initiation, duration, exclusivity of breastfeeding and breastfeeding problems can be found on the Breastfeeding reference sheet.

Weight change is found on the Body Composition/Growth/Weight History reference sheet.

Number of wet diapers per day is found on the Urine Profile reference sheet.

Number/consistency of bowel movements is found on the Nutrition-Focused Physical Exam reference sheet.

If provided via tube use the Enteral and Parenteral Nutrition Intake reference sheet.

Examples of the measurement methods or data sources for these indicators: Intake records, 24-hour recall, usual intake recall, observation of feeding (bottle or breast).

Typically used with the following domains of nutrition interventions: Food and/or nutrient delivery, nutrition education, nutrition counseling, coordination of nutrition care.

Typically used to determine and to monitor and evaluate change in the following nutrition diagnoses:

Underweight, overweight, involuntary weight gain, involuntary weight loss, limited adherence to nutrition-related recommendations, inadequate or excessive energy intake, inadequate or excessive food/beverage or fluid intake

Clinical judgment must be used to select indicators and determine the appropriate measurement techniques and reference standards for a given patient population and setting. Once identified, these indicators, measurement techniques, and reference standards should be identified in policies and procedures or other documents for use in patient/client records, quality or performance improvement, or in formal research projects.

Evaluation

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal (tailored to patient/client needs)

OR

- 2) Reference Standard

*If a synonym for the term "breastmilk" is helpful or needed, an approved alternate is "human milk."

Breastmilk/Infant Formula Intake (FH-1.2.3)

Patient/Client Example(s)

Example(s) of one or two of the Nutrition Care Indicators (includes sample initial and reassessment documentation for one of the indicators)

Indicator(s) Selected

Infant formula intake

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal: Patient/client currently consumes approximately 100 mL/kg body weight infant formula per day. Goal is to increase intake to 150 mL/kg per day.
OR
- 2) Reference Standard: Patient/client's current intake of 100 mL/kg/day is below the recommended intake of 150 mL/kg/day to support adequate growth.

Sample Nutrition Assessment and Monitoring and Evaluation Documentation

<i>Initial nutrition assessment with patient/client</i>	Based on mother's recall, patient/client consuming approximately 100 mL/kg/day of infant formula per day, 33% below the recommended level of 150 mL per day. Will monitor formula intake at next encounter.
<i>Reassessment after nutrition intervention</i>	Significant progress toward goal of consuming 150 mL/kg per day. Based on mother's records, patient/client increased consumption of infant formula to approximately 140 mL/kg per day over the past 7 days.

References

The following are some suggested references for indicators, measurement techniques, and reference standards for the outcome; other references may be appropriate.

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Breastmilk/Infant Formula Intake (FH-1.2.3)

References, cont'd

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Updated: 2013 Edition

Enteral Nutrition Intake (FH-1.3.1)

Definition

Amount or type of enteral nutrition provided via a tube.

Note: Whenever possible, nutrient intake data should be considered in combination with clinical, biochemical, anthropometric information, medical diagnosis, clinical status, and/or other factors as well as diet to provide a valid assessment of nutritional status based on a totality of the evidence. (Institute of Medicine. Dietary Reference Intakes: Applications in Dietary Assessment. Washington, DC: National Academies Press; 2000.)

Nutrition Assessment and Monitoring and Evaluation

Indicators

Formula/solution (specify)

- Composition (formula name or description, special additives including supplemental fat, carbohydrate, protein fiber or other (specify))
- Concentration (e.g., calories/kcal/kJ in each mL)
- Rate (e.g., mL/hour)
- Volume, (e.g., mL/day, mL/hr, mL/feeding)
- Schedule, (e.g., number of hours per 24 hours, continuous, intermittent, bolus)

Feeding Tube Flush, e.g., type, volume, mL/flush, frequency

Note: Enteral nutrition tolerance can be accomplished with the Physical Exam reference sheet and/or the pertinent biochemical/symptom reference sheet.

Examples of the measurement methods or data sources for these indicators: Patient/client report/recall, patient/client record, home evaluation, intake and output record

Typically used with the following domains of nutrition interventions: Food and/or nutrient delivery, nutrition education, coordination of nutrition care

Typically used to determine and to monitor and evaluate change in the following nutrition diagnoses:

Inadequate or excessive intake of enteral nutrition, inadequate fluid intake, food–medication interaction, involuntary weight loss or gain

Clinical judgment must be used to select indicators and determine the appropriate measurement techniques and reference standards for a given patient population and setting. Once identified, these indicators, measurement techniques, and reference standards should be identified in policies and procedures or other documents for use in patient/client records, quality or performance improvement, or in formal research projects.

Evaluation

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal (tailored to patient/client needs)
- OR
- 2) Reference Standard

Patient/Client Example

Example(s) of one or two of the Nutrition Care Indicators (includes sample initial and reassessment documentation for one of the indicators)

Indicator(s) Selected

Rate/schedule (mL/hour × number of hours)

Enteral Nutrition Intake (FH-1.3.1)

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal: Patient/client's enteral nutrition is at a rate of 50 mL per hour $\times$ 24 hours of 1 calorie or kcal per mL formula compared to the nutrition prescription of 80 mL/hour $\times$ 24 hours to meet estimated nutrition requirements.
OR
- 2) Reference Standard: There is no reference standard for this outcome because the provision of EN/PN is individualized.

Sample Nutrition Assessment and Monitoring and Evaluation Documentation

<i>Initial nutrition assessment with patient/client</i>	Enteral nutrition rate of 25 mL per hour $\times$ 24 hours of 1 calorie or kcal per mL formula compared to the nutrition prescription of 80 mL/hour to meet estimated nutrition requirements. Monitor enteral nutrition initiation and rate advancement.
<i>Reassessment after nutrition intervention</i>	Enteral nutrition at 70 mL per hour $\times$ 24 hours. Significant progress toward nutrition prescription of 1 calorie or kcal per mL formula at 80 mL per hour $\times$ 24 hours.

References

The following are some suggested references for indicators, measurement techniques, and reference standards; other references may be appropriate.

1. Charney P, Malone A. *ADA Pocket Guide to Nutrition Assessment*. 2nd ed. Chicago, IL: American Dietetic Association; 2009.
2. Academy of Nutrition and Dietetics. Nutrition Care Manual. Available at: www.nutritioncaremanual.org. Accessed January 26, 2012.
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11. Academy of Nutrition and Dietetics. Pediatric Nutrition Care Manual. Available at: <http://peds.nutritioncaremanual.org>. Accessed January 26, 2012.
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Updated: 2013 Edition

Parenteral Nutrition/IV Fluid Intake (FH-1.3.2)

Definition

Amount or type of parenteral nutrition and/or fluids provided intravenously.

Note: Whenever possible, nutrient intake data should be considered in combination with clinical, biochemical, anthropometric information, medical diagnosis, clinical status, and/or other factors as well as diet to provide a valid assessment of nutritional status based on a totality of the evidence. (Institute of Medicine. Dietary Reference Intakes: Applications in Dietary Assessment. Washington, DC: National Academies Press; 2000.)

Nutrition Assessment and Monitoring and Evaluation

Indicators

Formula/solution (specify)

- Composition (formula or description)
- Concentration (e.g., percent, grams of solute per mL)
- Rate (e.g., mL/hour)
- Schedule (e.g., hours, timing, taper schedule)

Intravenous fluids, e.g., type; amount mL/day, mL/hr, mL with medications

Note: Parenteral nutrition tolerance can be accomplished with the Physical Exam Reference sheet and/or the pertinent biochemical/sign or symptom reference sheet.

Examples of the measurement methods or data sources for these indicators: Patient/client report/recall, patient/client record, home evaluation, intake and output record

Typically used with the following domains of nutrition interventions: Food and/or nutrient delivery, nutrition education, coordination of nutrition care

Typically used to determine and to monitor and evaluate change in the following nutrition diagnoses:

Inadequate or excessive intake of parenteral nutrition, inadequate fluid intake, food–medication interaction, involuntary weight loss or gain

Clinical judgment must be used to select indicators and determine the appropriate measurement techniques and reference standards for a given patient population and setting. Once identified, these indicators, measurement techniques, and reference standards should be identified in policies and procedures or other documents for use in patient/client records, quality or performance improvement, or in formal research projects.

Evaluation

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal (tailored to patient/client needs)
- OR
- 2) Reference Standard

Patient/Client Example

Example(s) of one or two of the Nutrition Care Indicators (includes sample initial and reassessment documentation for one of the indicators)

Indicator(s) Selected

Rate/schedule (mL/hour × number of hours)

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal: Patient/client's parenteral nutrition is at a rate of 50 mL per hour × 24 hours of standard solution compared to the nutrition prescription of 80 mL/hour × 24 hours to meet estimated nutrition requirements.
- OR
- 2) Reference Standard: There is no reference standard for this outcome as the provision of EN/PN is individualized.

Parenteral Nutrition/IV Fluid Intake (FH-1.3.2)

Sample Nutrition Assessment and Monitoring and Evaluation Documentation

Initial nutrition assessment with patient/client	Parenteral nutrition rate of 25 mL per hour × 24 hours of standard solution compared to the nutrition prescription of 80 mL/hour to meet estimated nutrition requirements. Monitor nutrition initiation and rate advancement.
Reassessment after nutrition intervention	Parenteral nutrition at 70 mL per hour × 24 hours. Significant progress toward nutrition prescription of 80 mL per hour × 24 hours.

References

The following are some suggested references for indicators, measurement techniques, and reference standards; other references may be appropriate.

1. Charney P, Malone A. *ADA Pocket Guide to Nutrition Assessment*. 2nd ed. Chicago, IL: American Dietetic Association; 2009.
2. Academy of Nutrition and Dietetics. Nutrition Care Manual. Available at: www.nutritioncaremanual.org. Accessed January 26, 2012.
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4. Centers for Medicare and Medicaid Services. National coverage determination (NCD) for enteral and parenteral nutrition therapy. Available at: http://www.cms.hhs.gov/mcd/viewncd.asp?ncd_id=180.2&ncd_version=1&basket=ncd%3A180%2E2%3A1%3AEnteral+and+Parenteral+Nutritional+Therapy. Accessed December 22, 2006.
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10. Kovacevich DS, Frederick A, Kelly D, Nishikawa R, Young L. American Society for Parenteral and Enteral Nutrition Board of Directors, Standards for Specialized Nutrition Support Task Force. Standards for specialized nutrition support: home care patients. *Nutr Clin Pract*. 2005;20:579-590.
11. Academy of Nutrition and Dietetics. Pediatric Nutrition Care Manual. Available at: <http://peds.nutritioncaremanual.org>. Accessed January 26, 2012.
12. Steiger E, HPEN Working Group. Consensus statements regarding optimal management of home parenteral nutrition (HPN) access. *J Parenter Enteral Nutr*. 2006;30(1 Suppl):S94-S95.

Updated: 2013 Edition

Alcohol Intake (FH-1.4.1)

Definition

Amount and pattern of alcohol consumption

Nutrition Assessment and Monitoring and Evaluation

Indicators

Drink size/volume (oz or mL)

Frequency (drinks/day and/or number of drinking days per week)

Pattern of alcohol consumption (number/size of drinks on drinking days)

Note: 1 drink = 5 oz (150mL) wine, 12 oz (350mL) beer, 1.5 oz (45mL) distilled alcohol

Examples of the measurement methods or data sources for these indicators: Patient/client report/recall, self-monitoring log

Typically used with the following domains of nutrition interventions: Nutrition education, nutrition counseling

Typically used to determine and to monitor and evaluate change in the following nutrition diagnoses:

Excessive intake of alcohol; excessive or inadequate intake of energy; altered nutrition-related laboratory values; impaired nutrient utilization; overweight/obesity

Clinical judgment must be used to select indicators and determine the appropriate measurement techniques and reference standards for a given patient population and setting. Once identified, these indicators, measurement techniques, and reference standards should be identified in policies and procedures or other documents for use in patient/client records, quality or performance improvement, or in formal research projects.

Evaluation

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal (tailored to patient/client needs)
- OR
- 2) Reference Standard

Patient/Client Example

Example(s) of one or two of the Nutrition Care Indicators (includes sample initial and reassessment documentation for one of the indicators)

Indicator(s) Selected

Pattern of alcohol consumption (number/size of drinks on drinking days)

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal: Patient/client's intake of one, 5 oz (150 mL) glass of wine 2 to 3 times per week is significantly above and non-compliant with the goal to abstain from alcohol during pregnancy.
- OR
- 2) Reference Standard: Patient/client's intake of three to four, 5 oz (150 mL) glasses of wine on drinking days is significantly above (above or consistent with) the recommendation of one 5 oz (150 mL) glass of wine per day for adult females.

Alcohol Intake (FH-1.4.1)

Sample Nutrition Assessment and Monitoring and Evaluation Documentation

<i>Initial nutrition assessment with patient/client</i>	Based on recall, patient/client consuming three to four 5 oz (150 mL) glasses of wine on drinking days, which is above the recommended amount for females. Will monitor change in alcohol intake at next encounter.
<i>Reassessment after nutrition intervention</i>	Progress toward reference standard of up to one 5 oz (150 mL) glass of wine per day. Based on 7-day record, patient/client consuming 3 oz (90 mL) of wine on drinking days.

References

The following are some suggested references for indicators, measurement techniques, and reference standards; other references may be appropriate.

1. US Department of Agriculture and Health and Human Services. Dietary Guidelines for Americans, 2010. <http://www.cnpp.usda.gov/dietaryguidelines.htm>. Accessed: January 24, 2012.
2. National Institutes of Health, National Institute on Alcoholism and Alcohol Abuse. Task Force on Recommended Alcohol Questions, National Council on Alcohol Abuse and Alcoholism Recommended Sets of Alcohol Consumption Questions. Available at: <http://www.niaaa.nih.gov/Resources/ResearchResources/TaskForce.htm>. Accessed October 27, 2006.
3. Sobell SC, Sobell MB. Alcohol Consumption Measures. Available at: <http://pubs.niaaa.nih.gov/publications/Assesing%20Alcohol/measures.htm>. Accessed February 7, 2008.

Bioactive Substance Intake (FH-1.4.2)

Definition

Amount and type of bioactive substances consumed

Note: Bioactive substances are not part of the Dietary Reference Intakes, and therefore there are no established minimum requirements or Tolerable Upper Intake Levels. However, RDs can assess whether estimated intakes are adequate or excessive using the patient/client goal or nutrition prescription for comparison.

Working definition of bioactive substances—physiologically active components of foods that may have an effect on health. There is no scientific consensus about a definition for bioactive substances/components.

Nutrition Assessment and Monitoring and Evaluation

Indicators

- Plant stanol esters (grams/day)
- Plant sterol esters (grams/day)
- Soy protein (grams/day)
- Psyllium (grams/day)
- β-glucan (grams/day)
- Food additives (those thought to have an impact on a patient/client's health), specify
- Other, specify

Examples of the measurement methods or data sources for these indicators: Patient/client report/recall, self-monitoring log

Typically used with the following domains of nutrition interventions: Nutrition education, nutrition counseling

Typically used to determine and to monitor and evaluate change in the following nutrition diagnoses:

Inadequate or excessive intake of bioactive substances, food–medication interaction

Clinical judgment must be used to select indicators and determine the appropriate measurement techniques and reference standards for a given patient population and setting. Once identified, these indicators, measurement techniques, and reference standards should be identified in policies and procedures or other documents for use in patient/client records, quality or performance improvement, or in formal research projects.

Evaluation

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal (tailored to patient/client needs)
OR
- 2) Reference Standard

Patient/Client Example

Example(s) of one or two of the Nutrition Care Indicators (includes sample initial and reassessment documentation for one of the indicators)

Indicator(s) Selected

Plant sterol and/or stanol esters (grams/day)

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal: The patient/client does not consume plant sterol or stanol esters compared to the goal intake of 2 to 3 grams per day.
OR
- 2) Reference Standard: No validated standard exists.

Bioactive Substance Intake (FH-1.4.2)

Sample Nutrition Assessment and Monitoring and Evaluation Documentation

<i>Initial assessment with patient/client</i>	Based on recall, patient/client not consuming (0 grams) stanol and/or sterol esters per day, which is below the goal intake of 2 to 3 grams per day. Will monitor change in stanol/sterol ester intake at next encounter.
<i>Reassessment after nutrition intervention</i>	Good progress toward the goal of 2 to 3 grams per day of stanol and/or sterol ester. Based on 7-day diet record, patient/client consuming 2 to 3 grams stanol/sterol ester per day, 2 to 3 days per week.

References

The following are some suggested references for indicators, measurement techniques, and reference standards; other references may be appropriate.

1. Academy of Nutrition and Dietetics. Disorders of Lipid Metabolism Evidence-based Nutrition Practice Guideline, 2011. Available at: <http://www.andevidencelibrary.com/topic.cfm?cat=4527>. Accessed January 26, 2012.
2. Position of the American Dietetic Association: Functional foods. *J Am Diet Assoc.* 2009;109:735-746.

Updated: 2013 Edition

Caffeine Intake (FH-1.4.3)

Definition

Amount of caffeine intake from all sources, e.g., food, beverages, supplements, medications, and via enteral and parenteral routes

Nutrition Assessment and Monitoring and Evaluation

Indicators

Total caffeine intake (mg/day, e.g. naturally occurring caffeine in leaves, seeds, fruits of plants and sources with added caffeine such as water/beverages, medications)

Examples of the measurement methods or data sources for these indicators: Patient/client report/recall, self-monitoring log

Typically used with the following domains of nutrition interventions: Nutrition education, nutrition counseling

Typically used to determine and to monitor and evaluate change in the following nutrition diagnoses: Food and nutrition-related knowledge deficit

Clinical judgment must be used to select indicators and determine the appropriate measurement techniques and reference standards for a given patient population and setting. Once identified, these indicators, measurement techniques, and reference standards should be identified in policies and procedures or other documents for use in patient/client records, quality or performance improvement, or in formal research projects.

Evaluation

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal (tailored to patient/client needs)
- OR
- 2) Reference Standard

Patient/Client Example

Example(s) of one or two of the Nutrition Care Indicators (includes sample initial and reassessment documentation for one of the indicators)

Indicator(s) Selected

Total caffeine intake (mg/day)

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal: The patient/client's intake is 600 mg of caffeine per day, which is above the goal of < 300 mg caffeine/day.
- OR
- 2) Reference Standard: The patient/client's intake is approximately 600 mg of caffeine/day which is above (above, below, or consistent with) of the reference standard of 400 mg caffeine/day.

Sample Nutrition Assessment and Monitoring and Evaluation Documentation

<i>Initial assessment with patient/client</i>	Based on recall, patient/client consuming approximately 600 mg caffeine/day, which is above the reference standard of 400 mg/day. Will monitor change in caffeine intake at next encounter.
<i>Reassessment after nutrition intervention</i>	No progress toward the reference standard of 400 mg caffeine/day. Based on 3-day diet record, patient/client still consuming 600 mg caffeine/day.

Caffeine Intake (FH-1.4.3)

References

The following are some suggested references for indicators, measurement techniques, and reference standards; other references may be appropriate.

1. Bech BH, Obel C, Henriksen TB, Olsen J. Effect of reducing caffeine intake on birth weight and length of gestation: randomised controlled trial. *BMJ*. 2007;334:409.
2. Department of Health and Human Services, National Institute of Environmental Health Sciences, National Toxicology Program. Center for the Evaluation of Risks to Human Reproduction (CERHR). Available at: <http://cerhr.niehs.nih.gov/common/caffeine.html>. Accessed October 31, 2006.
3. Frary CD, Johnson RK, Wang MQ. Food sources and intakes of caffeine in the diets of persons in the United States. *J Am Diet Assoc*. 2005;105:110-113.
4. Higdon JV, Frei B. Coffee and health: a review of recent human research. *Crit Rev Food Sci Nutr*. 2006;46:101-123.
5. Position of the American Dietetic Association: Nutrition and lifestyle for a healthy pregnancy outcome. *J Am Diet Assoc*. 2008;108:553-561.
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7. McCusker RR, Goldberger BA, Cone EJ. Caffeine content of energy drinks, carbonated sodas, and other beverages. *J Anal Toxicol*. 2006;30:112-114.
8. Nawrot P, Jordan S, Eastwood J, Rotstein J, Hugenholtz A, Feeley M. Effects of caffeine on human health. *Food Addit Contam*. 2003;20:1-30.
9. Nutrient Data Laboratory, USDA National Nutrient Database for Standard Reference. Available at: <http://ndb.nal.usda.gov>. Accessed January 31, 2012.
10. Organization of Teratology Information Services (OTIS). Caffeine and Pregnancy. Available at: <http://www.otispregnancy.org/pdf/caffeine.pdf>. Accessed November 11, 2006.
11. Winkelmayr WC, Stampfer MJ, Willett WC, Curhan, GC. Habitual caffeine intake and the risk of hypertension in women. *JAMA*. 2005;294:2330-2335.

Fat and Cholesterol Intake (FH-1.5.1)

Definition

Fat and cholesterol consumption from all sources, e.g., food, beverages, supplements, and via enteral and parenteral routes

Note: Whenever possible, nutrient intake data should be considered in combination with clinical, biochemical, anthropometric information, medical diagnosis, clinical status, and/or other factors as well as diet to provide a valid assessment of nutritional status based on a totality of the evidence. (Institute of Medicine. Dietary Reference Intakes: Applications in Dietary Assessment. Washington, DC: National Academies Press; 2000.)

Nutrition Assessment and Monitoring and Evaluation

Indicators

Total fat (specify, e.g., grams/day, grams/kg/day, percentage of calories, kcal or kJ)

Saturated fat (specify, e.g., grams/day or percentage of calories, kcal or kJ/day)

Trans fatty acids (specify, e.g., grams/day or percentage of calories, kcal or kJ/day)

Polyunsaturated fat (specify, e.g., grams/day or percentage of calories, kcal or kJ/day)

Monounsaturated fat (specify, e.g., grams/day or percentage of calories, kcal or kJ/day)

Omega-3 fatty acids

- Marine-derived (specify, e.g., grams/day)
- Plant-derived
 - Alpha-linolenic acid (specify, e.g., grams/day or percentage of calories, kcal or kJ/day)

Dietary cholesterol (specify, e.g., mg/day)

Essential fatty acids (specify, e.g., grams or ratio)

Note: Plant sterol and stanol esters can be found on the Bioactive Substance Intake Reference sheet.

Examples of the measurement methods or data sources for these indicators: Food intake records, 24-hour recall, food frequency questionnaires, menu analysis, fat and cholesterol targeted questionnaires and monitoring devices

Typically used with the following domains of nutrition interventions: Food and/or nutrient delivery, nutrition education, nutrition counseling

Typically used to determine and to monitor and evaluate change in the following nutrition diagnoses: Inadequate and excessive fat intake, less-than-optimal intake of types of fats, overweight/obesity, altered nutrition-related lab values, altered food and nutrition-related knowledge deficit

Clinical judgment must be used to select indicators and determine the appropriate measurement techniques and reference standards for a given patient population and setting. Once identified, these indicators, measurement techniques, and reference standards should be identified in policies and procedures or other documents for use in patient/client records, quality or performance improvement, or in formal research projects.

Evaluation

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal (tailored to patient/client's needs)
- OR
- 2) Reference Standard

Patient/Client Example(s)

Example(s) of one or two of the Nutrition Care Indicators (includes sample initial and reassessment documentation for one of the indicators)

Fat and Cholesterol Intake (FH-1.5.1)

Indicator(s) Selected

Total fat (percentage of calories, kcal or kJ from fat)

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal: Patient/client currently consumes 40% of calories, kcal or kJ from fat. Goal is to decrease fat intake to 25 to 35% of calories, kcal or kJ.
OR
- 2) Reference Standard: Patient/client's intake of 350 mg of cholesterol per day is 175% of the National Heart, Lung and Blood Institute, Adult Treatment Panel III guidelines of less than 200 mg of dietary cholesterol per day.

Sample Nutrition Assessment and Monitoring and Evaluation Documentation

<i>Initial nutritional assessment with patient/client</i>	Based on a three-day food diary, patient/client is consuming approximately 40% of calories, kcal or kJ from fat. Patient/client goal is to reduce total fat intake to 25 to 35% of calories, kcal or kJ. Will monitor fat and calorie intake at next appointment.
<i>Reassessment after nutrition intervention</i>	Significant progress toward the goal intake of 25 to 35% calories, kcal or kJ from fat. Based on a three-day food diary patient/client's total fat intake decreased from approximately 40% to 38% calories, kcal or kJ from fat/day. Will continue to monitor progress at next encounter in 6 weeks.

References

The following are some suggested references for indicators, measurement techniques, and reference standards for the outcome; other references may be appropriate.

1. American Heart Association Nutrition Committee: Lichtenstein, A, Appel, L, Brands M, Carnethon M, Daniels S, Franch HA, Franklin B, Kris-Etherton P, Harris WS, Howard B, Karanja N, Lefevre M, Rudel L, Sacks F, Van Horn L, Winston M, Wylie-Rosett J. Diet and lifestyle recommendations revision 2006: a scientific statement from the American Heart Association Nutrition Committee. *Circulation*. 2006;114:82-96.
2. Bantle JP, Wylie-Rosett J, Albright AL, Apovian CM, Clark NG, Franz MJ, Hoogwerf BJ, Lichtenstein AH, Mayer-Davis E, Mooradian AD, Wheeler ML. Nutrition recommendations and interventions for diabetes—2006: a position statement of the American Diabetes Association. *Diabetes Care*. 2006;29:2140-2157.
3. Committee on Nutrient Relationships in Seafood—National Academies. *Seafood Choices: Balancing Benefits and Risks*. Washington, DC: National Academies Press; 2006.
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5. Institute of Medicine, Food and Nutrition Board. *Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein and Amino Acids*. Washington, DC: National Academies Press; 2002.
6. American Society for Parenteral and Enteral Nutrition Board of Directors and The Clinical Guidelines Task Force. Guidelines for the use of parenteral and enteral nutrition in adult and pediatric patients: specific guidelines for disease—adults. *J Parenter Enteral Nutr*. 2002;26(Suppl):S61-S96.
7. US Departments of Agriculture and Health and Human Services. Dietary Guidelines for Americans, 2010. Available at: <http://www.cnpp.usda.gov/dietaryguidelines.htm>. Accessed: January 24, 2012.
8. Academy of Nutrition and Dietetics. Nutrition Care Manual. Available at: www.nutritioncaremanual.org. Accessed January 26, 2012.
9. Academy of Nutrition and Dietetics. Disorders of Lipid Metabolism Evidence Based Nutrition Practice Guideline, 2011. Available at: <http://www.andevidencelibrary.com/topic.cfm?cat=4527>. Accessed January 26, 2012.
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11. Van Horn L, McCoin M, Kris-Etherton PM, Burke F, Carson J, Champagne CM, Karmally W, Sikand G. The evidence for dietary prevention and treatment of cardiovascular disease. *J Am Diet Assoc*. 2008;108(2):287-331.

Protein Intake (FH-1.5.2)

Definition

Protein intake from all sources, e.g., food, beverages, supplements, and via enteral and parenteral routes

Note: Whenever possible, nutrient intake data should be considered in combination with clinical, biochemical, anthropometric information, medical diagnosis, clinical status, and/or other factors as well as diet to provide a valid assessment of nutritional status based on a totality of the evidence. (Institute of Medicine. Dietary Reference Intakes: Applications in Dietary Assessment. Washington, DC: National Academies Press; 2000.)

Nutrition Assessment and Monitoring and Evaluation

Indicators

Total protein (specify, e.g., grams/day, grams/kg/day, percentage of calories, kcal or kJ)

High biological value protein (specify, e.g., grams/day, percentage of calories, kcal or kJ)

Casein (specify, e.g., grams/day)

Whey (specify, e.g., grams/day)

Amino acids (specify, e.g., percentage of crystalline amino acids)

Essential amino acids (specify, e.g., mg/day)

Note: Soy protein can be found on the Bioactive Substance Intake Reference sheet.

Examples of the measurement methods or data sources for these indicators: Food intake records, 24-hour recall, food frequency questionnaires, protein intake collection tools, nutrition fact labels, other product information, nutrient composition tables

Typically used with the following domains of nutrition interventions: Food and/or nutrient delivery, nutrition education, nutrition counseling, coordination of nutrition care

Typically used to determine and to monitor and evaluate change in the following nutrition diagnoses:

Inadequate and excessive protein intake, less than optimal intake of types of proteins or amino acids, malnutrition, inadequate protein-energy intake, altered GI function, limited adherence to nutrition-related recommendations

Clinical judgment must be used to select indicators and determine the appropriate measurement techniques and reference standards for a given patient population and setting. Once identified, these indicators, measurement techniques, and reference standards should be identified in policies and procedures or other documents for use in patient/client records, quality or performance improvement, or in formal research projects.

Evaluation

Criteria for Evaluation

Comparison to Goal or Reference Standard:

1) Goal (tailored to patient/client's needs)

OR

2) Reference Standard

Patient/Client Example(s)

Example(s) of one or two of the Nutrition Care Indicators (includes sample initial and reassessment documentation for one of the indicators)

Indicator(s) Selected

Total protein

Protein Intake (FH-1.5.2)

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal: Patient/client's current intake of 25 g protein per day is below the recommended level of 55 to 65 g per day.
OR
- 2) Reference Standard: (Used when patient goal is based on the population standard) Patient/client's intake of 12 g protein/day is less than the DRI of 53 g/day (0.8 g/kg BW). Patient/client's goal is to increase protein intake to approximately 55 g/day.

Sample Nutrition Assessment and Monitoring and Evaluation Documentation

<i>Initial nutrition assessment with patient/client</i>	Enteral feeding currently providing 25 g protein/day, well below the recommended level of 55 to 65 g/day (1 to 1.2 g/kg BW). Will continue to monitor protein intake daily.
<i>Reassessment after nutrition intervention</i>	Some progress toward goal intake of 55 to 65 g protein/day. Current intake approximately 30 g protein/day, 25 g protein below desired level. Will continue to monitor protein intake daily.

References

The following are some suggested references for indicators, measurement techniques, and reference standards for the outcome; other references may be appropriate.

1. Institute of Medicine, Food and Nutrition Board. *Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein and Amino Acids*. Washington, DC: National Academies Press; 2002.
2. Young VR, Borgouha S. Adult human amino acid requirements. *Curr Opin Clin Metab Care*. 1999;2:39-45.
3. Charney P, Malone A. *ADA Pocket Guide to Nutrition Assessment*. 2nd ed. Chicago, IL: American Dietetic Association; 2009.
4. American Society for Parenteral and Enteral Nutrition Board of Directors and The Clinical Guidelines Task Force. Guidelines for the use of parenteral and enteral nutrition in adult and pediatric patients: specific guidelines for disease—adults. *J Parenter Enteral Nutr*. 2002;26(Suppl):S61-S96.
5. American Society for Parenteral and Enteral Nutrition Board of Directors and The Clinical Guidelines Task Force. Guidelines for the use of parenteral and enteral nutrition in adult and pediatric patients: life cycle and metabolic conditions. *J Parenter Enteral Nutr*. 2002;26(Suppl):S45-S60.
6. American Society for Parenteral and Enteral Nutrition Board of Directors and The Clinical Guidelines Task Force. Guidelines for the use of parenteral and enteral nutrition in adult and pediatric patients: specific guidelines for disease—pediatrics. *J Parenter Enteral Nutr*. 2002;26(Suppl):S111-S138.
7. Academy of Nutrition and Dietetics. Nutrition Care Manual. Available at: www.nutritioncaremanual.org. Accessed January 26, 2012.
8. NKF-K/DOQI. Clinical practice guidelines for nutrition in chronic renal failure. *Am J Kidney Dis*. 2001;37(1 Suppl 2):S66-70.

Carbohydrate Intake (FH-1.5.3)

Definition

Carbohydrate consumption from all sources, e.g., food, beverages, supplements, and via enteral and parenteral routes

Note: Whenever possible, nutrient intake data should be considered in combination with clinical, biochemical, anthropometric information, medical diagnosis, clinical status, and/or other factors as well as diet to provide a valid assessment of nutritional status based on a totality of the evidence. (Institute of Medicine. Dietary Reference Intakes: Applications in Dietary Assessment. Washington, DC: National Academies Press; 2000.)

Nutrition Assessment and Monitoring and Evaluation

Indicators

Total carbohydrate (specify, e.g., grams/day, grams/meal, grams/kg/min, percent of calories, kcal or kJ)

Sugar (specify, e.g., grams/day, percentage of calories, kcal or kJ)

Starch (specify, e.g., grams/day, percentage of calories, kcal or kJ)

Glycemic index (specify)

Glycemic load (specify)

Source of carbohydrate intake (food, beverage, tube feeding, parenteral nutrition, medication)

Insulin-to-carbohydrate ratio (specify)

Note: Fiber intake is listed on the Fiber Intake Reference sheet.

Psyllium and β -glucan can be found on the Bioactive Substance Intake reference sheet.

Examples of the measurement methods or data sources for these indicators: Food intake records, 24-hour or typical day's recall, food frequency questionnaires, menu analysis, carbohydrate counting tools, intake/output sheets (for tube feeding or parenteral nutrition)

Typically used with the following domains of nutrition interventions: Food and/or nutrient delivery, nutrition education, nutrition counseling, coordination of nutrition care

Typically used to determine and to monitor and evaluate change in the following nutrition diagnoses: Inadequate and excessive carbohydrate intake, less-than-optimal intake of types of carbohydrate, inconsistent carbohydrate intake, altered nutrition-related laboratory values, food medication interaction

Clinical judgment must be used to select indicators and determine the appropriate measurement techniques and reference standards for a given patient population and setting. Once identified, these indicators, measurement techniques, and reference standards should be identified in policies and procedures or other documents for use in patient/client records, quality or performance improvement, or in formal research projects.

Evaluation

Criteria for Evaluation

Comparison to Goal or Reference Standard:

1) Goal (tailored to patient/client's needs)

OR

2) Reference Standard

Patient/Client Example(s)

Example(s) of one or two of the Nutrition Care Indicators (includes sample initial and reassessment documentation for one of the indicators)

Indicator(s) Selected

Total carbohydrate (distribution by meal)

Carbohydrate Intake (FH-1.5.3)

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal: Patient/client's current carbohydrate intake in the morning ranges from 0 to 95 grams. The goal is that the patient/client will consume approximately 30 g carbohydrate at breakfast 6 days per week.
OR
- 2) Reference Standard: No validated standard exists.

Sample Nutrition Assessment and Monitoring and Evaluation Documentation

<i>Initial nutrition assessment with patient/client</i>	Based on carbohydrate counting tools, patient/client consumed 30 g carbohydrate at breakfast 2 days/week. Goal is to consume 30 g carbohydrate for breakfast 6 days per week.
<i>Reassessment after nutrition intervention</i>	Some progress made toward goal. Based on carbohydrate counting tools, patient/client consumed 30 g carbohydrate at breakfast 2 days/week. Will monitor breakfast carbohydrate intake at next encounter.

References

The following are some suggested references for indicators, measurement techniques, and reference standards for the outcome; other references may be appropriate.

1. Academy of Nutrition and Dietetics. Diabetes Mellitus (DM) Type 1 and 2 Evidence-based Nutrition Practice Guideline for Adults. Available at: <http://www.andevidencelibrary.com/topic.cfm?cat=3251>. Accessed January 26, 2012.
2. Academy of Nutrition and Dietetics. Nutrition Care Manual. Available at: www.nutritioncaremanual.org. Accessed January 26, 2012.
3. American Society for Parenteral and Enteral Nutrition Board of Directors and The Clinical Guidelines Task Force. Guidelines for the use of parenteral and enteral nutrition in adult and pediatric patients: specific guidelines for disease—adults. *J Parenter Enteral Nutr.* 2002;26(Suppl):S61-S96.
4. Institute of Medicine, Food and Nutrition Board. *Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein and Amino Acids*. Washington, DC: National Academies Press; 2002.
5. American Diabetes Association. Standards of Medical Care in Diabetes (Position Statement)—2012. *Diabetes Care.* 2012;35:S11-S63.
6. US Departments of Agriculture and Health and Human Services. Dietary Guidelines for Americans, 2010. Available at: <http://www.cnpp.usda.gov/dietaryguidelines.htm>. Accessed: January 24, 2012.

Updated: 2011 Edition

Fiber Intake (FH-1.5.4)

Definition

Amount and/or type of plant source matter consumed that is not completely digested, but may be at least partially fermented in the distal bowel, and is derived from all sources e.g., food, beverages, supplements, and via enteral routes

Note: Whenever possible, nutrient intake data should be considered in combination with clinical, biochemical, anthropometric information, medical diagnosis, clinical status, and/or other factors as well as diet to provide a valid assessment of nutritional status based on a totality of the evidence. (Institute of Medicine. Dietary Reference Intakes: Applications in Dietary Assessment. Washington, DC: National Academies Press; 2000.)

Nutrition Assessment and Monitoring and Evaluation

Indicators

- Total fiber (g/day)
- Soluble fiber (g/day)
- Insoluble fiber (g/day)
 - Fructooligosaccharides (g/day)

Note: Psyllium and β -glucan can be found on the Bioactive Substance Intake reference sheet

Examples of the measurement methods or data sources for these indicators: Food intake records, 24-hour recall, food frequency questionnaires, menu analysis, fiber counting tools, nutrition fact labels, other product information, nutrient composition tables

Typically used with the following domains of nutrition interventions: Food and/or nutrient delivery, nutrition education, nutrition counseling, coordination of nutrition care

Typically used to determine and to monitor and evaluate change in the following nutrition diagnoses: Inadequate and excessive fiber intake, altered GI function, disordered eating pattern, inadequate bioactive substance intake

Clinical judgment must be used to select indicators and determine the appropriate measurement techniques and reference standards for a given patient population and setting. Once identified, these indicators, measurement techniques, and reference standards should be identified in policies and procedures or other documents for use in patient/client records, quality or performance improvement, or in formal research projects.

Evaluation

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal (tailored to patient/client's needs)
OR
- 2) Reference Standard

Patient/Client Example(s)

Example(s) of one or two of the Nutrition Care Indicators (includes sample initial and reassessment documentation for one of the indicators)

Indicator(s) Selected

Total dietary fiber intake including those from foods and dietary fiber supplements.

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal: Patient/client with current fiber intake of 15 g per day. Goal is to increase fiber intake to approximately 25 g per day.
OR
- 2) Reference Standard: Patient/client's current intake of 15 g of dietary fiber per day is below the DRI of 25 g/day for a 40-year-old woman.

Fiber Intake (FH-1.5.4)

Sample Nutrition Assessment and Monitoring and Evaluation Documentation

<i>Initial nutrition assessment with patient/client</i>	Based on patient/client's food diary, patient/client is consuming approximately 15 g of fiber/day. Will monitor fiber intake at next encounter in three weeks.
<i>Reassessment after nutrition intervention</i>	Goal achieved. Patient/client's intake of 27 g fiber exceeded goal intake of 25 g/day. Will continue to monitor to ensure success is sustained.

References

The following are some suggested references for indicators, measurement techniques, and reference standards for the outcome; other references may be appropriate.

1. Institute of Medicine, Food and Nutrition Board. *Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein and Amino Acids*. Washington, DC: National Academies Press; 2002.
2. Position of the American Dietetic Association: health implications of dietary fiber. *J Am Diet Assoc*. 2008;108:1716-1731.
3. Institute of Food Science and Technology. Information statement: Dietary fiber. Available at: <http://www.ifst.org/uploadedfiles/cms/store/ATTACHMENTS/dietaryfibre.pdf>. Accessed January 29, 2008.
4. US Department of Health and Human Services. National Institutes of Health. National Heart, Lung and Blood Institute. *Third Report of the Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults (Adult Treatment Panel III)*. Bethesda, MD: National Institutes of Health; 2001.
5. Academy of Nutrition and Dietetics. Nutrition Care Manual. Available at: www.nutritioncaremanual.org. Accessed January 26, 2012.
6. Thomson CA. Practice paper of the American Dietetic Association: dietary supplements. *J Am Diet Assoc*. 2005;105(3):460-470.

Vitamin Intake (FH-1.6.1)

Definition

Vitamin intake from all sources, e.g., food, beverages, supplements, and via enteral and parenteral routes

Note: Whenever possible, nutrient intake data should be considered in combination with clinical, biochemical, anthropometric information, medical diagnosis, clinical status, and/or other factors as well as diet to provide a valid assessment of nutritional status based on a totality of the evidence. (Institute of Medicine. Dietary Reference Intakes: Applications in Dietary Assessment. Washington, DC: National Academies Press; 2000.)

Nutrition Assessment and Monitoring and Evaluation

Indicators

Vitamin A (specify form, µg or RE, frequency)	Niacin (specify form, mg, frequency)
Vitamin C (mg, frequency)	Vitamin B6 (specify form, mg, frequency)
Vitamin D (specify form, µg or IU, frequency)	Folate (specify form, µg, frequency)
Vitamin E (specify form, mg or IU, frequency)	Vitamin B12 (µg, frequency)
Vitamin K (µg, frequency)	Pantothenic acid (mg, frequency)
Thiamin (mg, frequency)	Biotin (µg, frequency)
Riboflavin (mg, frequency)	
Multivitamin (yes/no, specify dose, frequency)	

Note: Laboratory measures associated with body vitamin status can be found on the Vitamin Profile reference sheet.

Examples of the measurement methods or data sources for these indicators: Patient/client report or recall, food frequency, home evaluation, supplement use questionnaire

Typically used with the following domains of nutrition interventions: Food and/or nutrient delivery, nutrition education, nutrition counseling, coordination of nutrition care

Typically used to determine and to monitor and evaluate change in the following nutrition diagnoses:

Excessive or inadequate intake of vitamins, parenteral, or enteral nutrition

Clinical judgment must be used to select indicators and determine the appropriate measurement techniques and reference standards for a given patient population and setting. Once identified, these indicators, measurement techniques, and reference standards should be identified in policies and procedures or other documents for use in patient/client records, quality or performance improvement, or in formal research projects.

Evaluation

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Nutrition Prescription or Goal (tailored to patient/client needs)
OR
- 2) Reference Standard

Patient/Client Example

Example(s) of one or two of the Nutrition Care Indicators (includes sample initial and reassessment documentation for one of the indicators)

Indicator(s) Selected

Vitamin D (µg or IU, frequency)

Vitamin Intake (FH-1.6.1)

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Nutrition Prescription or Goal: Use if patient/client's nutrition prescription/goal is different from the reference standard.
OR
- 2) Reference Standard: The patient/client's intake of 4 µg (160 IU) per day of Vitamin D is below (above, below, consistent with) the Adequate Intake (AI in the reference intake standard (e.g., DRIs)) for males, age 14 to 18.

Sample Nutrition Assessment and Monitoring and Evaluation Documentation

<i>Initial nutrition assessment with patient/client</i>	Based on recall, patient/client with cystic fibrosis consuming approximately 4 µg for Vitamin D, which is below the Adequate Intake (AI) of 5 µg (200 IU) per day for Vitamin D for a 15-year-old male. Patient/client has also discontinued fat-soluble vitamin supplement. Will monitor Vitamin D intake at next encounter, intake of fat-soluble vitamin supplement, and request 25-Hydroxy, Vitamin D level (Vitamin Profile reference sheet).
<i>Reassessment after nutrition intervention</i>	25-Hydroxy, Vitamin D level below expected range (from Vitamin Profile). Significant progress toward the Adequate Intake of 5 µg (200 IU) for Vitamin D. Based on 3-day diet record, patient/client has increased consumption of Vitamin D from food sources to 5-7 µg (200-280 IU) for Vitamin D which is consistent with the Adequate Intake for healthy individuals, and is taking fat-soluble vitamin supplement on average 5 days per week. Despite meeting Adequate Intake, since patient/client has cystic fibrosis, will need to continue fat-soluble vitamin supplementation in addition to food sources. Repeat lab in 3 months.

Assessment & Monitoring & Evaluation

References

The following are some suggested references for indicators, measurement techniques, and reference standards; other references may be appropriate.

1. Academy of Nutrition and Dietetics. Nutrition Care Manual. Available at: www.nutritioncaremanual.org. Accessed January 26, 2012.
2. Gartner LM, Greer FR, American Academy of Pediatrics Committee on Nutrition. Prevention of rickets and Vitamin D deficiency: new guidelines for Vitamin D Intake. *Pediatrics*. 2003;111:908-10.
3. American Society for Parenteral and Enteral Nutrition Board of Directors and the Clinical Guidelines Task Force. Guidelines for the use of parenteral and enteral nutrition in adult and pediatric patients: Normal requirements—adults. *J Parenter Enteral Nutr*. 2002;26(Suppl):S22-S24.
4. American Society for Parenteral and Enteral Nutrition Board of Directors and the Clinical Guidelines Task Force. Guidelines for the use of parenteral and enteral nutrition in adult and pediatric patients: Normal requirements—pediatrics. *J Parenter Enteral Nutr*. 2002;26(Suppl):S25-S32.
5. Institute of Medicine. *Dietary Reference Intakes for Calcium, Phosphorus, Magnesium, Vitamin D, and Fluoride*. Washington, DC: National Academies Press; 1997.
6. Institute of Medicine. *Dietary Reference Intakes for Calcium and Vitamin D*. Washington, DC: National Academies Press; 2010.
7. Institute of Medicine. *Dietary Reference Intakes: Thiamin, Riboflavin, Niacin, Vitamin B6, Folate, Vitamin B12, Pantothenic acid, Biotin, and Choline*. Washington, DC: National Academies Press; 1998.
8. Institute of Medicine. *Dietary Reference Intakes for Vitamin A, Vitamin K, Arsenic, Boron, Chromium, Copper, Iodine, Iron, Manganese, Molybdenum, Nickel, Silicon, Vanadium, and Zinc*. Washington, DC: National Academies Press; 2001.
9. Institute of Medicine. *Dietary Reference Intakes: Vitamin C, Vitamin E, Selenium, and Carotenoids*. Washington, DC: National Academies Press; 2000.
10. Academy of Nutrition and Dietetics. Pediatric Nutrition Care Manual. Available at: <http://peds.nutritioncaremanual.org>. Accessed January 26, 2012.

Updated: 2013 Edition

Mineral/Element Intake (FH-1.6.2)

Definition

Mineral/element intake from all sources, e.g., food, beverages, supplements, and via enteral and parenteral routes

Note: Whenever possible, nutrient intake data should be considered in combination with clinical, biochemical, anthropometric information, medical diagnosis, clinical status, and/or other factors as well as diet to provide a valid assessment of nutritional status based on a totality of the evidence. (Institute of Medicine. Dietary Reference Intakes: Applications in Dietary Assessment. Washington, DC: National Academies Press; 2000.)

Nutrition Assessment and Monitoring and Evaluation

Indicators

Calcium (specify form, mg, frequency)	Selenium (specify form, µg, frequency)
Copper (µg or mg, frequency)	Zinc (mg, frequency)
Fluoride (mg, frequency)	Potassium (specify form, g or mg, frequency)
Iodine (µg, frequency)	Sodium (mg or g, frequency)
Iron (specify form, mg, frequency)	Chloride (mg, frequency)
Magnesium (mg, frequency)	Chromium (specify form, µg, frequency)
Phosphorus (mg, frequency)	Sulfate (g or mmol, frequency)
Manganese (mg, frequency)	Molybdenum (µg, frequency)
Boron (mg, frequency)	Cobalt (µg, frequency)
Multi-mineral (yes/no, specify dose, frequency)	
Multi-trace element (yes/no, specify dose, frequency)	

Examples of the measurement methods or data sources for these indicators: Patient/client report or recall, food frequency, home evaluation, home care or pharmacy report, supplement use questionnaire

Typically used with the following domains of nutrition interventions: Food and/or nutrient delivery, nutrition education, nutrition counseling, coordination of nutrition care

Typically used to determine and to monitor and evaluate change in the following nutrition diagnoses: Excessive or inadequate intake of minerals, food–medication interaction, altered nutrition-related laboratory values, impaired nutrient utilization, undesirable food choices, limited adherence to nutrition-related recommendations

Clinical judgment must be used to select indicators and determine the appropriate measurement techniques and reference standards for a given patient population and setting. Once identified, these indicators, measurement techniques, and reference standards should be identified in policies and procedures or other documents for use in patient/client records, quality or performance improvement, or in formal research projects.

Evaluation

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Nutrition Prescription or Goal (tailored to individual's needs)
- OR
- 2) Reference Standard

Patient/Client Example

Example(s) of one or two of the Nutrition Care Indicators (includes sample initial and reassessment documentation for one of the indicators)

Indicator(s) Selected

Sodium (mg or g, frequency)

Calcium (specify form, mg, frequency)

Mineral/Element Intake (FH-1.6.2)

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Nutrition Prescription or Goal: The patient/client's intake of sodium is approximately 6000 mg per day, which is above the nutrition prescription of 4000 mg per day.
OR
- 2) Reference Standard: The patient/client's intake of calcium is 500 mg per day which is 50% of the Adequate Intake (AI in the reference intake standard (e.g., DRIs)) for adult females, 31 to 50 years of age.

Sample Nutrition Assessment and Monitoring and Evaluation Documentation

<i>Initial nutrition assessment with patient/client</i>	Based on recall, patient/client consuming approximately 500 mg/day, which is below the adequate intake for calcium per day for females 31 to 50 years of age. Will monitor calcium intake at next encounter.
<i>Reassessment after nutrition intervention</i>	Significant progress toward the adequate intake of 1000 mg of calcium per day. Based on 3-day diet record, patient/client has increased consumption from 500 mg/day to 750 mg/day of the adequate daily intake for calcium.

References

The following are some suggested references for indicators, measurement techniques, and reference standards; other references may be appropriate.

1. Academy of Nutrition and Dietetics. Adult Weight Management Evidence-Based Guideline, 2006. Available at: <http://www.andevidencelibrary.com/topic.cfm?cat=2798>. Accessed January 26, 2012.
2. Academy of Nutrition and Dietetics. Nutrition Care Manual. Available at: www.nutritioncaremanual.org. Accessed January 26, 2012.
3. Appel LJ, Moore TJ, Obarzanek E, Vollmer WM, Svetkey LP, Sacks FM, Bray GA, Vogt TM, Cutler JA, Windhauser MM, Lin P, Karanja N, Simons-Morton D, McCullough M, Swain J, Steele P, Evans MA, Miller ER, Harsha DW. A clinical trial of the effects of dietary patterns on blood pressure. *N Engl J Med*. 1997;336:1117-1124.
4. US Department of Agriculture and Health and Human Services. Dietary Guidelines for Americans, 2010. Available at: <http://www.cnpp.usda.gov/dietaryguidelines.htm>. Accessed: January 24, 2012.
5. American Society for Parenteral and Enteral Nutrition Board of Directors and the Clinical Guidelines Task Force. Guidelines for the use of parenteral and enteral nutrition in adult and pediatric patients: Normal requirements—adults. *J Parenter Enteral Nutr*. 2002;26(Suppl):S22-S24.
6. American Society for Parenteral and Enteral Nutrition Board of Directors and the Clinical Guidelines Task Force. Guidelines for the use of parenteral and enteral nutrition in adult and pediatric patients: Normal requirements—pediatrics. *J Parenter Enteral Nutr*. 2002;26(Suppl):S25-S32.
7. Institute of Medicine. *Dietary Reference Intakes for Calcium and Vitamin D*. Washington, DC: National Academies Press; 2010.
8. Institute of Medicine. *Dietary Reference Intakes for Calcium, Phosphorus, Magnesium, Vitamin D, and Fluoride*. Washington, DC: National Academies Press; 1997.
9. Institute of Medicine. *Dietary Reference Intakes for Vitamin A, Vitamin K, Arsenic, Boron, Chromium, Copper, Iodine, Iron, Manganese, Molybdenum, Nickel, Silicon, Vanadium, Zinc*. Washington, DC: National Academies Press; 2001.
10. Institute of Medicine. *Dietary Reference Intakes for Vitamin C, Vitamin E, Selenium, and Carotenoids*. Washington, DC: National Academies Press; 2000.
11. Institute of Medicine. *Dietary Reference Intakes for Water, Potassium, Sodium, Chloride, and Sulfate*. Washington DC: National Academies Press; 2004.
12. Academy of Nutrition and Dietetics. Pediatric Nutrition Care Manual. Available at: <http://peds.nutritioncaremanual.org>. Accessed January 26, 2012.
13. Your Guide to Lowering Your Blood Pressure. Available at: http://www.nhlbi.nih.gov/hbp/prevent/h_eating/h_eating.htm. Accessed April 23, 2012.

Updated: 2013 Edition

Diet Order (FH-2.1.1)

Definition

A general or modified diet prescribed and documented in a patient/client medical record by a credentialed provider as part of a medical treatment plan

Nutrition Assessment

Indicators

General, healthful diet

Modified diet, specify, e.g., type, amount of energy and/or nutrients/day, distribution, texture

Enteral nutrition order, specify, e.g., formula, rate/schedule, access

Parenteral nutrition order, specify, e.g., solution, access, rate

Examples of the measurement methods or data sources for these indicators: Medical record, referring health care provider or agency, resident/client history

Typically used with the following domains of nutrition interventions: Food and/or nutrient delivery, nutrition education, nutrition counseling, coordination of nutrition care, resident/client history

Typically used with the following nutrition diagnoses: Inadequate or excessive energy, macronutrient or micronutrient intake, inadequate or excessive oral intake, swallowing difficulty

Clinical judgment must be used to select indicators and determine the appropriate measurement techniques and reference standards for a given patient population and setting. Once identified, these indicators, measurement techniques, and reference standards should be identified in policies and procedures or other documents for use in patient/client records, quality or performance improvement, or in formal research projects.

Evaluation

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal (tailored to patient/client needs)
- OR
- 2) Reference Standard

Patient/Client Example(s)

Example(s) of one or two of the Nutrition Care Indicators (includes sample initial assessment documentation for one of the indicators)

Indicator(s) Selected

Modified diet

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal: Not generally used
- OR
- 2) Reference Standard: No validated standard exists

Sample nutrition assessment documentation

Initial nutrition assessment with patient/client	Patient/client prescribed a 2,400 calorie or kcal (10,050 kJ) diabetic diet.
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Diet Order (FH-2.1.1)

References

The following are some suggested references for indicators, measurement techniques, and reference standards; other references may be appropriate.

1. Hager M. Hospital therapeutic diet orders and the Centers for Medicare & Medicaid Services: steering through regulations to provide quality nutrition care and avoid survey citations. *J Am Diet Assoc.* 2006;106(2):198-204.
2. Academy of Nutrition and Dietetics. Nutrition Care Manual. Available at: www.nutritioncaremanual.org. Accessed January 26, 2012
3. Hager M. Therapeutic diet order writing: current issues and considerations. *Topic Clin Nutr.* 2007;22:28-36.
4. Position of the American Dietetic Association: Individualized Nutrition Approaches for Older Adults in Health Care Communities. *J Am Diet Assoc.* 2010;110:1554-1563.

Updated: 2013 Edition

Diet Experience (FH-2.1.2)

Definition

Previous nutrition/diet orders, diet education/counseling, and diet characteristics that influence patient/client's dietary intake

Nutrition Assessment

Indicators

Previously prescribed diets

- Previous modified diet (specify, e.g., type, amount of energy and/or nutrients/day, distribution, texture)
- Enteral nutrition order (specify)
- Parenteral nutrition order (specify)

Previous diet/nutrition education/counseling (specify, e.g., type, year)

Self-selected diets followed (specify, e.g., commercial diets, diet books, culturally directed)

Dieting attempts

- Number of past diet attempts (number)
- Results (specify, e.g., successful/unsuccessful, pounds or kg lost)
- Successful strategies (specify, e.g., no snacking, self-monitoring)

Food allergies

- Previous modified diet (specify, e.g., type and/or foods/food group) followed as a result of diagnosed or reported food allergy

Food intolerance

- Previous modified diet (specify, e.g., type and/or foods/food group) followed as a result of diagnosed or reported food intolerance

Examples of the measurement methods or data sources for these indicators: Patient/client report, medical record, patient/client history, food and nutrition delivery coordination of care

Typically used with the following domains of nutrition interventions: Nutrition education, nutrition counseling

Typically used with the following nutrition diagnoses: Disordered eating pattern, not ready for diet/lifestyle change, excessive oral intake, food- and nutrition-related knowledge deficit, unsupported beliefs/attitudes about food- or nutrition-related topics, undesirable food choices, swallowing difficulty, intake of unsafe food

Clinical judgment must be used to select indicators and determine the appropriate measurement techniques and reference standards for a given patient population and setting. Once identified, these indicators, measurement techniques, and reference standards should be identified in policies and procedures or other documents for use in patient/client records, quality or performance improvement, or in formal research projects.

Evaluation

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal (tailored to patient/client needs)
- OR
- 2) Reference Standard

Patient/Client Example(s)

Example(s) of one or two of the Nutrition Care Indicators (includes sample initial assessment documentation for one of the indicators)

Indicator(s) Selected

Previous diet/nutrition education/counseling

Diet Experience (FH-2.1.2)

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal: Not generally used
OR
- 2) Reference Standard: No validated standard exists

Sample nutrition assessment documentation

<i>Initial nutrition assessment with patient/client</i>	Patient/client completed a 6-week diabetic education class two years ago.
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References

The following are some suggested references for indicators, measurement techniques, and reference standards; other references may be appropriate.

1. Hager M. Hospital therapeutic diet orders and the Centers for Medicare & Medicaid Services: steering through regulations to provide quality nutrition care and avoid survey citations. *J Am Diet Assoc.* 2006; 106 (2):198-204.
2. Academy of Nutrition and Dietetics. Nutrition Care Manual. Available at: www.nutritioncaremanual.org. Accessed January 26, 2012.
3. Hager M. Therapeutic diet order writing: current issues and considerations. *Topic Clin Nutr.* 2007;22:28-36.

Updated: 2013 Edition

Eating Environment (FH-2.1.3)

Definition

The aggregate of surrounding things, conditions, or influences that affect food intake

Nutrition Assessment and Monitoring and Evaluation

Indicators

Location (specify, e.g., home, school, day care, restaurant, nursing home, senior center)

Atmosphere

- Acceptable noise level (yes/no)
- Appropriate lighting (yes/no)
- Appropriate room temperature (yes/no)
- Appropriate table height (yes/no)
- Appropriate table service (e.g., plates, napkins)/meal service (type of service, e.g., table service, buffet)/set-up (make food accessible for consumption) (yes/no)
- Eats at designated eating location (does not wander) (yes/no)
- Eats without distractions (e.g., watching TV/reading) (yes/no)
- No unpleasant odors (yes/no)

Caregiver/companion

- Allowed to select foods (often, sometimes, never)
- Caregiver influences/controls what client eats (e.g., encourages, forces) (yes/no)
- Caregiver models expected eating behavior (yes/no)
- Caretaker presence (present/not present)
- Favorite food is offered or withheld to influence behavior (reward/punishment) (yes/no)
- Has companionship while eating (another or others present) (yes/no)
- Meal/snacks offered at consistent times (“grazing” discouraged) (yes/no)

Appropriate breastfeeding accommodations/facility (yes/no)

Eats alone (specify reason, frequency)

Examples of the measurement methods or data sources for these indicators: Patient/client report, medical record, referring health care provider or agency, observation

Typically used with the following domains of nutrition interventions: Food and/or nutrient delivery, nutrition education, nutrition counseling, coordination of nutrition care

Typically used to determine and to monitor and evaluate change in the following nutrition diagnoses:

Inadequate oral intake, self-feeding difficulty, poor nutrition quality of life, limited access to food

Clinical judgment must be used to select indicators and determine the appropriate measurement techniques and reference standards for a given patient population and setting. Once identified, these indicators, measurement techniques, and reference standards should be identified in policies and procedures or other documents for use in patient/client records, quality or performance improvement, or in formal research projects.

Evaluation

Criteria for Evaluation

Comparison to Goal or Reference Standard:

1) Goal (tailored to patient/client needs)

OR

2) Reference Standard

Patient/Client Example(s)

Example(s) of one or two of the Nutrition Care Indicators (includes sample initial and reassessment documentation for one of the indicators)

Eating Environment (FH-2.1.3)

Indicator(s) Selected

Eats at designated eating location

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal: Two-year-old child with inadequate intake of calories/kcal/kJ and/or nutrients. Goal is to improve intake through modifications in feeding environment and meal pattern.
- OR
- 2) Reference Standard: No validated standard exists

Sample Nutrition Assessment and Monitoring and Evaluation Documentation

<i>Initial nutrition assessment with patient/client</i>	Caregiver completed 3-day food record indicating multiple (10) feeding opportunities throughout the day. Child consumes mostly juice, dry cereal, and chips. Prefers foods that can be consumed from bottle or finger foods. Child does not sit at the table to eat, but wanders the house and is allowed to request and receive snacks ad lib. Energy and nutrient intake is less than 75% of standard. Referral to behavioral specialist offered.
<i>Reassessment after nutrition intervention</i>	Caregiver completed follow-up 3-day food record indicating reduced number of feeding opportunities throughout the day (6 to 7). States child resisted at first, but now eats at table at regular meal/snack times. Caregiver is continuing to work with behavioral specialist for both mealtime and other behavior issues. Energy and nutrient intake have improved to 85 to 90% of standard.

References

The following are some suggested references for indicators, measurement techniques, and reference standards; other references may be appropriate.

1. Spruijt-Metz D, Lindquist CH, Birch LL, Fisher JO, Goran MI. Relation between mothers' child-feeding practices and children's adiposity. *Am J Clin Nutr*. 2002;75:581-586.
2. Boutelle KN, Birmbaum AS, Lytle LA, Murray DM, Story M. Associations between perceived family meal environment and parent intake of fruit, vegetables and fat. *J Nutr Educ Behav*. 2003;35:24-29.
3. Birch LL, Fisher JO. Development of eating behaviors among children and adolescents. *Pediatrics*. 1998;101:539-549.
4. O'Dea JA. Why do kids eat healthful food? Perceived benefits of and barriers to healthful eating and physical activity among children and adolescents. *J Am Diet Assoc*. 2003;103(4):497-501.
5. Birch LL, Fisher JO. Mothers' child-feeding practices influence daughters' eating and weight. *Am J Clin Nutr*. 2000; 71:1054-1061.
6. Birch LL. Development of food preferences. *Annu Rev Nutr*. 1999;19:41-62.
7. Campbell K, Crawford, D. Family food environments as determinants of preschool-aged children's eating behaviours: implications for obesity prevention policy. *Aust J Nutr Diet*. 2005;58:19-25.
8. Hurtsi UK. Factors influencing children's food choice. *Ann Med*. 1999;31(Suppl 1):26-32.
9. Birch LL, Fisher JO, Davison KK. Learning to overeat: maternal use of restrictive feeding practices promotes girls' eating in the absence of hunger. 2003. *Am J Clin Nutr*. 78:215-220.
10. Wansink B, Cheney MM. Super bowls: serving bowl size and food consumption. *JAMA*. 2005;293:1727-1728.
11. Wansink B. Environmental factors that increase the food intake and consumption volume of unknowing consumers. *Annu Rev Nutr*. 2004;24:455-479.
12. Rozin P, Kabnick K, Pete E, Fischler C, Shields C. The ecology of eating: smaller portion sizes in France than in the United States help explain the French paradox. *Psychol Sci*. 2003;14:450-454.
13. Rozin P. The meaning of food in our lives: a cross-cultural perspective on eating and well-being. *J Nutr Educ Behav*. 2005;37(suppl): 107-112.
14. Birch LL, Davison KK. Family environmental factors influencing the developing behavioral controls of food intake and childhood overweight. *Pediatr Clin North Am*. 2001;48(4):893-907.
15. Hetherington MM. Cues to overeat: psychological factors influencing overconsumption. *Proc Nutr Soc*. 2007;66(1):113-23.

Updated: 2011 Edition

Enteral and Parenteral Nutrition Administration (FH-2.1.4)

Definition

Delivery of enteral and/or parenteral nutrition.

Nutrition Assessment and Monitoring and Evaluation

Indicators

Enteral access, specify, e.g., nasogastric, orogastric, percutaneous, or surgical access with gastric, duodenal or jejunal placement

Parenteral access, specify, e.g., peripheral, central, and/or type of catheter

Body position, enteral nutrition (EN), specify, e.g., degree angle

Examples of the measurement methods or data sources for these indicators: Patient/client report/recall, patient/client record, patient/client nutrition-focused physical exam, provider referral

Typically used with following domains of nutrition interventions: Food and/or nutrient delivery, nutrition education, coordination of nutrition care

Typically used to determine the following nutrition diagnoses: Inadequate or excessive enteral or parenteral nutrition infusion, inadequate fluid intake, predicted food–medication interaction

Clinical judgment must be used to select indicators and determine the appropriate measurement techniques and reference standards for a given patient population and setting. Once identified, these indicators, measurement techniques, and reference standards should be identified in policies and procedures or other documents for use in patient/client records, quality or performance improvement, or in formal research projects.

Evaluation

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal (tailored to patient/client's needs)
- OR
- 2) Reference Standard

Patient/Client Example(s)

Example(s) of one or two of the Nutrition Care Indicators (includes sample initial and reassessment documentation for one of the indicators)

Indicator(s) Selected

Enteral access (nasogastric)

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal: Patient/client's enteral nutrition is delivered via nasogastric feeding tube which will remain patent so patient/client can receive feeding to meet estimated nutrition requirements.
- OR
- 2) Reference Standard: There is no reference standard for this outcome.

Sample Nutrition Assessment and Monitoring and Evaluation Documentation

Initial nutrition assessment with patient/client	Patient/client's enteral nutrition is delivered via nasogastric feeding tube which will remain patent so patient/client can receive feeding to meet estimated nutrition requirements. Monitor enteral nutrition feeding access for patency.
Reassessment after nutrition intervention	Enteral nutrition via nasogastric feeding tube is blocked requiring replacement of feeding tube.

Enteral and Parenteral Nutrition Administration (FH-2.1.4)

References

The following are some suggested references for indicators, measurement techniques, and reference standards; other references may be appropriate.

1. Academy of Nutrition and Dietetics. Critical illness evidence-based nutrition guideline, 2006. Available at: http://www.andevidencelibrary.com/template.cfm?key=767&cms_preview=1. Accessed January 26, 2012.
2. American Society for Parenteral and Enteral Nutrition Board of Directors and the Clinical Guidelines Task Force. Guidelines for the use of parenteral and enteral nutrition in adult and pediatric patients: administration of specialized nutrition support—issues unique to pediatrics. *J Parenter Enteral Nutr.* 2002;26(Suppl):S97-S110.
3. American Society for Parenteral and Enteral Nutrition Board of Directors and the Clinical Guidelines Task Force. Guidelines for the use of parenteral and enteral nutrition in adult and pediatric patients: access for administration of nutrition support. *J Parenter Enteral Nutr.* 2002;26(1 Suppl):33SA-41SA.
4. Kovacevich DS, Frederick A, Kelly D, Nishikawa R, Young L, American Society for Parenteral and Enteral Nutrition Board of Directors Standards for Specialized Nutrition Support Task Force. Standards for specialized nutrition support: home care patients. *Nutr Clin Pract.* 2005;20:579-590.
5. Steiger E, HPEN Working Group. Consensus statements regarding optimal management of home parenteral nutrition (HPN) access. *J Parenter Enteral Nutr.* 2006;30(1 Suppl):S94-S95.

Updated: 2013 Edition

Medications (FH-3.1)

Definition

Prescription and over-the-counter (OTC) medications that may impact nutritional status

Nutrition Assessment and Monitoring and Evaluation

Indicators

Prescription medication use

- Current prescriptions with nutrient/food–medication interactions, specify
- Insulin or insulin secretagogues, specify
- Medication, alter blood pressure, specify
- Medication, alter breastmilk production, specify
- Medication, lipid lowering, specify
- Medications, alter glucose levels, specify
- Other, specify

Over-the-counter (OTC) medications use

- Current OTC products with nutrient/food–medication implications, specify
- Medication, alter blood pressure, specify
- Medication, alter breastmilk production, specify
- Medication, lipid lowering, specify
- Medications, alter glucose levels, specify
- Other, specify

Misuse of medications (e.g., accidental overdose, illegal drugs, laxatives, diuretics, drug use during pregnancy), specify

Note: Vitamin and mineral supplements can be found on the vitamin and mineral intake reference sheets. Alcohol is found on the Alcohol Intake reference sheet

Examples of the measurement methods or data sources for these indicators: Patient/client report, medical record, referring health care provider or agency

Typically used with following domains of nutrition interventions: Food and/or nutrient delivery, nutrition education, nutrition counseling, coordination of nutrition care

Typically used to determine the following nutrition diagnoses: Food–medication interaction, increased energy expenditure, malnutrition, inadequate or excessive energy, food/beverage, fluid, carbohydrate, protein, fat, vitamin and mineral intake, unintended weight gain or loss, overweight/obesity, underweight, disordered eating pattern

Clinical judgment must be used to select indicators and determine the appropriate measurement techniques and reference standards for a given patient population and setting. Once identified, these indicators, measurement techniques, and reference standards should be identified in policies and procedures or other documents for use in patient/client records, quality or performance improvement, or in formal research projects.

Evaluation

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal (tailored to patient/client's needs)
- OR
- 2) Reference Standard

Medications (FH-3.1)

Patient/Client Example(s)

Example(s) of one or two of the Nutrition Care Indicators (includes sample initial and reassessment documentation for one of the indicators)

Indicator(s) Selected

Prescription medication with nutrient/food–medication interactions—Prednisone

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal: Patient/client with prescription for 50 mg/d prednisone and concerned about concurrent weight gain caused by increased appetite and fluid retention. Goal is to minimize weight gain and maintain good nutritional status during prednisone therapy.
OR
- 2) Reference Standard: Not applicable

Sample Nutrition Assessment and Monitoring and Evaluation Documentation

<i>Initial nutrition assessment with patient/client</i>	Patient/client's prescription medication is 50 mg/d prednisone for rheumatoid arthritis. Current weight 182 lb (83 kg). Long-term therapy may result in a need for protein, calcium, potassium, phosphorus, folate and vitamin A, C, and D supplementation. Patient/client currently taking a vitamin/mineral supplement and concerned about weight gain caused by increased appetite and fluid retention.
<i>Reassessment after nutrition intervention</i>	Patient/client's prescription medication prednisone dose reduced to 25 mg/d. Currently taking a one-a-day multivitamin/multimineral and snacking on raw vegetables between meals. Weight stable.

References

The following are some suggested references for indicators, measurement techniques, and reference standards; other references may be appropriate.

1. Charney P, Malone A. *ADA Pocket Guide to Nutrition Assessment*. 2nd ed. Chicago, IL: American Dietetic Association; 2009.
2. Position of the American Dietetic Association: Integration of medical nutrition therapy and pharmacotherapy. *J Am Diet Assoc*. 2010;110:950-956.
3. Pronksy ZM. *Food–Medication Interactions*. 16th ed. Birchrunville, PA: Food–Medication Interactions; 2010.
4. Academy of Nutrition and Dietetics. Nutrition Care Manual. Available at: www.nutritioncaremanual.org. Accessed January 26, 2012.

Updated: 2013 Edition

Complementary/Alternative Medicine (FH-3.2)

Definition

Complementary and alternative medicine products, including herbal preparations that may impact nutritional status

Nutrition Assessment and Monitoring and Evaluation

Indicators

Nutrition-related complementary/alternative medicine use (e.g., ginkgo, St. John's Wart, elderberry, garlic, ephedra)

Note: Vitamin and mineral supplements can be found on the vitamin and mineral intake reference sheets. Alcohol is found on the Alcohol Intake reference sheet

Examples of the measurement methods or data sources for these indicators: Patient/client report, medical record, referring health care provider or agency

Typically used with following domains of nutrition interventions: Food and/or nutrient delivery, nutrition education, nutrition counseling, coordination of nutrition care

Typically used to determine the following nutrition diagnoses: Food–medication interaction, increased energy expenditure, malnutrition, unintended weight gain or loss, overweight/obesity, intake of unsafe foods, disordered eating pattern

Clinical judgment must be used to select indicators and determine the appropriate measurement techniques and reference standards for a given patient population and setting. Once identified, these indicators, measurement techniques, and reference standards should be identified in policies and procedures or other documents for use in patient/client records, quality or performance improvement, or in formal research projects.

Evaluation

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal (tailored to patient/client's needs)
OR
- 2) Reference Standard

Patient/Client Example(s)

Example(s) of one or two of the Nutrition Care Indicators (includes sample initial and reassessment documentation for one of the indicators)

Indicator(s) Selected

Complementary/alternative medicine use—ephedra

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal: Patient/client taking ephedra with the hope that it will promote weight loss. Goal is to have patient/client eliminate ephedra for safety reasons and engage in nutrition counseling for weight management.
OR
- 2) Reference Standard: Not applicable

Complementary/Alternative Medicine (FH-3.2)

Sample Nutrition Assessment and Monitoring and Evaluation Documentation

<i>Initial nutrition assessment with patient/client</i>	Patient/client complementary/alternative medicine use of ephedra is for weight loss. Patient/client reports being unaware of safety concerns.
<i>Reassessment after nutrition intervention</i>	Patient/client complementary/alternative medicine use of ephedra has stopped and success with weight loss as a result of nutrition counseling.

References

The following are some suggested references for indicators, measurement techniques, and reference standards; other references may be appropriate.

1. Charney P, Malone A. *ADA Pocket Guide to Nutrition Assessment*. 2nd ed. Chicago, IL: American Dietetic Association; 2009.
2. Pronksy ZM. *Food–Medication Interactions*. 16th ed. Birchrunville, PA: Food–Medication Interactions; 2010.
3. Academy of Nutrition and Dietetics. Nutrition Care Manual. Available at: www.nutritioncaremanual.org. Accessed January 26, 2012.
4. Thomson CA. Practice paper of the American Dietetic Association: Dietary supplements. *J Am Diet Assoc*. 2005;105(3):460–470.
5. Pediatric Weight Management Evidence Based Nutrition Practice Guideline, Adjunct Therapies. Academy of Nutrition and Dietetics Evidence Analysis Library. Available at: <http://www.andevidencelibrary.com/topic.cfm?cat=2724>. Accessed January 26, 2012.
6. National Institutes of Health and the National Center for Complementary and Alternative Medicine. Available at: <http://nccam.nih.gov/health>. Accessed January 26, 2012.

Created: 2013 Edition

Food and Nutrition Knowledge/Skill (FH-4.1)

Definition

Content areas and level of understanding about food, nutrition and health, or nutrition-related information and guidelines relevant to patient/client needs

Nutrition Assessment and Monitoring and Evaluation

Indicators

Use the following terms to specify *level of knowledge/skill* by each area of concern:

- *Inadequate*
- *Basic* (survival, identify facts, little application)
- *Moderate* (some application in typical situations)
- *Comprehensive* (synthesize and evaluate for application in new situations)

Area(s) and level of knowledge/skill

- | | |
|--|---|
| • Breastfeeding (e.g., signs of infant satiety) | • Nutrition recommendations |
| • Consequences of food behavior | • Physiological functions |
| • Disease/condition | • Self-management parameters |
| • Goal-setting techniques | • Control food portions |
| • Food label | • Food preparation/cooking |
| • Food products | • Manage behavior in response to stimuli (e.g., identify triggers/cues, develop a plan, modify environment or behavior) |
| • Food/nutrient requirements | • Plan meals/snacks |
| • Health knowledge gap (e.g., understanding of health or health guidance versus true health) | • Select healthful foods/meals |
| • Health care literacy | • Self-monitor |
| • Laboratory results compared to desirable | • Other (specify topic and level of knowledge) |
| • Level of physical conditioning | |

Diagnosis specific or global nutrition-related knowledge score (specify instrument used, e.g., Type 2 Diabetes BASICS Pre/Post Knowledge Test and score)

Examples of the measurement methods or data sources for this indicator: Pre- and/or post-tests administered orally, on paper, or by computer, scenario discussions, patient/client restates key information, review of food records, practical demonstration/test, survey, nutrition quotient, nutrition questionnaire, nutrition assessment inventory

Typically used to determine and monitor and evaluate change in the following domains of nutrition interventions: Nutrition education, nutrition counseling

Typically used to determine and to monitor and evaluate change in the following nutrition diagnoses: Food- and nutrition-related knowledge deficit, limited adherence to nutrition-related recommendations, undesirable food choices, breastfeeding difficulty, overweight/obesity, intake domain

Clinical judgment must be used to select indicators and determine the appropriate measurement techniques and reference standards for a given patient population and setting. Once identified, these indicators, measurement techniques, and reference standards should be identified in policies and procedures or other documents for use in patient/client records, quality or performance improvement, or in formal research projects.

Food and Nutrition Knowledge/Skill (FH-4.1)

Evaluation

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal (tailored to individual's needs)
- OR
- 2) Reference Standard

Patient/Client Example(s)

Example(s) of one or two of the Nutrition Care Indicators (includes sample initial and reassessment documentation for one of the indicators)

Indicator(s) Selected

Area and level of knowledge (carbohydrate counting)

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal: Patient/client will be able to accurately read a food label and identify the total number of grams of carbohydrate per serving.
- OR
- 2) Reference Standard: No validated standard exists.

Sample Nutrition Assessment and Monitoring and Evaluation Documentation

<i>Initial nutrition assessment with patient/client</i>	Patient/client with newly diagnosed diabetes with inadequate knowledge regarding carbohydrate counting.
<i>Reassessment after nutrition intervention</i>	Patient/client with basic knowledge regarding carbohydrate counting. Able to apply knowledge to common scenarios, but not consistently able to apply knowledge to own diet. Will continue to monitor at next encounter in one week.

References

The following are some suggested references for indicators, measurement techniques, and reference standards for the outcome; other references may be appropriate.

1. Bloom BS. *Taxonomy of Educational Objectives, Handbook I: The Cognitive Domain*. New York: David McKay Co Inc; 1956.
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Food and Nutrition Knowledge (FH-4.1)

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11. Shilts MK, Horowitz M, Townsend MS. Goal setting as a strategy for dietary and physical activity behavior change: a review of the literature. *Am J Health Promot.* 2004;19(2):81-93
12. Academy of Nutrition and Dietetics. Evidence Analysis Library. Available at: www.andevidencelibrary.com. Accessed January 26, 2012.
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Updated: 2013 Edition

Beliefs and Attitudes (FH-4.2)

Definition

Conviction of the truth of some nutrition-related statement or phenomenon, and feelings or emotions toward that truth or phenomenon, along with a patient/client's readiness to change food, nutrition, or nutrition-related behaviors

Nutrition Assessment and Monitoring and Evaluation

Indicators

Conflict with personal/family value system (specify)

Distorted body image (yes/no)

End-of-life decisions (specify)

Motivation

- Perceived susceptibility to nutrition-related health problems (e.g., patient/client believes he or she is diabetic or at high-risk for developing diabetes) (yes/no)
- Understanding of severity of risk to health/lifestyle (Perceived severity) (yes/no)
- Belief that benefits of diet change outweigh barriers (benefits are worth the sacrifice and effort) (yes/no)
- Verbalizes desire to change diet and nutrition-related behaviors (yes/no)

Preoccupation with food (yes/no)

Preoccupation with weight (yes/no)

Readiness to change nutrition-related behaviors

- Precontemplation (yes/no)
- Contemplation (yes/no)
- Preparation (yes/no)
- Action (yes/no)
- Maintenance (yes/no)

Self-efficacy

- Breastfeeding self-efficacy (specify, e.g., high, low)
- Eating self-efficacy (specify, e.g., high, low)
- Weight loss self-efficacy (specify, e.g., high, low)
- Other (specify)

Self-talk/cognitions (Documented cognitions related to food/nutrition activity) (positive/negative)

Unrealistic nutrition-related goals (specify, e.g., current weight loss goal of 20 lbs (9 kg)/month is unrealistic)

Unscientific beliefs/attitudes (specify, e.g., specific food with unsubstantiated curative power)

Food preferences (specify)

Emotions (specify, e.g., anger, guilt, sad, lonely, nervous)

Examples of the measurement methods or data sources for these outcome indicators: Patient/client self-report, patient/client assessment questionnaire or interview, medical record, referring health care provider or agency

Typically used to monitor and evaluate change in the following domains of nutrition interventions: Nutrition education, nutrition counseling

Typically used to determine and to monitor and evaluate change in the following nutrition diagnoses:

Unsupported beliefs/attitudes about food- or nutrition-related topics; not ready for diet/lifestyle change; inability to manage self-care; self-monitoring deficit, excessive or inadequate oral, energy, macronutrient, micronutrient or bioactive substance intake; imbalance of nutrients; less than optimal intake of types of fats; less than optimal intake of types of proteins or amino acids; underweight; overweight/obesity; disordered eating pattern; physical inactivity; excess physical activity; limited access to food and/or water

Clinical judgment must be used to select indicators and determine the appropriate measurement techniques and reference standards for a given patient population and setting. Once identified, these indicators, measurement techniques, and reference standards should be identified in policies and procedures or other documents for use in patient/client records, quality or performance improvement, or in formal research projects.

Beliefs and Attitudes (FH-4.2)

Evaluation

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal (tailored to individual's needs)
OR
- 2) Reference Standard

Patient/Client Example(s)

Example(s) of one or two of the Nutrition Care Indicators (includes sample initial and reassessment documentation for one of the indicators)

Indicator(s) Selected

Readiness to change nutrition-related behaviors

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal: Patient/client is currently in the precontemplation stage of change. Patient/client goal is to move to the preparation stage of change within 3 months.
OR
- 2) Reference Standard: No validated standard exists.

Sample Nutrition Assessment and Monitoring and Evaluation Documentation

<i>Initial nutrition assessment with patient/client</i>	Assessment results indicate patient/client is currently in the precontemplation stage of change related to need for DASH diet adherence. Will initiate motivational interviewing and reassess in two weeks.
<i>Reassessment after nutrition intervention</i>	Significant progress toward goal. Reassessment indicates that patient/client has moved from the precontemplation stage to the contemplation stage related to need for DASH diet adherence. Will reassess in two weeks.

References

The following are some suggested references for indicators, measurement techniques, and reference standards for the outcome; other references may be appropriate.

1. Glanz K. Current theoretical basis for nutrition intervention and their uses. In Coulston AM, Rock CL, Monsen E. *Nutrition in the Prevention and Treatment of Disease*. San Diego, CA: Academy Press; 2001:83-93.
2. US Department of Health and Human Services, National Institutes of Health, National Cancer Institute. Theory at a Glance: A Guide for Health Promotion Practice, Spring 2005. Available at: www.cancer.gov/cancertopics/cancerlibrary/theory.pdf. Accessed January 26, 2012.
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Beliefs and Attitudes (FH-4.2)

References, cont'd

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12. Kristal AR, Glanz K, Curry SJ, Patterson RE. How can stages of change be best used in dietary interventions? *J Am Diet Assoc*. 1999; 99:679-684.
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Updated: 2011 Edition

Adherence (FH-5.1)

Definition

Level of compliance or adherence with nutrition-related recommendations or behavioral changes agreed upon by patient/client to achieve nutrition-related goals

Nutrition Assessment and Monitoring and Evaluation

Indicators

Self-reported adherence score (Rated on scale of 1 to 10; 1 = Not adherent, 10 = Completely adherent)

Nutrition visit attendance (ratio, number attended/total)

Ability to recall nutrition goals (full, partial, none)

Self-monitoring at agreed upon rate (Rated on scale of 1 to 10; 1 = Not adherent, 10 = Completely adherent)

Self-management based on details agreed upon (within the nutrition plan) (Rated on scale of 1 to 10; 1 = Not adherent, 10 = Completely adherent)

Note: Use in conjunction with appropriate Food and Nutrition Intake, Anthropometric Data, and Biochemical Data reference sheets.

May be useful in relapse prevention treatment (analyze and control factors that caused the lapse).

Examples of the measurement methods or data sources for these indicators: Nutrition visit attendance, self-monitoring records (e.g., to evaluate fat, sodium, calories/kcal/kJ, diet quality), patient/client self-report, adherence tools or questionnaires, provider assessment

Typically used with the following domains of nutrition interventions: Food and/or nutrient delivery, nutrition education, nutrition counseling

Typically used to determine and to monitor and evaluate change in the following nutrition diagnosis: Limited adherence to nutrition-related recommendations

Clinical judgment must be used to select indicators and determine the appropriate measurement techniques and reference standards for a given patient population and setting. Once identified, these indicators, measurement techniques, and reference standards should be identified in policies and procedures or other documents for use in patient/client records, quality or performance improvement, or in formal research projects.

Evaluation

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal (tailored to individual's needs)
OR
- 2) Reference Standard

Patient/Client Example(s)

Example(s) of one or two of the Nutrition Care Indicators (includes sample initial and reassessment documentation for one of the indicators)

Indicator(s) Selected

Self-reported adherence score

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal: Patient/client rates herself a 4 on a scale of 1 to 10 (1 = Not adherent, 10 = Completely adherent) on her level of adherence to nutrition-related goals. Patient/client desires to move to a rating of 8.
OR
- 2) Reference Standard: No validated standard exists.

Adherence (FH-5.1)

Sample nutrition assessment monitoring and evaluation documentation

<i>Initial nutrition assessment with patient/client</i>	Patient/client rates herself a 1 on a scale of 1 to 10 on her ability to adhere to her meal plan. Patient/client set a goal to adhere to her meal plan 5 days per week. Will evaluate adherence at the next encounter.
<i>Reassessment after nutrition intervention</i>	Some progress toward goal. Patient/client rated herself a 6 on a scale of 1 to 10 on her ability to meet her adherence goal of following her meal plan 5 days per week. Is doing well on weekdays, but states she must improve on weekends. Discussed ways to improve adherence to meal plan on the weekends. Will monitor at next encounter in two weeks.

References

The following are some suggested references for indicators, measurement techniques, and reference standards for the outcome; other references may be appropriate.

1. Bosworth H, Oddone EZ, Weinberger M, eds. *Patient Treatment Adherence: Concepts, Interventions, and Measurement*. Psychology Press, 2005.
2. Haynes RB. Improving patient adherence: State of the art, with a special focus on medication taking for cardiovascular disorders. In: Burke LE, Ockene IS (eds). *Compliance in Healthcare and Research*. Armonk, NY: Futura Publishing Company; 2001:3-21.
3. Milas N, Nowalk MP, Akpele L, Castoldo L, Coyne T, Doroshenko L, Kigawa L, Korzec-Ramirez D, Scherch LK, Snetselaar L. Factors associated with adherence to the dietary protein intervention in the modification of diet in renal disease study. *J Am Diet Assoc*. 1995; 95:1295-1300.
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7. Rushe H, McGee HM. Assessing adherence to dietary recommendations for hemodialysis patients: the Renal Adherence Attitudes Questionnaire (RAAQ) and the Renal Adherence Behaviour Questionnaire (RABQ). *J Psychosom Res*. 1998;45:149-157.
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9. Tinker LF, Perri MG, Patterson RE, Bowen DJ, McIntosh M, Parker LM, Sevvick MA, Wodarski LA. The effects of physical and emotional status on adherence to a low-fat dietary pattern in the Women's Health Initiative. *J Am Diet Assoc*. 2002;102:789-800.

Avoidance Behavior (FH-5.2)

Definition

Keeping away from something or someone to postpone an outcome or perceived consequence

Nutrition Assessment and Monitoring and Evaluation

Indicators

Avoidance

- Specific foods (specify, e.g., grapefruit, seeds)
- Food groups (specify, e.g., milk/milk products)
- Fluids (specify)
- Textures (specify)
- Social situations (specify)
- Other (specify)

Restrictive eating (yes/no)

Cause of avoidance behavior (e.g., personal choice, prescribed dietary restriction, GI distress, suspected allergy, eating disorder, cancer treatment side effects, medications, mental illness, Parkinson's disease)

Examples of the measurement methods or data sources for these indicators: Self-monitoring records, patient/client interview

Typically used with the following domains of nutrition interventions: Nutrition counseling

Typically used to determine and to monitor and evaluate change in the following nutrition diagnoses:

Disordered eating pattern, overweight/obesity, underweight, altered GI function

Clinical judgment must be used to select indicators and determine the appropriate measurement techniques and reference standards for a given patient population and setting. Once identified, these indicators, measurement techniques, and reference standards should be identified in policies and procedures or other documents for use in patient/client records, quality or performance improvement, or in formal research projects.

Evaluation

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal (tailored to patient/client needs)
OR
- 2) Reference Standard

Patient/Client Example(s)

Example(s) of one or two of the Nutrition Care Indicators (includes sample initial and reassessment documentation for one of the indicators)

Indicator(s) Selected

Avoidance of social situations

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal: Patient/client avoiding social situations in an effort to avoid overeating. Goal is to learn strategies to control eating in social situations.
OR
- 2) Reference Standard: No validated standard exists

Avoidance Behavior (FH-5.2)

Sample Nutrition Assessment and Monitoring and Evaluation Documentation

<i>Initial nutrition assessment with patient/client</i>	Patient/client avoids social situations because she is afraid she will overeat. Reviewed client's food diary and client brainstormed strategies which may help her control eating in social situations. Patient/client will preplan food intake on days she has social engagements, will have a piece of fruit before going to help curb her appetite and will maintain a food diary.
<i>Reassessment after nutrition intervention</i>	Patient/client made some progress toward goal. Attended 2 of 4 social engagements where food was served, and successfully controlled food intake both times. Patient/client will continue to use strategies. Will reevaluate avoidance behavior at next encounter.

References

The following are some suggested references for indicators, measurement techniques, and reference standards for the outcome; other references may be appropriate.

1. Susan H. Barriers to effective nutritional care for older adults. *Nurs Stand* [serial online]. 2006;21:50-54.
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5. Watson L, Leslie W, Hankey C. Under-nutrition in old age: diagnosis and management. *Rev Clin Gerontol* [serial online]. 2006;16:23-34.
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7. Cassens D, Johnson E, Keelan S. Enhancing taste, texture, appearance, and presentation of pureed food improved resident quality of life and weight status. *Nutr Rev* [serial online]. 1996;54:S51.
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9. Joo SH, Wood RA. The impact of childhood food allergy on quality of life. *Pediatrics: Synopsis Book: Best Articles Relevant to Pediatric Allergy* [serial online]. 2003;112:459.
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13. Talley NJ. Irritable bowel syndrome. *Gastroenterol Clin N Am*. 2005;34(2):xi-xii,173-354.
14. Sverker A, Hensing G, Hallert C. Controlled by food—lived experiences of coeliac disease. *J Hum Nutr Diet*. 2005;18(3):171-180.
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16. Millson DS, Tepper SJ. Migraine treatment. *Headache. J Head Face Pain*. 2004;44(10):1059-61.
17. Brown AC, Hairfield M, Richards DG, McMillin DL, Mein EA, Nelson CD. Medical nutrition therapy as a potential complementary treatment for psoriasis—five case reports. *Alt Med Rev*. 2004; 9(3):297-307.
18. Biddle J, Anderson J. Report on a 12-month trial of food exclusion methods in a primary care setting. *J Nutr Environ Med*. 2002;12(1):11-17.

Bingeing and Purging Behavior (FH-5.3)

Definition

Eating a larger amount of food than normal for the individual during a short period of time (within any two-hour period) accompanied by a lack of control over eating during the binge episode (i.e., the feeling that one cannot stop eating). This may be followed by compensatory behavior to make up for the excessive eating, referred to as purging.

Nutrition Assessment and Monitoring and Evaluation

Indicators

Binge eating behavior (present/absent)

- Number of binge episodes (e.g., number/day, number/week, number/month)

Purging behavior (present/absent)

- Self-induced vomiting (number/day, number/week, number/month)
- Fasting (yes/no)
- Other (specify)

Note: Misuse of laxatives, diuretics or other drugs is found on the Medication and Herbal Supplements reference sheet.

Amount and type of physical activity is found on the Physical Activity reference sheet.

Examples of the measurement methods or data sources for these indicators: Patient/client interview, medical record, referring health care provider or agency, self-monitoring records

Typically used with following domains of nutrition interventions: Nutrition counseling

Typically used to determine and to monitor and evaluate change in the following nutrition diagnoses:

Excessive oral food/beverage intake, disordered eating pattern, overweight/obesity

Clinical judgment must be used to select indicators and determine the appropriate measurement techniques and reference standards for a given patient population and setting. Once identified, these indicators, measurement techniques, and reference standards should be identified in policies and procedures or other documents for use in patient/client records, quality or performance improvement, or in formal research projects.

Evaluation

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal (tailored to patient/client needs)
OR
- 2) Reference Standard

Patient/Client Example(s)

Example(s) of one or two of the Nutrition Care Indicators (includes sample initial and reassessment documentation for one of the indicators)

Indicator(s) Selected

Number of binge episodes

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal: Patient/client reports 3 binge eating episodes per week. Goal is to reduce binge eating to one episode per week.
OR
- 2) Reference Standard: No validated standard exists.

Bingeing and Purging Behavior (FH-5.3)

Sample Nutrition Assessment and Monitoring and Evaluation Documentation

Initial encounter with patient/client	Patient/client reports 3 binge-eating episodes this week.
Reassessment after nutrition intervention	Some progress toward goal. Patient/client reported 2 binge eating episodes this week. Will continue to monitor at next encounter.

References

The following are some suggested references for indicators, measurement techniques, and reference standards for the outcome; other references may be appropriate.

1. Fairburn CG, Wilson GT. *Binge Eating: Nature, Assessment and Treatment*. New York: Guilford Press; 1993.
2. Snetselaar LG. *Nutrition Counseling Skills for Medical Nutrition Therapy*. 2nd ed. Gaithersburg, MD: Aspen Press; 2007.
3. Kellogg M. *Counseling Tips for Nutrition Therapists: Practice Workbook*. Philadelphia, PA: Kg Press; 2006.
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5. Telch CF, Agras WS, Linehan MM. Dialectical behavior therapy for binge eating disorder. *J Consult Clin Psychol*. 2001;69(6):1061-1065.
6. Safer DL, Lively TJ, Telch CF, Agras WS. Predictors of relapse following successful dialectical behavior therapy for binge eating disorder. *Int J Eat Disord*. 2002;32(2):155-163.
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10. Ljotsson B, Lundin C, Mitsell K, Carlbring P, Ramklint M, Ghaderi A. Remote treatment of bulimia nervosa and binge eating disorder: a randomized trial of Internet-assisted cognitive behavioural therapy. *Behav Res Ther*. 2007;45(4):649-661. Epub 2006.
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12. Position of the American Dietetic Association. Nutrition intervention in the treatment of eating disorders. *J Am Diet Assoc*. 2011;111:1236-1241.

Mealtime Behavior (FH-5.4)

Definition

Manner of acting, participating, or behaving at mealtime which influences patient/client's food and beverage intake

Nutrition Assessment and Monitoring and Evaluation

Indicators

Meal duration (minutes)	Patient/client/caregiver fatigue during feeding process, resulting in inadequate intake (yes/no)
Percent of meal time spent eating (percent)	Willingness to try new foods (yes/no)
Preference to drink rather than eat (yes/no)	Limited number of accepted foods (specify)
Refusal to eat/chew (specify, e.g., meal, food type)	Rigid sensory preferences (flavor, temperature, texture)
Spitting food out (specify, e.g., food type, frequency)	
Rumination (yes/no)	

Examples of the measurement methods or data sources for these indicators: Observation, medical record, referring health care provider or agency, caregiver observation, patient/client interview

Typically used with following domains of nutrition interventions: Food and/or nutrient delivery, coordination of nutrition care

Typically used to determine and to monitor and evaluate change in the following nutrition diagnoses:
Self-feeding difficulty, inadequate and excessive oral intake

Clinical judgment must be used to select indicators and determine the appropriate measurement techniques and reference standards for a given patient population and setting. Once identified, these indicators, measurement techniques, and reference standards should be identified in policies and procedures or other documents for use in patient/client records, quality or performance improvement, or in formal research projects.

Evaluation

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal (tailored to patient/client needs)
OR
- 2) Reference Standard

Patient/Client Example(s)

Example(s) of one or two of the Nutrition Care Indicators (includes sample initial and reassessment documentation for one of the indicators)

Indicator(s) Selected

Percent of meal spent eating (percentage)

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal: Four-year-old patient/client with inadequate food/beverage intake. Lunch meal observation revealed less than 10% of mealtime was spent eating. Goal is to reduce environmental distractions and increase percent of meal spent eating to 55%.
OR
- 2) Reference Standard: No validated standard exists

Mealtime Behavior (FH-5.4)

Sample Nutrition Assessment and Monitoring and Evaluation Documentation

<i>Initial nutrition assessment with patient/client</i>	Lunch meal observation revealed that patient/client is highly distracted and spends less than 10% of the mealtime eating.
<i>Reassessment after nutrition intervention</i>	Significant progress toward goal. Environmental distractions were minimized and caregiver eats meals with patient/client. Observation reveals that approximately 40% of mealtime is spent eating. Will monitor at next encounter.

References

The following are some suggested references for indicators, measurement techniques, and reference standards; other references may be appropriate.

1. Powers SW, Patton SR, Byars KC, Mitchell MJ, Jelalian E, Mulvihill MM, Hovell MF, Stark LJ. Caloric intake and eating behavior in infants and toddlers with cystic fibrosis. *Diabetes Care*. 2002;109(5):e75.
2. Wardle J, Guthrie CA, Sanderson S, Rapoport L. Development of the Children's Eating Behaviour Questionnaire. *J Child Psychol Psychiatr*. 2001;42(7):963-970.
3. Chial HJ, Camilleri M, Williams DE, Litzinger K, Perrault J. Rumination Syndrome in children and adolescents: diagnosis, treatment and prognosis. *Pediatrics*. 2003;111:158-162.
4. Fung EB, Samson-Fang L, Stallings VA, Conaway M, Liptak G, Henderson RC, Worley G, O'Donnell M, Calvert B, Rosenbaum P, Chumlea W, Stevenson RD. Feeding dysfunction is associated with poor growth and health status in children with cerebral palsy. *J Am Diet Assoc*. 2002;102:361-368,373.
5. Lucas B, Pechstein S, Ogata B. Nutrition concerns of children with autism spectrum disorders. *Nutr Focus*. 2002;17:1-8.
6. Adams RA, Gordon C, Spangler AA. Maternal stress in caring for children with feeding disabilities: implications for health care providers. *J Am Diet Assoc*. 1999;99:962-966.
7. Ramsay M, Gisel EG, Boutry M. Non-organic failure to thrive: growth failure secondary to feeding-skills disorder. *Develop Med Child Neurol*. 1993;35:285-297.

Social Network (FH-5.5)

Definition

Ability to build and utilize a network of family, friends, colleagues, health professionals, and community resources for encouragement, emotional support, and to enhance one's environment to support behavior change

Nutrition Assessment and Monitoring and Evaluation

Indicators

Ability to build and utilize social networks (e.g., may include perceived social support, social integration, and assertiveness)

Examples of the measurement methods used or data sources for these indicators: Self-monitoring records, client/patient self-report, goal-tracking tools

Typically used with the following domains of nutrition interventions: Nutrition counseling

Typically used to determine and to monitor and evaluate change in the following nutrition diagnoses:

Intake domain, underweight, overweight/obesity, disordered eating pattern, undesirable food choices, inability to manage self-care, breastfeeding difficulty, not ready for diet/lifestyle change, limited adherence to nutrition-related recommendations

Clinical judgment must be used to select indicators and determine the appropriate measurement techniques and reference standards for a given patient population and setting. Once identified, these indicators, measurement techniques, and reference standards should be identified in policies and procedures or other documents for use in patient/client records, quality or performance improvement, or in formal research projects.

Evaluation

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal (tailored to individual's needs)
- OR
- 2) Reference Standard

Patient/Client Example

Example(s) of one or two of the Nutrition Care Indicators (includes sample initial and reassessment documentation for one of the indicators)

Indicator(s) Selected

Ability to build and utilize social support (e.g., may include perceived social support, social integration, and assertiveness)

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal: Overweight patient/client's wife adds fat to all foods prepared at home. Goal is to reduce the amount of fat in meals prepared at home by asking wife to not dress the salad or add fat seasoning to vegetables before serving.
- OR
- 2) Reference Standard: No validated standard exists.

Social Network (FH-5.5)

Sample Nutrition Assessment and Monitoring and Evaluation Documentation

<i>Initial encounter with patient/client</i>	Patient/client states that he rarely verbalizes his nutrition-related desires/needs in family or social situations and rates his ability to elicit social support a 3 on a scale of 1 to 10. Will evaluate at the next encounter.
<i>Reassessment at a later date</i>	Some progress toward goal. Patient/client rated himself a 5, on a scale of 1 to 10, on his ability to elicit social support. Has begun to verbalize his needs and plans to research restaurants that meet his needs that others will enjoy. Will monitor at next encounter in two weeks.

References

The following are some suggested references for indicators, measurement techniques, and reference standards for the outcome; other references may be appropriate.

1. Barrera M, Toobert D, Angell K, Glasgow R, Mackinnon D. Social support and social-ecological resources as mediators of lifestyle intervention effects for type 2 diabetes. *J Health Psychol.* 2006;11:483-495.
2. Sherbourne CD, Stewart AI. The MOS Social Support Survey. *Social Sci Med.* 1991;32:706-714.
3. Barrera M Jr, Glasgow RE, McKay HG, Boles SM, Feil E. Do internet-based support interventions change perceptions of social support?: an experimental trial of approaches for supporting diabetes self-management. *Am J Comm Psychol.* 2002; 30:637-654.
4. LaGreca AM, Bearman KJ. The diabetes social support questionnaire-family version: evaluating adolescents' diabetes-specific support from family members. *J Pediatr Psychol.* 2002;27:665-676.
5. Glasgow RE, Strycker LA, Toobert DJ, Eakin E. A social-ecologic approach to assessing support for disease self-management: the Chronic Illness Resources Survey. *J Behav Med.* 2000;23:559-583.

Food/Nutrition Program Participation (FH-6.1)

Definition

Patient/client eligibility for and participation in food assistance programs

Nutrition Assessment and Monitoring and Evaluation

Indicators

Eligibility for government programs (specify, e.g., qualification for federal programs [e.g., WIC, Supplemental Nutrition Assistance Program [refer to state for title of program]], school breakfast/lunch program, food distribution program on U.S. Indian Reservations; state assistance programs, such as emergency food assistance programs])

Participation in government programs (specify patient/client or family/caregiver influence)

Eligibility for community programs (specify, e.g., qualification for community programs such as food pantries, meal sites, and meal delivery programs)

Participation in community programs (specify patient/client or family/caregiver influence)

Examples of the measurement methods or data sources for these indicators: Patient/client report of eligibility/participation, referral information, home evaluation

Typically used with the following domains of nutrition interventions: Nutrition education, nutrition counseling, coordination of nutrition care

Typically used to determine and to monitor and evaluate change in the following nutrition diagnoses:

Limited access to food, inadequate or excessive energy intake

Clinical judgment must be used to select indicators and determine the appropriate measurement techniques and reference standards for a given patient population and setting. Once identified, these indicators, measurement techniques, and reference standards should be identified in policies and procedures or other documents for use in patient/client records, quality or performance improvement, or in formal research projects.

Evaluation

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal (tailored to patient/client needs)
OR
- 2) Reference Standard

Patient/Client Example(s)

Example(s) of one or two of the Nutrition Care Indicators (includes sample initial and reassessment documentation for one of the indicators)

Indicator(s) Selected

Participation in government programs

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal: Patient/client is not participating in federal school lunch program as parent has not completed required forms.
OR
- 2) Reference Standard: No validated standard exists.

Food/Nutrition Program Participation (FH-6.1)

Sample Nutrition Assessment and Monitoring and Evaluation Documentation

<i>Initial nutrition assessment with patient/client</i>	The patient/client not participating in federal school lunch program as the required forms are not complete. Will follow-up with family/guardian and monitor change in school lunch program participation at next appointment.
<i>Reassessment after nutrition intervention</i>	Progress toward goal as patient/client's family/guardian has completed school lunch program forms.

References

The following are some suggested references for indicators, measurement techniques, and reference standards; other references may be appropriate.

1. Department of Health and Human Services (HHS) Poverty Guidelines, 2006. Available at: <http://aspe.hhs.gov/poverty/06poverty.shtml>. Accessed November 14, 2006.
2. US Department of Agriculture and Health and Human Services. Dietary Guidelines for Americans, 2010. Available at: <http://www.cnpp.usda.gov/dietaryguidelines.htm>. Accessed: January 24, 2012.
3. Holben DH. Incorporation of food security learning activities into dietetics curricula. *Top Clin Nutr*. 2005;20:339-350.
4. Holben DH, Myles W. Food insecurity in the United States: how it affects our patients. *Am Fam Physician*. 2004;69:1058-1063.
5. Position of the American Dietetic Association on Food Insecurity in the United States. *J Am Diet Assoc*. 2010;110:1368-1377.
6. US Department of Agriculture, Economic Research Service. Food security in the United States. Available at: <http://www.ers.usda.gov/Briefing/FoodSecurity/>. Accessed January 26, 2012.

Safe Food/M Meal Availability (FH-6.2)

Definition

Availability of enough healthful, safe food

Nutrition Assessment and Monitoring and Evaluation

Indicators

Availability of shopping facilities (specify, e.g., access to facilities with a wide variety of healthful food choices)

Procurement of safe food (specify, e.g., financial resources for obtaining food, community gardens, growing own food, hunting and fishing)

Appropriate meal preparation facilities (specify, e.g., access to cooking apparatus and supplies used in preparation, sanitary conditions and supplies for meal preparation, appropriate temperatures of hot/cold food)

Availability of safe food storage (specify, e.g., refrigerator/freezer, dry storage, designated containers)

Appropriate storage techniques (specify, e.g., appropriate refrigeration/freezer temperatures, canning/preservation, length of storage, sanitary conditions)

Identification of safe food (specify, e.g., identification of spoilage, expiration dates, identification of foods containing poisons such as specific berries, mushrooms, etc.)

Examples of the measurement methods or data sources for these indicators: Patient/client report overall food availability/food consumed during the week, referral information, home evaluation

Typically used with the following domains of nutrition interventions: Nutrition education, nutrition counseling, coordination of nutrition care

Typically used to determine and to monitor and evaluate change in the following nutrition diagnoses:

Limited access to food, intake of unsafe food, inadequate or excessive energy intake

Clinical judgment must be used to select indicators and determine the appropriate measurement techniques and reference standards for a given patient population and setting. Once identified, these indicators, measurement techniques, and reference standards should be identified in policies and procedures or other documents for use in patient/client records, quality or performance improvement, or in formal research projects.

Evaluation

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal (tailored to patient/client needs)
- OR
- 2) Reference Standard

Patient/Client Example(s)

Example(s) of one or two of the Nutrition Care Indicators (includes sample initial and reassessment documentation for one of the indicators)

Indicator(s) Selected

Availability of meal preparation facilities

Criteria for Evaluation

Comparison to Goal or Reference Standard:

1. Goal: Patient/client has no access to meal preparation facilities when extensive access to meal preparation facilities is the goal.
- OR
2. Reference Standard: No validated standard exists.

Safe Food/Meal Availability (FH-6.2)

Sample Nutrition Assessment and Monitoring and Evaluation Documentation

<i>Initial nutrition assessment with patient/client</i>	The patient/client has no access to meal preparation facilities. Will monitor change in access at next appointment after coordination of nutrition care with social work.
<i>Reassessment after nutrition intervention</i>	Substantial progress toward goal as patient/client has consistent access to meal preparation facility with repair of stove.

References

The following are some suggested references for indicators, measurement techniques, and reference standard; other references may be appropriate.

1. Bickel G, Nord M, Price C, Hamilton WL, Cook JT. Guide to Measuring Household Food Security, Revised 2000. USDA, Food and Nutrition Service. Available at: www.fns.usda.gov/fsec/fi les/fsguide.pdf. Accessed January 26, 2012.
2. Department of Health and Human Services (HHS) Poverty Guidelines, 2006. Available at: <http://aspe.hhs.gov/poverty/06poverty.shtml>. Accessed November 14, 2006.
3. US Department of Agriculture and Health and Human Services. Dietary Guidelines for Americans, 2010. Available at: <http://www.cnpp.usda.gov/dietaryguidelines.htm>. Accessed: January 24, 2012.
4. Granger LE, Holben DH. Self-identified food security knowledge and practices of family physicians in Ohio. *Top Clin Nutr*. 2004;19:280-285.
5. Holben DH. Incorporation of food security learning activities into dietetics curricula. *Top Clin Nutr*. 2005;20:339-350.
6. Holben DH, Myles W. Food insecurity in the United States: how it affects our patients. *Am Fam Physician*. 2004;69:1058-1063.
7. Partnership for Food Safety Education. Available at: <http://www.fightbac.org>. Accessed January 26, 2012.
8. Position of the American Dietetic Association on Food Insecurity in the United States. *J Am Diet Assoc*. 2010;110:1368-1377.
9. Position of the American Dietetic Association: Food and water safety. *J Am Diet Assoc*. 2009;109: 1449-1460.
10. Tscholl E, Holben DH. Knowledge and practices of Ohio nurse practitioners and its relationship to food access of patients. *J Am Acad Nurs Pract*. 2006;18:335-342.
11. US Department of Agriculture, Economic Research Service. Food security in the United States. Available at: <http://www.ers.usda.gov/Briefing/FoodSecurity/>. Accessed January 26, 2012 .
12. US Environmental Protection Agency. Ground Water and Drinking Water Frequently Asked Questions. Available at: <http://safewater.supportportal.com/ics/support/default.asp?deptID=23015>. Accessed January 26, 2012 .

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Safe Water Availability (FH-6.3)

Definition

Availability of potable water

Nutrition Assessment and Monitoring and Evaluation

Indicators

Availability of potable water (specify, e.g., functioning well, access to treated public water supply)

Appropriate water decontamination (specify, e.g., awareness of and compliance with public health warnings, use of strategies such as boiling, chemical, filtration treatment)

Examples of the measurement methods or data sources for these indicators: Patient/client report of water availability and/or decontamination strategies, referral information, home evaluation

Typically used with the following domains of nutrition interventions: Nutrition education, nutrition counseling, coordination of nutrition care

Typically used to determine and to monitor and evaluate change in the following nutrition diagnoses:
Inadequate fluid intake, intake of unsafe food

Clinical judgment must be used to select indicators and determine the appropriate measurement techniques and reference standards for a given patient population and setting. Once identified, these indicators, measurement techniques, and reference standards should be identified in policies and procedures or other documents for use in patient/client records, quality or performance improvement, or in formal research projects.

Evaluation

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal (tailored to patient/client needs)
OR
- 2) Reference Standard

Patient/Client Example(s)

Example(s) of one or two of the Nutrition Care Indicators (includes sample initial and reassessment documentation for one of the indicators)

Indicator(s) Selected

Appropriate water decontamination

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal: Patient/client has limited awareness and no compliance with water decontamination recommendations when extensive awareness and compliance with the decontamination guidelines is the goal.
OR
- 2) Reference Standard: No validated standard exists.

Safe Water Availability (FH-6.3)

Sample Nutrition Assessment and Monitoring and Evaluation Documentation

<i>Initial nutrition assessment with patient/client</i>	The patient/client has limited awareness and no compliance with water decontamination recommendations (e.g., community has a boil water alert for water used for drinking and cooking) when extensive awareness and compliance with the decontamination guidelines is the goal. Will monitor change in compliance at next appointment.
<i>Reassessment after nutrition intervention</i>	Substantial progress toward goal as patient/client is complying with water decontamination guidelines.

References

The following are some suggested references for indicators, measurement techniques, and reference standard; other references may be appropriate.

1. Position of the American Dietetic Association on Food Insecurity in the United States. *J Am Diet Assoc.* 2010;110:1368-1377.
2. Position of the American Dietetic Association: Food and water safety. *J Am Diet Assoc.* 2009;109:1449-1460.
3. US Environmental Protection Agency. Ground Water and Drinking Water Frequently Asked Questions. Available at: <http://safewater.supportportal.com/ics/support/default.asp?deptID=23015>. Accessed January 26, 2012.

Food/Nutrition-Related Supplies Availability (FH-6.4)

Definition

Access to necessary food/nutrition-related supplies

Nutrition Assessment and Monitoring and Evaluation

Indicators

Access to food/nutrition-related supplies (specify, e.g., glucose monitor, monitoring strips, lancets, pedometer, PN/EN supplies, thickeners, blood pressure-related devices)

Access to assistive eating devices (equipment or utensils), specify, e.g., modified utensils, plates, bowls, gavage feeding supplies)

Access to assistive food preparation devices (specify, e.g., modified utensils for food preparation, electric can openers, rocking knives, one-handed devices)

Examples of the measurement methods or data sources for these indicators: Patient/client report, referral information, home evaluation

Typically used with the following domains of nutrition interventions: Nutrition education, nutrition counseling, coordination of nutrition care

Typically used to determine and to monitor and evaluate change in the following nutrition diagnoses: Inability to manage self-care, inadequate oral intake, self-feeding difficulty, limited adherence to nutrition-related recommendations

Clinical judgment must be used to select indicators and determine the appropriate measurement techniques and reference standards for a given patient population and setting. Once identified, these indicators, measurement techniques, and reference standards should be identified in policies and procedures or other documents for use in patient/client records, quality or performance improvement, or in formal research projects.

Evaluation

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal (tailored to patient/client needs)
OR
- 2) Reference Standard

Patient/Client Example(s)

Example(s) of one or two of the Nutrition Care Indicators (includes sample initial and reassessment documentation for one of the indicators)

Indicator(s) Selected

Access to food/nutrition-related supplies

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal: Patient/client has limited access to a sufficient quantity of glucose monitoring strips when extensive access is the goal.
OR
- 2) Reference Standard: No validated standard exists.

Food/Nutrition-Related Supplies Availability (FH-6.4)

Sample Nutrition Assessment and Monitoring and Evaluation Documentation

<i>Initial nutrition assessment with patient/client</i>	The patient/client has limited access to a sufficient quantity of glucose monitoring strips. Will monitor change in access to glucose monitoring strips at next appointment.
<i>Reassessment after nutrition intervention</i>	Some progress toward goal as patient/client has moderate access to a sufficient supply of glucose monitoring strips.

References

The following are some suggested references for indicators, measurement techniques, and reference standard; other references may be appropriate.

1. Department of Health and Human Services (HHS) Poverty Guidelines, 2006. Available at: <http://aspe.hhs.gov/poverty/06poverty.shtml>. Accessed November 14, 2006.
2. Holben DH, Myles W. Food insecurity in the United States: how it affects our patients. *Am Fam Physician*. 2004;69:1058-1063.
3. Position of the American Dietetic Association on Food Insecurity in the United States. *J Am Diet Assoc*. 2010;110:1368-1377.
4. Position of the American Dietetic Association: Food and water safety. *J Am Diet Assoc*. 2009;109: 1449-1460.

Breastfeeding (FH-7.1)

Definition

Degree to which breastfeeding plans and experience meet nutritional and other needs of the infant and mother

Nutrition Assessment and Monitoring and Evaluation

Indicators

Initiation of breastfeeding

- Breastfeeding attempts (number)

Duration of breastfeeding (specify, e.g., weeks, months, years)

Exclusive breastfeeding (yes/no)

Breastfeeding problems

- Evaluation of latch (correct/incorrect)
- Evaluation of mother's nipples (not irritated/irritated)
- Evaluation of sucking (minutes rhythmic sucking per feeding)
- Presence of breastmilk* in baby's mouth when unlatched from breast (yes/no)
- Evaluation of mother's breasts (specify, e.g., full/firm prior to feeding, soft after feeding)
- Mother's evaluation of baby's satisfaction after feeding (specify, e.g., still hungry/satisfied)
- Other (specify)

Note: Infant/child growth can be found on the Body Composition/Growth/Weight History reference sheet.

Breastfeeding self-efficacy and intention to breastfeed can be found on the Beliefs and Attitudes reference sheet.

**If a synonym for the term "breastmilk" is helpful or needed, an approved alternate is "human milk."*

Examples of the measurement methods or data sources for this indicator: Patient/client report, practitioner observation of breastfeeding, self-monitoring records, infant weight trends

Typically used to determine and monitor and evaluate change in the following domains of nutrition interventions: Nutrition education, nutrition counseling, coordination of nutrition care

Typically used to determine and to monitor and evaluate change in the following nutrition diagnoses: Maternal breastfeeding difficulty, food- and nutrition-related knowledge deficit, unsupported beliefs/attitudes about food- or nutrition-related topics, involuntary weight loss, inadequate fluid intake

Clinical judgment must be used to select indicators and determine the appropriate measurement techniques and reference standards for a given patient population and setting. Once identified, these indicators, measurement techniques, and reference standards should be identified in policies and procedures or other documents for use in patient/client records, quality or performance improvement, or in formal research projects.

Evaluation

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal (tailored to patient/client's needs)
- OR
- 2) Reference Standard

Patient/Client Example(s)

Example(s) of one or two of the Nutrition Care Indicators (includes sample initial and reassessment documentation for one of the indicators)

Indicator(s) Selected

Initiation of breastfeeding

Breastfeeding (FH-7.1)

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal: Patient/client currently fears her breastmilk* supply is not adequate and worries about how she will manage when she returns to work in four weeks. Goal is for mother to breastfeed for six months.
OR
- 2) Reference Standard: No validated standard exists.

Sample Nutrition Assessment and Monitoring and Evaluation Documentation

<i>Initial encounter with patient/client</i>	Postpartum patient/client states she is planning to use a combination of formula and breastfeeding and start solids at 3 months. Will educate and refer to lactation support group.
<i>Reassessment after nutrition intervention</i>	Patient/client reports she has exclusively breast fed for three months and plans to delay introduction of solids. Will reinforce and educate. Continue to monitor.

*If a synonym for the term "breastmilk" is helpful or needed, an approved alternate is "human milk."

References

The following are some suggested references for indicators, measurement techniques, and reference standards for the outcome; other references may be appropriate.

1. Riordan, J. *Breastfeeding and Human Lactation*. 3rd ed. Sudbury, MA: Jones and Bartlett Publishers; 2005:219.
2. Leff EW, Gagne MP, Jefferis SC. Maternal perceptions of successful breastfeeding. *J Hum Lact*. 2004;10:99-104.
3. Avery M, Duckett L, Dodgson J, Savik K, Henly SJ. Factors associated with very early weaning among primiparas intending to breastfeed. *Maternal Child Health J*. 1998;2:167-179.
4. American Academy of Pediatrics. Policy statement: breastfeeding and the use of human milk, section on breastfeeding. *Pediatrics*. 2005;115:496-506.
5. CAPPA Position Paper. The lactation educator's role in providing breastfeeding information and support. 2002. Available at: <http://cappa.net/Docs/CLE%20Position%20Paper%203%20pdf.pdf>. Accessed January 26, 2012 .
6. Position of the American Dietetic Association: Promoting and Supporting Breastfeeding. *J Am Diet Assoc*. 2009;109: 1926-1942.

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Nutrition-Related Activities of Daily Living and Instrumental Activities of Daily Living (FH-7.2)

Definition

Level of cognitive and physical ability to perform nutrition-related activities of daily living and instrumental activities of daily living by older and/or disabled persons

Nutrition Assessment and Monitoring and Evaluation

Indicators

Physical ability to complete tasks for meal preparation (plan meals, shop for meals, finances, meal preparation) (yes/no)

Physical ability to self-feed (yes/no)

Ability to position self in relation to plate (within 12 to 18 inches (30–45 cm) from mouth to plate) (yes/no)

Receives assistance with intake (yes/no)

Ability to use adaptive eating devices (those that have been deemed necessary and that improve self-feeding skills) (yes/no)

Cognitive ability to complete tasks for meal preparation (planning meals, shopping for meals, finances, meal preparation) (yes/no)

Remembers to eat (yes/no)

Recalls eating (yes/no)

Mini Mental State Examination Score (score)

Nutrition-related activities of daily living (ADL) score (score)

Nutrition-related instrumental activities of daily living (IADL) score (score)

Note: Sufficient intake of food can be found on the Food Intake reference sheet.

Sufficient intake of fluid can be found on the Fluid/Beverage Intake reference sheet.

Food security and ability to maintain sanitation can be found on the Safe Food/M Meal Availability reference sheet.

Ability to maintain weight can be found on the Body Composition/Growth/Weight History reference sheet.

Examples of the measurement methods or data sources for these outcome indicators: Self-report, caregiver report, home visit, targeted questionnaires and monitoring devices, ADL and/or IADL measurement tool, congregate meal site attendance records

Typically used with the following domains of nutrition interventions: Coordination of nutrition care

Typically used to determine and to monitor and evaluate change in the following nutrition diagnoses:

Inability to manage self-care, impaired ability to prepare foods/meals

Clinical judgment must be used to select indicators and determine the appropriate measurement techniques and reference standards for a given patient population and setting. Once identified, these indicators, measurement techniques, and reference standards should be identified in policies and procedures or other documents for use in patient/client records, quality or performance improvement, or in formal research projects.

Evaluation

Criteria for Evaluation

Comparison to Goal or Reference Standard:

1) Goal (tailored to patient/client's needs)

OR

2) Reference Standard

Nutrition-Related Activities of Daily Living and Instrumental Activities of Daily Living (FH-7.2)

Patient/Client Example(s)

Example(s) of one or two of the Nutrition Care Indicators (includes sample initial and reassessment documentation for one of the indicators)

Indicator(s) Selected

Nutrition-related instrumental activities of daily living (IADL) score

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal: Patient/client with decreased food intake due to an inability to drive, no close relatives living in the vicinity, and difficulty in performing meal preparation tasks due to weakness.
OR
- 2) Reference Standard: No validated standard exists.

Sample Nutrition Assessment and Monitoring and Evaluation Documentation

<i>Initial encounter with patient/client</i>	Patient/client with inadequate food intake due to inability to drive, no close relative living in vicinity, subsequent weight loss and difficulties in performing ADLs and IADLs due to weakness. Patient/client is to use new strategies and community resources to facilitate attendance at senior center congregate meals 5 times per week, use of community-provided transportation offered to grocery store 1 x per week, and attendance in strength training at senior center.
<i>Reassessment after nutrition intervention</i>	Significant progress in nutrition-related activities of daily living. Patient/client able to attend senior center for meals and strength training 3 times this week. Goal is 5 times. Will continue to assess at next encounter. Patient/client going to grocery store 1 x per week.

References

The following are some suggested references for indicators, measurement techniques, and reference standards for the outcome; other references may be appropriate.

1. Kretser A, Voss T, Kerr W, Cavadini C, Friedmann J. Effects of two models of nutritional intervention on homebound older adults at nutritional risk. *J Am Diet Assoc.* 2003;103:329-336.
2. Sorbye LW, Schroll M, Finne Soveri H, Jonsson PV, Topinkova E, Ljunggren G, Bernabei R. Unintended weight loss in the elderly living at home: the Aged in Home Care Project (AdHOC). *J Nutr Health Aging.* 2008;12:10-16.
3. Folstein M, Folstein SE, McHugh PR. Mini-mental state: a practical method for grading the cognitive state of patients for the clinician. *J Psychiatr Res.* 1975;12(3):189-198.
4. Russell C. *Dining Skills: Practical Interventions for Caregivers of Older Adults with Eating Problems.* Chicago, IL: Consultant Dietitians in Health Care Facilities, A Dietetic Practice Group of the American Dietetic Association; 2001.

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Physical Activity (FH-7.3)

Definition

Level of physical activity and/or amount of exercise performed

Nutrition Assessment and Monitoring and Evaluation

Indicators

- Physical activity history (e.g., activities, preferences, attitudes)
- Consistency (yes/no)
- Frequency (number times/week)
- Duration (number minutes/session, number of total minutes/day)
- Intensity (e.g., talk test, Borg Rating of Perceived Exertion, % of predetermined max heart rate)
- Type of physical activity (e.g., cardiovascular, muscular strength/endurance, flexibility; lifestyle, programmed)
- Strength (e.g., grip strength or other muscle strength measure)
- TV/screen time (minutes/day)
- Other sedentary activity time (e.g., commuting; sitting at desk, in meetings, at sporting or arts events) (minutes/day)
- Involuntary physical movement (present/absent)
- NEAT (Non-exercise activity thermogenesis) (present/absent, level)

Examples of the measurement methods or data sources for these outcome indicators: History interview/questionnaire, physical activity log, step counter, accelerometer, attendance at strength training, balance training (for older adults), and/or aerobic classes, caretaker records, medical record

Typically used with the following domains of nutrition interventions: Nutrition education, nutrition counseling

Typically used to determine and to monitor and evaluate change in the following nutrition diagnoses:

Physical inactivity, excessive exercise, underweight, overweight/obesity, unintended weight loss or weight gain

Clinical judgment must be used to select indicators and determine the appropriate measurement techniques and reference standards for a given patient population and setting. Once identified, these indicators, measurement techniques, and reference standards should be identified in policies and procedures or other documents for use in patient/client records, quality or performance improvement, or in formal research projects.

Evaluation

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal (tailored to patient/client's needs)
- OR
- 2) Reference Standard

Patient/Client Example(s)

Example(s) of one or two of the Nutrition Care Indicators (includes sample initial and reassessment documentation for one of the indicators)

Indicator(s) Selected

Consistency and duration

Physical Activity (FH-7.3)

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal: Patient/client typically walks approximately 10 minutes, twice per week. Patient/client goal is to walk approximately 15 minutes, 5 days per week.
OR
- 2) Reference Standard: Patient/client's typical 10-minute walk, twice a week is well below the recommended at least 30 minutes of moderate-intensity physical activity (in bouts 10 minutes or longer), 5 days per week or at least 20 minutes of vigorous intensity physical activity (in bouts 10 minutes or longer), 3 days per week (ACSM/AHA Physical Activity Guidelines for Public Health for adults and seniors)

Sample Nutrition Assessment and Monitoring and Evaluation Documentation

<i>Initial encounter with patient/client</i>	Based on exercise log, patient/client doing moderate-intensity physical activities 30 minutes/day, 2 days/week. Goal is to do at least 30 minutes/day (in bouts 10 minutes or longer), moderate-intensity activities, 5 or more days/wk. Will monitor physical activity level at next appointment.
<i>Reassessment after nutrition intervention</i>	Significant progress toward goal of exercising at 30 minutes/day, moderate-intensity activities, 5 or more days/wk. Patient/client reports doing moderate-intensity activities 30 minutes per day, 4 days/week.

References

The following are some suggested references for indicators, measurement techniques, and reference standards for the outcome; other references may be appropriate.

1. Haskell WL, Lee IM, Pate RR, Powell KE, Blair SN, Franklin BA, Macera CA, Heath GW, Thompson PD, Bauman A. Physical activity and public health: updated recommendation for adults from the American College of Sports Medicine and the American Heart Association. *Med Sci Sports Exer.* 2007;39:8:1423-1434.
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Updated: 2011 Edition

Factors Affecting Access to Physical Activity (FH-7.4)

Definition

Factors influencing access to physical activity opportunities and physical activity participation

Nutrition Assessment and Monitoring and Evaluation

Indicators

Neighborhood safety (the patient/client's perception of crime and traffic, presence of gangs, witness to physical attacks, presence of community members walking or playing outside and feeling it is safe to walk outside. Patient/client rate on a scale of 1 to 10, 1=Unsafe, 10=Safe)

Walkability of neighborhood (the patient/client's perception on his/her ability to walk in a neighborhood related to street connectivity, road type, dwelling density, and land use attributes (i.e., residential, commercial, institutional or industrial land use). Patient/client rate on a scale of 1 to 10, 1=Not walkable, 10=Very walkable)

Proximity to parks/green space (the patient/client's perception of the distance from the patient's home/workplace to the nearest park/green space. Patient/client rate on a scale of 1 to 10, 1=Large distance to nearest park/green space, 10=Small distance to nearest park/green space)

Access to physical activity facilities/programs (the patient/client's perception of the availability of physical activity facilities/programs in the patient's environment. Patient/client rate on a scale of 1 to 10, 1=No availability of facilities/programs, 10=Excellent availability of facilities/programs)

Note: Physical disability, mobility and socioeconomic factors affecting physical activity can be documented in the in Personal data (CH-1.1) and Social history (CH-3.1).

Examples of the measurement methods or data sources for these outcome indicators: Patient perception, neighborhood crime statistics, neighborhood traffic statistics, geographic information systems data to map a neighborhood, availability of retail establishments within walking distance

Typically used with the following domains of nutrition interventions: Nutrition education, nutrition counseling and coordination of care

Typically used to determine and to monitor and evaluate change in the following nutrition diagnoses: overweight/obesity, physical inactivity, not ready for diet/lifestyle change

Clinical judgment must be used to select indicators and determine the appropriate measurement techniques and reference standards for a given patient population and setting. Once identified, these indicators, measurement techniques, and reference standards should be identified in policies and procedures or other documents for use in patient/client records, quality or performance improvement, or in formal research projects.

Evaluation

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal (tailored to patient/client's needs)
- OR
- 2) Reference Standard

Patient/Client Example(s)

Example(s) of one or two of the Nutrition Care Indicators (includes sample initial and reassessment documentation for one of the indicators)

Indicator(s) Selected

Neighborhood safety

Factors Affecting Access to Physical Activity (FH-7.4)

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal: Patient rated neighborhood as unsafe when increased physical activity is a goal.
OR
- 2) Reference Standard:

Sample Nutrition Assessment and Monitoring and Evaluation Documentation

<i>Initial encounter with patient/client</i>	Patient perceives that the neighborhood is unsafe (self-perception rating of a 2) for an individual to engage in outdoor exercise alone because of environmental factors (e.g. crime, traffic, gang presence, witness to physical attack) and has limited compliance with increasing physical activity.
<i>Reassessment after nutrition intervention</i>	Patient has joined a neighborhood outdoor exercise group and now rates neighborhood safety as a 7 and has increasing compliance with regular physical activity.

References

The following are some suggested references for indicators, measurement techniques, and reference standards for the outcome; other references may be appropriate.

1. Academy of Nutrition and Dietetics. Evidence Analysis Library. Environment and pediatric overweight. Available at: <http://www.andevidencelibrary.com/topic.cfm?cat=4742>. Accessed April 27, 2012.

Created: 2013 Edition

Nutrition Quality of Life* (FH-8.1)

Definition

Extent to which the Nutrition Care Process impacts a patient/client's physical, mental, and social well-being related to food and nutrition

Nutrition Assessment and Monitoring and Evaluation

Indicators

Nutrition quality of life responses

Note: A nutrition quality of life instrument has been developed and is being validated (Barr JT, et al 2003). Focused questioning around the six indicators using the 50 NQOL statements is recommended.

Examples of the measurement methods or data sources for these outcome indicators: Nutrition Quality of Life measurement tool, other quality of life tools

Typically used with the following domains of nutrition interventions: Food and/or nutrient delivery, supplements, nutrition education, nutrition counseling, coordination of nutrition care

Typically used to determine and to monitor and evaluate change in the following nutrition diagnoses:

Poor nutrition quality of life, inadequate or excessive energy or macronutrient intake, underweight, unintended weight loss, overweight/obesity, unintended weight gain, disordered eating pattern, inability to manage self-care, swallowing difficulty, chewing difficulty, self-feeding difficulty, altered GI function, limited access to food and/or water

Clinical judgment must be used to select indicators and determine the appropriate measurement techniques and reference standards for a given patient population and setting. Once identified, these indicators, measurement techniques, and reference standards should be identified in policies and procedures or other documents for use in patient/client records, quality or performance improvement, or in formal research projects.

Evaluation

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal (tailored to patient/client's needs)
- OR
- 2) Reference Standard

Patient/Client Example(s)

Example(s) of one or two of the Nutrition Care Indicators (includes sample initial and reassessment documentation for one of the indicators)

Indicator(s) Selected

Nutrition quality of life score

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal: Patient/client with chronic renal disease currently reports poor nutrition quality of life, especially decreased walking ability (physical) and limited food choices on renal diet (food impact). The goal of medical nutrition therapy is to educate and coach patient and his family on options and strategies to significantly enhance his nutrition quality of life.
- OR
2. Reference Standard: No validated standard exists.

* This nutrition indicator is included to encourage further research.

Nutrition Quality of Life* (FH-8.1)

Sample Nutrition Assessment and Monitoring and Evaluation Documentation

<i>Initial encounter with patient/client</i>	Patient/client with chronic renal disease reports poor nutrition quality of life, particularly in physical and food impact aspects. Patient/client to receive intensive medical nutrition therapy with a goal to improve client's overall nutrition quality of life over a 6-month period. Will monitor nutrition quality of life in 6 months.
<i>Reassessment after nutrition intervention</i>	Some progress toward goal. Patient/client's nutrition quality of life is increased, but further improvement is desired in the physical dimension. Will continue medical nutrition therapy and reassess in 3 months.

References

The following are some suggested references for indicators, measurement techniques, and reference standards for the outcome; other references may be appropriate.

1. Barr JT, Schumacher GE. The need for a nutrition-related quality-of-life measure. *J Am Diet Assoc.* 2003;103:177-180.
2. Barr JT, Schumacher GE. Using focus groups to determine what constitutes quality of life in clients receiving medical nutrition therapy: first steps in the development of a nutrition quality-of-life survey. *J Am Diet Assoc.* 2003;103:844-851.
3. Ware JE, Sherbourne CD. The MOS 36-item short-form health survey (SF-36), I: conceptual framework and item selection. *Med Care.* 1992;30:473-483.
4. Moorehead M, Ardelt-Gattinger E, Lechner H, Oria H. The validation of the Moorehead-Ardelt Quality of Life Questionnaire II. *Obes Surg.* 2003;13:684-692.
5. Groll D, Vanner S, Depew W, DaCosta L, Simon J, Groll A, Roblin N, Paterson W. The IBS-36: a new quality of life measure for irritable bowel syndrome. *Am J Gastroenterol.* 2002;97:962-971.
6. Diabetes Control and Complications Trial Research Group. Reliability and validity of a diabetes quality of life measure for the Diabetes Control and Complications Trial (DCCT). *Diabetes Care.* 1988;11:725-732.
7. Position of the American Dietetic Association. Individualized nutrition approaches for older adults in health care communities. *J Am Diet Assoc.* 2010;110:1554-1563.

* This nutrition indicator is included to encourage further research.

Body Composition/Growth/Weight History (AD-1.1)

Definition

Comparative measures of the body, including fat, muscle, and bone components and growth

Nutrition Assessment and Monitoring and Evaluation

Indicators

Height/length

- Height/length (in/cm)
- Birth length (in/cm)
- Pre-amputation height (in/cm)
- Estimated height
 - Knee height (cm)
 - Arm span (in/cm)

Weight

- Weight (lb, oz, kg, g)
- Measured
- Stated
- Usual body weight (UBW) (lb/kg)
- UBW percentage (%)
- Birth weight
- Dosing weight (lb, oz, kg, g)
- Dry weight (lb, oz, kg, g)

Frame size

- Frame size (small/medium/large)

Weight change

- Weight change (specify lb, kg, oz, g, %)
Specify time frame: _____
- Intent (intentional/unintentional)
- Weight change, interdialytic (% dry weight)
- Weight change, gestational (lb, oz, kg, g)
Specify time frame: _____

Body mass index

- Body mass index (BMI) (kg/m^2)
- BMI prime (actual BMI/upper limit BMI)

Growth pattern indices/percentile ranks

- Corrected age for prematurity
- BMI percentile/age (percentile rank)
- Head circumference (cm or in)
- Head circumference-for-age (percentile rank)
- Length/stature-for-age (percentile rank)
- Weight-for-length/stature (percentile rank)
- Weight-for-age (percentile rank)

Body compartment estimates

- Body fat percentage (%)
- Body surface area (m^2)
- Bone age (years)
- Bone mineral density (units)
- Mid-arm muscle circumference (percentile rank)
- Triceps skin fold (percentile rank)
- Waist circumference (in or cm)
- Waist hip ratio (ratio)

Examples of the measurement methods or data sources for these outcome indicators: Referring health care provider or agency, direct measurement, patient/client report, medical record

Typically used with the following domains of nutrition interventions: Food and nutrient delivery, nutrition education, nutrition counseling, coordination of nutrition care

Typically used to determine and monitor and evaluate change in the following nutrition diagnoses: Excessive or inadequate intake of energy, fat, protein, carbohydrate, alcohol, and/or mineral intake; underweight, overweight, physical inactivity, excessive exercise

Clinical judgment must be used to select indicators and determine the appropriate measurement techniques and reference standards for a given patient population and setting. Once identified, these indicators, measurement techniques, and reference standards should be identified in policies and procedures or other documents for use in patient/client records, quality or performance improvement, or in formal research projects.

Body Composition/Growth/Weight History (AD-1.1)

Evaluation

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal (tailored to patient/client's needs)
OR
- 2) Reference Standard

Patient/Client Example(s)

Example(s) of one or two of the Nutrition Care Indicators (includes sample initial and reassessment documentation for one of the indicators)

Indicator(s) Selected

Weight change/day
BMI percentile/age

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal: The infant is only gaining, on average, 10 grams per day compared with a goal weight gain of 20 to 30 grams per day.
OR
- 2) Reference Standard: Child's (> age 3 years) BMI percentile/age per growth curves has crossed 2 percentile channels from 50% to 10% in last 6 months.

Sample Nutrition Assessment and Monitoring and Evaluation Documentation

<i>Initial nutrition assessment with patient/client</i>	Child's BMI percentile/age per growth curves has crossed 2 percentile channels from 50% to 10% in last 6 months. Will monitor BMI percentile/age at next encounter.
<i>Reassessment after nutrition intervention</i>	Child's BMI percentile/age per growth curves is unchanged from baseline measure.

References

The following are some suggested references for indicators, measurement techniques, and reference standards for the outcome; other references may be appropriate.

1. McDowell MA, Fryar CD, Hirsch R, Ogden CL. Anthropometric Reference Data for Children and Adults: US Population, 2003-2006. Hyattsville, MD: National Center for Health Statistics. 2008. Available at: <http://www.cdc.gov/nchs/data/nhsr/nhsr010.pdf>. Accessed January 26, 2012.
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3. ACSM's Guidelines for Exercise Testing and Prescription. 6th ed. Indianapolis, IN: American College of Sports Medicine; 2000.
4. Charney P, Malone A. ADA Pocket Guide to Nutrition Assessment. 2nd ed. Chicago, IL: American Dietetic Association; 2009.
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6. Barlow SE and the Expert Committee. Expert committee recommendations regarding the prevention, assessment, and treatment of child and adolescent overweight and obesity: summary report: *Pediatrics*. 2007;120:S164-S192.
7. Callaway CW et al. Circumferences. In: Lohman TG et al. *Anthropometric Standardization Reference Manual*. Champaign, IL: Human Kinetics; 1988:39-54.
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Body Composition/Growth/Weight History (AD-1.1)

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10. American Society for Parenteral and Enteral Nutrition Board of Directors and the Clinical Guidelines Task Force. Guidelines for the use of parenteral and enteral nutrition in adult and pediatric patients: Normal requirements—adults. *J Parenter Enteral Nutr.* 2002; 26(Suppl):S22-S24.
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13. The Johns Hopkins Hospital. *The Harriet Lane Handbook: A Manual for Pediatric House Officers*. 17th ed. St. Louis, MO: Mosby; 2005.
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15. Leonberg BL. *ADA Pocket Guide to Pediatric Nutrition Assessment*. Chicago, IL: American Dietetic Association; 2008.
16. Modlesky CM. Assessment of body size and composition. In: Dunford M. *Sports Nutrition: A Practice Manual for Professionals*. 4th ed. Chicago, IL: American Dietetic Association; 2006.
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22. Academy of Nutrition and Dietetics. Pediatric Nutrition Care Manual. Available at: <http://peds.nutritioncaremanual.org>. Accessed January 26, 2012.
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27. Zemel BS, Riley EM, Stallings VA. Evaluation of methodology for nutritional assessment in children: anthropometry, body composition, and energy expenditure. *Ann Rev Nutr.* 1997;17:211-235.
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Acid Base Balance (BD-1.1)

Definition

Balance between acids and bases in the body fluids. The pH (hydrogen ion concentration) of the arterial blood provides an index for the total body acid-base balance (1).

Nutrition Assessment

Indicators

pH (number)

Arterial bicarbonate, HCO_3 (mmol/L)

Partial pressure of carbon dioxide in arterial blood, PaCO_2 (mmHg)

Partial pressure of oxygen in arterial blood, PaO_2 (mmHg)

Venous pH (number)

Venous bicarbonate, CO_2 (mmol/L)

Note: Sodium and chloride can be found on the Electrolyte and Renal Profile reference sheet

Examples of the measurement methods or data sources for these indicators: Biochemical measurement, laboratory report

Typically used with the following domains of nutrition interventions: Food and/or nutrient delivery, coordination of nutrition care

Typically used to determine and to monitor and evaluate change in the following nutrition diagnoses:
Altered nutrition-related laboratory values

Clinical judgment must be used to select indicators and determine the appropriate measurement techniques and reference standards for a given patient population and setting. Once identified, these indicators, measurement techniques, and reference standards should be identified in policies and procedures or other documents for use in patient/client records, quality or performance improvement, or in formal research projects.

Evaluation

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal (tailored to patient/client's needs)
OR
- 2) Reference Standard

Patient/Client Example

Example(s) of one or two of the Nutrition Care Indicators (includes sample initial and reassessment documentation for one of the indicators)

Indicator(s) Selected

pH, serum (number)

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal: Not generally used.
OR
- 2) Reference Standard: The patient/client pH is 7.48 which is above (above, below, or within expected range) the reference standard (7.35 to 7.45).

Acid Base Balance (BD-1.1)

Sample nutrition assessment documentation

<i>Initial nutrition assessment with patient/client</i>	Patient/client's pH is 7.48, which is above expected range. Will monitor change in pH at next arterial blood gas.
<i>Reassessment after nutrition intervention</i>	Significant progress toward reference standard. Patient/client's pH is 7.40, within expected range.

References

The following are some suggested references for indicators, measurement techniques, and reference standards; other references may be appropriate.

1. Charney P, Malone A. *ADA Pocket Guide to Nutrition Assessment*. 2nd ed. Chicago, IL: American Dietetic Association; 2009.
2. The Johns Hopkins Hospital. *The Harriet Lane Handbook: A Manual for Pediatric House Officers*. 17th ed. St. Louis MO: Mosby; 2005.
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Electrolyte and Renal Profile (BD-1.2)

Definition

Laboratory measures associated with electrolyte balance and kidney function

Nutrition Assessment and Monitoring and Evaluation

Indicators

BUN (mg/dL or mmol/L)	Magnesium (mEq/L or mmol/L)
Creatinine (mg/dL or $\mu\text{mol/L}$)	Calcium, serum (mg/dL or mmol/L)
BUN:creatinine ratio (ratio number)	Calcium, ionized (mg/dL or mmol/L)
Glomerular filtration rate (mL/min/1.73 m ²)	Phosphorus (mg/dL or mmol/L)
Sodium (mEq/L or mmol/L)	Serum osmolality (mOsm/kg or mmol/kg)
Chloride (mEq/L or mmol/L)	Parathyroid hormone (pg/mL or ng/L)
Potassium (mEq/L or mmol/L)	

Note: Bicarbonate can be found on the Acid Base Balance reference sheet.

Serum albumin can be found on the Protein Profile reference sheet for adjustment of serum calcium.

Examples of the measurement methods or data sources for these indicators: Biochemical measurement, laboratory report

Typically used with the following domains of nutrition interventions: Food and/or nutrient delivery, coordination of nutrition care

Typically used to determine and to monitor and evaluate change in the following nutrition diagnoses: Excessive or inadequate intake of protein or minerals

Clinical judgment must be used to select indicators and determine the appropriate measurement techniques and reference standards for a given patient population and setting. Once identified, these indicators, measurement techniques, and reference standards should be identified in policies and procedures or other documents for use in patient/client records, quality or performance improvement, or in formal research projects.

Evaluation

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal (tailored to patient/client's needs)
OR
- 2) Reference Standard

Patient/Client Example

Example(s) of one or two of the Nutrition Care Indicators (includes sample initial and reassessment documentation for one of the indicators)

Indicator(s) Selected

Potassium (mEq/L)

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal: A goal of serum K⁺ 3.5 to 5.5 mEq/L in patient/client on medications that block the renin-angiotensin system.
OR
- 2) Reference Standard: The patient/client's potassium is 2.9 mEq/L, which is below (above, below, within expected range) the expected range (3.5 to 5.0 mEq/L).

Electrolyte and Renal Profile (BD-1.2)

Sample Nutrition Assessment and Monitoring and Evaluation Documentation

<i>Initial nutrition assessment with patient/client</i>	Patient/client's serum potassium is 2.9 mEq/L, which is below the expected range. Will monitor change in potassium at next encounter.
<i>Reassessment after nutrition intervention</i>	Regression from reference standard. Patient/client's potassium is 2.7 mEq/L, below the expected range.

References

The following are some suggested references for indicators, measurement techniques, and reference standards; other references may be appropriate.

1. Charney P, Malone A. *ADA Pocket Guide to Nutrition Assessment*. 2nd ed. Chicago, IL: American Dietetic Association; 2009.
2. American Dietetic Association. *Chronic Kidney Disease (Non-Dialysis) Medical Nutrition Therapy Protocol*. Chicago, IL: American Dietetic Association; May 2002.
3. Academy of Nutrition and Dietetics. *Nutrition Care Manual*. Available at: www.nutritioncaremanual.org. Accessed January 26, 2012.
4. The Johns Hopkins Hospital. *The Harriet Lane Handbook: A Manual for Pediatric House Officers*. 17th ed. St. Louis MO: Mosby; 2005.
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Essential Fatty Acid Profile (BD-1.3)

Definition

Laboratory measures of essential fatty acids

Nutrition Assessment and Monitoring and Evaluation

Indicators

Triene:Tetraene ratio (ratio number)

Examples of the measurement methods or data sources for these indicators: Biochemical measurement, laboratory report/record

Typically used with the following domains of nutrition interventions: Food and/or nutrient delivery, coordination of nutrition care

Typically used to determine and to monitor and evaluate change in the following nutrition diagnoses: Inadequate intake of fat, parenteral nutrition; less than optimal parenteral nutrition composition or modality; altered nutrition-related laboratory values; impaired nutrient utilization

Clinical judgment must be used to select indicators and determine the appropriate measurement techniques and reference standards for a given patient population and setting. Once identified, these indicators, measurement techniques, and reference standards should be identified in policies and procedures or other documents for use in patient/client records, quality or performance improvement, or in formal research projects.

Evaluation

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal (tailored to patient/client's needs)
- OR
- 2) Reference Standard

Patient/Client Example

Example(s) of one or two of the Nutrition Care Indicators (includes sample initial and reassessment documentation for one of the indicators)

Indicator(s) Selected

Triene:Tetraene ratio (ratio number)

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal: Not generally used.
- OR
- 2) Reference Standard: The patient/client Triene:Tetraene ratio is 0.45, which is (above, below, or within expected range) above expected range (> 0.2-0.4 essential fatty acid deficiency).

Sample Nutrition Assessment and Monitoring and Evaluation Documentation

<i>Initial nutrition assessment with patient/client</i>	Patient/client's Triene:Tetraene ratio is 0.45, above the expected range (essential fatty acid deficiency). Will monitor change in Triene:Tetraene ratio at next encounter.
<i>Reassessment after nutrition intervention</i>	Significant progress toward the expect range. Patient/client's Triene:Tetraene ratio is 0.1.

References

The following are some suggested references for indicators, measurement techniques, and reference standards; other references may be appropriate.

1. Charney P, Malone A. *ADA Pocket Guide to Nutrition Assessment*. 2nd ed. Chicago, IL: American Dietetic Association; 2009.
2. Hise ME, Brown JC. Lipids. In: Gottschlich MM, ed. *The ASPEN Nutrition Support Core Curriculum: A Case-Based Approach—The Adult Patient*. Silver Spring, MD:ASPEN;2007:48-70.

Gastrointestinal Profile (BD-1.4)

Definition

Laboratory measures and medical tests associated with function of the gastrointestinal tract and related organs

Nutrition Assessment and Monitoring and Evaluation

Indicators

Alkaline phosphatase (U/L)	Amylase (U/L)
Alanine aminotransferase, ALT (U/L)	Lipase (U/L)
Aspartate aminotransferase, AST (U/L)	Other digestive enzymes, specify
Gamma glutamyl transferase, GGT (U/L)	D-xylose(blood mg/dL; urine % or grams)
Gastric residual volume (mL)	Hydrogen breath test (points)
Bilirubin, total (mg/dL or $\mu\text{mol/L}$)	Intestinal biopsy (by report)
Ammonia, serum ($\mu\text{g/dL}$ or $\mu\text{mol/L}$)	Stool culture (by report)
Toxicology report, including alcohol (by report)	Gastric emptying time (minutes)
Prothrombin time, PT (seconds)	Small bowel transit time (minutes, hours)
Partial thromboplastin time, PTT (seconds)	Abdominal films (by report)
INR (ratio)	Swallow study (by report)
Fecal fat (g/day or g/24 hours)	

Examples of the measurement methods or data sources for these indicators: Biochemical measurement, laboratory report

Typically used with the following domains of nutrition interventions: Food and/or nutrient delivery, nutrition education, nutrition counseling

Typically used to determine and to monitor and evaluate change in the following nutrition diagnoses:

Altered nutrition-related laboratory values, excess intake of protein or fat

Clinical judgment must be used to select indicators and determine the appropriate measurement techniques and reference standards for a given patient population and setting. Once identified, these indicators, measurement techniques, and reference standards should be identified in policies and procedures or other documents for use in patient/client records, quality or performance improvement, or in formal research projects.

Evaluation

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal (tailored to patient/client's needs)
OR
- 2) Reference Standard

Patient/Client Example

Example(s) of one or two of the Nutrition Care Indicators (includes sample initial and reassessment documentation for one of the indicators)

Indicator(s) Selected

Ammonia, serum ($\mu\text{g/dL}$)

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal: The patient/client's serum ammonia is 105 $\mu\text{g/dL}$, which is above the goal ($< 75 \mu\text{g/dL}$) for this patient/client with end-stage liver disease.
OR
- 2) Reference Standard: The patient/client serum ammonia is 85 $\mu\text{g/dL}$ which is above (above, below, or percent of) the expected range (11-35 $\mu\text{g/dL}$).

Gastrointestinal Profile (BD-1.4)

Sample Nutrition Assessment and Monitoring and Evaluation Documentation

<i>Initial nutrition assessment with patient/client</i>	Patient/client's serum ammonia is 85 µg/dL, above the expected range. Will monitor change in serum ammonia at next encounter.
<i>Reassessment after nutrition intervention</i>	Significant progress toward expected range. Patient/client's serum ammonia 45 µg/dL.

References

The following are some suggested references for indicators, measurement techniques, and reference standards; other references may be appropriate.

1. National Institutes of Health, Clinical Center Test Guide. Available at: <http://ccinprod.cc.nih.gov/dlm/testguide.nsf/TestIndex?OpenForm&Count=5000>. Accessed October 19, 2006.
2. The Johns Hopkins Hospital. *The Harriet Lane Handbook: A Manual for Pediatric House Officers*. 17th ed. St. Louis, MO: Mosby; 2005.

Updated: 2013 Edition

Glucose/Endocrine Profile:(BD-1.5)

Definition

Laboratory measures associated with glycemic control and endocrine findings

Nutrition Assessment and Monitoring and Evaluation

Indicators

Glucose, fasting (mg/dL, mmol/L)

Glucose, casual (mg/dL, mmol/L)

HgbA1c (% , mmol/mol)

Preprandial capillary plasma glucose (mg/dL, mmol/L)

Peak postprandial capillary plasma glucose (mg/dL, mmol/L)

Glucose tolerance test (mg/dL, mmol/L)

Cortisol level (µg/dL, mmol/L)

IGF-binding protein (ng/mL, mg/L)

Thyroid function tests— TSH, Thyroid stimulating hormone (mIU/L); T4, Thyroxine test (µg/dL); T3, Triiodo-
thyronine (ng/dL, pmol/L)

Pituitary hormone tests-- growth hormone (GH) ng/mL, adrenocorticotrophic hormone (ACTH) ng/L, luteiniz-
ing hormone (LH) IU/L and follicle-stimulating hormone (FSH) IU/L

Examples of the measurement methods or data sources for these indicators: Biochemical measurement, laboratory report

Typically used with the following domains of nutrition interventions: Food and/or nutrient delivery, nutrition education, nutrition counseling

Typically used to determine and to monitor and evaluate change in the following nutrition diagnoses:

Excessive or inadequate intake of carbohydrate, energy; less than optimal intake of types of carbohydrates; or inconsistent carbohydrate intake

Clinical judgment must be used to select indicators and determine the appropriate measurement techniques and reference standards for a given patient population and setting. Once identified, these indicators, measurement techniques, and reference standards should be identified in policies and procedures or other documents for use in patient/client records, quality or performance improvement, or in formal research projects.

Evaluation

Criteria for Evaluation

Comparison to Goal or Reference Standard:

1) Goal (tailored to patient/client's needs)

OR

2) Reference Standard

Patient/Client Example

Example(s) of one or two of the Nutrition Care Indicators (includes sample initial and reassessment documentation for one of the indicators)

Indicator(s) Selected

HgbA1c (% , mmol/mol)

Glucose/Endocrine Profile (BD-1.5)

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal: The patient/client's HgbA1c is 7.8% (60 mmol/mol), which is above the expected limit, but is an acceptable goal in a pediatric patient.
OR
- 2) Reference Standard: The patient/client's HgbA1c is 11% (97 mmol/mol), which is above (above, below, expected limit or range) the expected limit (< 6%, 42 mmol/mol).

Sample Nutrition Assessment and Monitoring and Evaluation Documentation

<i>Initial nutrition assessment with patient/client</i>	Patient/client's HgbA1c is 9% (75 mmol/mol), which is above the expected limit. Will monitor change in HgbA1c at next encounter.
<i>Reassessment after nutrition intervention</i>	Regression from the expected limit. Patient/client's HgbA1c is 10% (86 mmol/mol).

References

The following are some suggested references for indicators, measurement techniques, and reference standards; other references may be appropriate.

1. American Diabetes Association. Standards of medical care in diabetes. *Diabetes Care*; 2012;35:S11-S63. Available at: http://care.diabetesjournals.org/cgi/content/full/29/suppl_1/s4. Accessed April 27, 2012.
2. Academy of Nutrition and Dietetics. Critical illness evidence-based nutrition guideline. Available at: http://www.andevidencelibrary.com/template.cfm?key=767&cms_preview=1. Accessed January 26, 2012.
3. International Diabetes Center. Type 2 diabetes practice guidelines, 2003. Available at: <http://www.guidelinecentral.com/guidelines-author/international-diabetes-center-guidelines>. Accessed January 26, 2012.
4. Joslin Diabetes Center. Clinical Guidelines. Available at: http://www.joslin.org/joslin_clinical_guidelines.html. Accessed January 26, 2012.

Updated: 2013 Edition

Inflammatory Profile (BD-1.6)

Definition

Laboratory measures of inflammatory proteins

Nutrition Assessment

Indicators

C-reactive protein, highly sensitive or hs-CRP (mg/L) [cardiovascular disease]

Examples of the measurement methods or data sources for these indicators: Direct measurement, medical record

Typically used with the following domains of nutrition interventions: Food and/or nutrient delivery

Typically used to determine the following nutrition diagnoses: Increased nutrient need; less than optimal intake of types of fats; excessive physical activity

Clinical judgment must be used to select indicators and determine the appropriate measurement techniques and reference standards for a given patient population and setting. Once identified, these indicators, measurement techniques, and reference standards should be identified in policies and procedures or other documents for use in patient/client records, quality or performance improvement, or in formal research projects.

Evaluation

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal (tailored to patient/client's needs)
- OR
- 2) Reference Standard

Patient/Client Example

Example(s) of one or two of the Nutrition Care Indicators (includes sample initial and reassessment documentation for one of the indicators)

Indicator(s) Selected

C-reactive protein (mg/L)

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal: Not generally used.
- OR
- 2) Reference Standard: A patient/client has a C-reactive protein level of 4.0 mg/L, which is above (above, below, within expected range) the expected range of 1.0 to 3.0 mg/L.

Sample nutrition assessment documentation

<i>Nutrition assessment with patient/client</i>	Patient/client's C-reactive protein level is 4.0 mg/L, which is above (above, below, within expected range) the expected range of 1.0 to 3.0 mg/L.
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References:

The following are some suggested references for indicators, measurement techniques, and reference standards; other references may be appropriate.

1. NHLBI Workshop Report. C-Reactive Protein: Basic and Clinical Research Needs. Available at: <http://www.nhlbi.nih.gov/meetings/workshops/crp/report.htm>. Accessed January 26, 2012.
2. Position of the American Dietetic Association and Dietitians of Canada: Dietary fatty acids. *J Am Diet Assoc.* 2007;107:1599-1611.

Lipid Profile (BD-1.7)

Definition

Laboratory measures associated with lipid disorders

Nutrition Assessment and Monitoring and Evaluation

Indicators

- Cholesterol, serum (mg/dL or mmol/L)
- Cholesterol, HDL (mg/dL or mmol/L)
- Cholesterol, LDL (mg/dL or mmol/L)
- Cholesterol, non-HDL (mg/dL or mmol/L)
- Total cholesterol:HDL cholesterol (ratio)
- LDL:HDL (ratio)
- Triglycerides, serum (mg/dL or mmol/L)

Examples of the measurement methods or data sources for these indicators: Biochemical measurement, laboratory report, patient/client report

Typically used with the following domains of nutrition interventions: Nutrition education, nutrition counseling

Typically used to determine and to monitor and evaluate change in the following nutrition diagnoses:

Excessive or inadequate intake of fat, energy

Clinical judgment must be used to select indicators and determine the appropriate measurement techniques and reference standards for a given patient population and setting. Once identified, these indicators, measurement techniques, and reference standards should be identified in policies and procedures or other documents for use in patient/client records, quality or performance improvement, or in formal research projects.

Evaluation

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal (tailored to patient/client's needs)
- OR
- 2) Reference Standard

Patient/Client Example

Example(s) of one or two of the Nutrition Care Indicators (includes sample initial and reassessment documentation for one of the indicators)

Indicator(s) Selected

LDL cholesterol (mg/dL)

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal: The patient/client's LDL cholesterol is 200 mg/dL, compared to a goal of < 100 mg/dL. (Note: While reference standards are generally used for laboratory measures, a goal might be used in a special situation such as this example. The patient/client has a familial hypercholesterolemia where a normal reference standard may not be realistic.)
- OR
- 2) Reference Standard: The patient/client's LDL cholesterol is 159 mg/dL, which is above the expected limit of the NHLBI recommendation of < 100 mg/dL.

Lipid Profile (BD-1.7)

Sample Nutrition Assessment and Monitoring and Evaluation Documentation

Initial nutrition assessment with patient/client	The patient/client LDL cholesterol is 159 mg/dL compared to the reference standard (e.g., National Heart, Lung and Blood Institute) recommended level of < 100 mg/dL. Will monitor LDL cholesterol at next encounter.
Reassessment after nutrition intervention	Some progress toward goal/reference standard as patient/client's LDL cholesterol is 145 mg/dL.

References

The following are some suggested references for indicators, measurement techniques, and reference standards; other references may be appropriate.

1. Grundy S, Cleeman JI, Bairey Merz CN, Brewer HB, Clark LT, Hunninghake DB, Pasternak RC, Smith SC, Stone NJ, for the Coordinating Committee of the National Cholesterol Education Program, Endorsed by the National Heart, Lung, and Blood Institute, American College of Cardiology Foundation, and American Heart Association. Implications of recent clinical trials for the National Cholesterol Education Program Adult Treatment Panel III guidelines. *Circulation*. 2004;110:227-239.
2. Ingelsson E, Schaefer EJ, Contois JH, McNamara JR, Sullivan L, Keyes MJ, Pencina MJ, Schoonmaker C, Wilson PW, D'Agostino RB, Vasan RS. Clinical utility of different lipid measures for prediction of coronary heart disease in men and women. *JAMA*. 2007;298(7):776-785.
3. Nam BH, Kannel WB, D'Agostino RB. Search for an optimal atherogenic lipid risk profile: from the Framingham Study. *Am J Cardiol*. February 1, 2006;97(3):372-5.
4. National Institutes of Health, National Heart, Lung, and Blood Institute (NHLBI). Third Report of the Expert Panel on Detection, Evaluation, and Treatment of High Cholesterol in Adults, May 2001. Available at: <http://www.nhlbi.nih.gov/guidelines/cholesterol>. Accessed January 26, 2012.
5. National Kidney Foundation, K/DOQI Guidelines. Available at: http://www.kidney.org/professionals/kdoqi/guidelines_commentaries.cfm#guidelines. Accessed January 26, 2012
6. Onder G, Landi F, Volpato S, Fellin R, Carbonin P, Gambassi G, Bernabei R. Serum cholesterol levels and in-hospital mortality in the elderly. *Am J Med*. 2003;115:265-271.
7. Position of the American Dietetic Association. Nutrition Intervention and Human Immunodeficiency Virus Infection. *J Am Diet Assoc*. 2010;110:1105-1119.
8. Ridker PM, Rifai N, Cook NR, Bradwin G, Buring JE. Non-HDL cholesterol, apolipoproteins A-I and B100, standard lipid measures, lipid ratios, and CRP as risk factors for cardiovascular disease in women. *JAMA*. 2005;294(3):326-333.
9. Wang TD, Chen WJ, Chien KL, Seh-Yi Su SS, Hsu HC, Chen MF, Liao CS, Lee YT. Efficacy of cholesterol levels and ratios in predicting future coronary heart disease in a Chinese population. *Am J Cardiol*. 2001;88(7):737-743.

Updated: 2013 Edition

Metabolic Rate Profile (BD-1.8)

Definition

Measures associated with or having implications for assessing metabolic rate

Nutrition Assessment and Monitoring and Evaluation

Indicators

Resting metabolic rate, measured (calories, kcal or kJ/day)

Respiratory quotient, measured ($RQ = \text{CO}_2 \text{ produced} / \text{O}_2 \text{ consumed}$)

Note: Use of RQ is considered valid if respiratory factors (hyper- or hypoventilation), equipment failure, measurement protocol violations, or operator errors have not occurred.

Examples of the measurement methods or data sources for these indicators: Direct measurement (indirect calorimetry), medical record

Typically used with the following domains of nutrition interventions: Food and/or nutrient delivery

Typically used to determine the following nutrition diagnoses: Excessive or inadequate intake of parenteral/enteral nutrition; less than optimal enteral/parenteral nutrition; excessive energy intake; excessive mineral intake; disordered eating pattern; excessive exercise, increased energy expenditure, increased nutrient needs (energy), inadequate protein-energy intake.

Clinical judgment must be used to select indicators and determine the appropriate measurement techniques and reference standards for a given patient population and setting. Once identified, these indicators, measurement techniques, and reference standards should be identified in policies and procedures or other documents for use in patient/client records, quality or performance improvement, or in formal research projects.

Evaluation

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal (tailored to patient/client's needs)
- OR
- 2) Reference Standard

Patient/Client Example

Example(s) of one or two of the Nutrition Care Indicators (includes sample initial and reassessment documentation for one of the indicators)

Indicator(s) Selected

Respiratory quotient

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal: Not generally used.
- OR
- 2) Reference Standard: A patient/client on parenteral nutrition support with an RQ of 1.04, which is above (above, below, within expected range) the expected range (0.7 to 1.0) with no apparent errors in the measurement.

Metabolic Rate Profile (BD-1.8)

Sample nutrition assessment and/or monitoring and evaluation documentation

<i>Initial nutrition assessment with patient/client</i>	Patient/client's RQ is 1.04, with energy intake from parenteral nutrition 400 kcal (1,670 kJ) higher than measured metabolic rate. No apparent respiratory factors (hyper- or hypoventilation), equipment failure, measurement protocol violations, or operator errors. Will adjust content of parenteral nutrition and re-measure RQ.
<i>Reassessment after nutrition intervention</i>	RQ has dropped to 0.92 with no apparent measurement error. Metabolic rate and calorie/ kcal/kJ intake are matched. Parenteral nutrition has been appropriately adjusted to equal patient's energy requirement.

References

The following are some suggested references for indicators, measurement techniques, and reference standards; other references may be appropriate.

1. Academy of Nutrition and Dietetics. Critical Illness Adult Weight Management Evidence-Based Nutrition Practice Guideline. Available at: <http://www.andevidencelibrary.com/topic.cfm?cat=2799>. Accessed January 26, 2012.
2. Compher C, Frankenfield D, Keim N, Roth-Yousey L. Best practice methods to apply to measurement of resting metabolic rate in adults: A systematic review. *J Am Diet Assoc.* 2006;106:881-903.
3. American Society for Parenteral and Enteral Nutrition Board of Directors and the Clinical Guidelines Task Force. Guidelines for the use of parenteral and enteral nutrition in adult and pediatric patients: specific guidelines for disease—adults. *J Parenter Enteral Nutr.* 2002;26(Suppl):S61-S96.
4. American Society for Parenteral and Enteral Nutrition Board of Directors and the Clinical Guidelines Task Force. Guidelines for the use of parenteral and enteral nutrition in adult and pediatric patients: specific guidelines for disease—pediatrics. *J Parenter Enteral Nutr.* 2002;26(Suppl):S111-S138.
5. McClave SA, Lowen CC, Kleber MJ, McConnell JW, Jung LY, Goldsmith LJ. Clinical use of the respiratory quotient obtained from indirect calorimetry. *J Parenter Enteral Nutr.* 2003;27:21-26.

Mineral Profile (BD-1.9)

Definition

Laboratory measures associated with body mineral status

Nutrition Assessment and Monitoring and Evaluation

Indicators

- Copper, serum or plasma ($\mu\text{g/dL}$ or $\mu\text{mol/L}$)
- Iodine, urinary excretion ($\mu\text{g/24hr}$)
- Zinc, serum or plasma ($\mu\text{g/dL}$ or $\mu\text{mol/L}$)
- Boron, serum or plasma ($\mu\text{g/L}$)
- Chromium, serum (ng/mL or nmol/L), urinary ($\mu\text{g/L}$)
- Fluoride, plasma ($\mu\text{mol/L}$)
- Manganese, urinary excretion ($\mu\text{g/L}$ or nmol/L), blood ($\mu\text{g/L}$ or nmol/L), plasma ($\mu\text{g/L}$ or nmol/L)
- Molybdenum, serum (ng/mL)
- Selenium, serum ($\mu\text{mol/L}$), urinary excretion ($\mu\text{g/L}$ or $\mu\text{g/day}$)

Note: Other measures of body mineral status, such as urinary manganese excretion, are provided to offer complete information in the reference sheet. These are rarely used in practice, but may be warranted in limited circumstances.

Serum calcium, magnesium, phosphorus, and potassium can be found on the Electrolyte and Renal Profile reference sheet.

Serum iron, serum ferritin, and transferrin saturation can be found on the Nutritional Anemia Profile reference sheet.

Thyroid stimulating hormone ($\uparrow$ TSH as an indicator of excess iodine supplementation) can be found on the Glucose/Endocrine Profile reference sheet.

Examples of the measurement methods or data sources for these indicators: Biochemical measurement, laboratory record

Typically used with the following domains of nutrition interventions: Food and/or nutrient delivery, nutrition education, nutrition counseling

Typically used to determine and to monitor and evaluate change in the following nutrition diagnoses:

Excessive or inadequate intake of minerals, parenteral nutrition

Clinical judgment must be used to select indicators and determine the appropriate measurement techniques and reference standards for a given patient population and setting. Once identified, these indicators, measurement techniques, and reference standards should be identified in policies and procedures or other documents for use in patient/client records, quality or performance improvement, or in formal research projects.

Evaluation

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal (tailored to patient/client's needs)
- OR
- 2) Reference Standard

Patient/Client Example

Example(s) of one or two of the Nutrition Care Indicators (includes sample initial and reassessment documentation for one of the indicators)

Indicator(s) Selected

Zinc, plasma ($\mu\text{g/dL}$)

Mineral Profile (BD-1.9)

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal: There is no goal generally associated with mineral status.
OR
- 2) Reference Standard: The patient/client's plasma zinc is 40 µg/dL, which is below (above, below, within expected range) the expected range (66 to 110 µg/dL) for adults.

Sample Nutrition Assessment and Monitoring and Evaluation Documentation

<i>Initial nutrition assessment with patient/client</i>	Patient/client's plasma zinc is 40 µg/dL, which is below the expected range for adults. Will monitor change in plasma zinc at next encounter.
<i>Reassessment after nutrition intervention</i>	Goal/reference standard achieved as patient/client's plasma zinc is 90 µg/dL.

References

The following are some suggested references for indicators, measurement techniques, and reference standards; other references may be appropriate.

1. Institute of Medicine. *Dietary Reference Intakes for Calcium, Phosphorus, Magnesium, Vitamin D, and Fluoride*. Washington, DC: National Academies Press; 1997.
2. Institute of Medicine. *Dietary Reference Intakes for Calcium and Vitamin D*. Washington, DC: National Academies Press; 2010.
3. Institute of Medicine. *Dietary Reference Intakes for Vitamin A, Vitamin K, Arsenic, Boron, Chromium, Copper, Iodine, Iron, Manganese, Molybdenum, Nickel, Silicon, Vanadium, Zinc*. Washington, DC: National Academies Press; 2001.
4. Institute of Medicine. *Dietary Reference Intakes for Vitamin C, Vitamin E, Selenium, and Carotenoids*. Washington, DC: National Academies Press; 2000.
5. Institute of Medicine. *Dietary Reference Intakes for Water, Potassium, Sodium, Chloride, and Sulfate*. Washington DC: National Academies Press; 2004.

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Nutritional Anemia Profile (BD-1.10)

Definition

Laboratory measures associated with nutritional anemias

Nutrition Assessment and Monitoring and Evaluation

Indicators

Hemoglobin (g/dL g/L or mmol/L)	Serum folate (ng/mL or nmol/L)
Hematocrit (% or proportion of one (1))	Serum homocysteine (μmol/L)
Mean corpuscular volume, MCV (fL)	Serum ferritin (ng/mL or pmol/L)
RBC folate (ng/mL or nmol/L)	Serum iron (μg/dL or μmol/L)
Red cell distribution width, RDW (%)	Total iron-binding capacity (μg/dL or μmol/L)
Serum B12 (pg/mL or pmol/L)	Transferrin saturation (%)
Serum methylmalonic acid, MMA (nmol/L)	

Examples of the measurement methods or data sources for these indicators: Biochemical measurement, patient/client laboratory record; national/state/local nutrition monitoring and surveillance data

Typically used with the following domains of nutrition interventions: Food and/or nutrient delivery, nutrition education, nutrition counseling, coordination of nutrition care

Typically used to determine and to monitor and evaluate change in the following nutrition diagnoses: Excessive or inadequate intake of vitamins or minerals (e.g., iron, B12, folate); altered nutrition-related laboratory values; impaired nutrient utilization

Clinical judgment must be used to select indicators and determine the appropriate measurement techniques and reference standards for a given patient population and setting. Once identified, these indicators, measurement techniques, and reference standards should be identified in policies and procedures or other documents for use in patient/client records, quality or performance improvement, or in formal research projects.

Evaluation

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal (tailored to patient/client's needs)
- OR
- 2) Reference Standard

Patient/Client Example

Example(s) of one or two of the Nutrition Care Indicators (includes sample initial and reassessment documentation for one of the indicators)

Indicator(s) Selected

Hemoglobin (gm/dL)
Serum ferritin (ng/mL)

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal: The patient/client's hemoglobin and hematocrit are below the expected limits for adult males, but are within the goal range for a patient/client receiving hemodialysis.
- OR
- 2) Reference Standard: The patient/client's serum ferritin is 8 ng/mL, which is below (above, below, or within expected range) the expected range for adult females.

Nutritional Anemia Profile (BD-1.10)

Sample Nutrition Assessment and Monitoring and Evaluation Documentation

<i>Initial nutrition assessment with patient/client</i>	Patient/client's serum ferritin is 8 ng/mL, which is below the expected range for adult females. Will monitor change in serum ferritin at next encounter.
<i>Reassessment after nutrition intervention</i>	Patient/client's serum ferritin is 10.9 ng/mL, within the expected range.

References

The following are some suggested references for indicators, measurement techniques, and reference standards; other references may be appropriate.

1. Charney P, Malone A. *ADA Pocket Guide to Nutrition Assessment*. 2nd ed. Chicago, IL: American Dietetic Association; 2009.
2. Centers for Disease Control and Prevention. Recommendations to prevent and control iron deficiency anemia in the United States. *MMWR*. 2002;51:897-899.
3. Johns Hopkins Hospital. *The Harriet Lane Handbook: A Manual for Pediatric House Officers*. 17th ed. St. Louis, MO: Mosby; 2005.
4. National Kidney Foundation, Dialysis Outcomes Quality Initiative. Available at <http://kidney.niddk.nih.gov/kudiseases/pubs/anemia/index.htm#diagnosis>. Accessed October 23, 2006.

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Protein Profile (BD-1.11)

Definition

Laboratory measures associated with hepatic and circulating proteins.

Nutrition Assessment and Monitoring and Evaluation

Indicators

- Albumin (g/dL or g/L)
- Prealbumin (mg/dL mg/L)
- Transferrin (mg/dL or g/L)
- Phenylalanine, plasma (mg/dL or $\mu\text{mol/L}$)
- Tyrosine, plasma (100 $\mu\text{mol/L}$)
- Amino acid, other (by report)
- Antibody level, specify
- Carbohydrate-deficient transferrin (mg/dL or %)

Note: Hepatic proteins may be useful when monitoring nutritional status over time in conjunction with other markers/information about nutritional status (e.g., body weight, weight change, nutrient intake).

Examples of the measurement methods or data sources for these indicators: Biochemical measurement, laboratory report

Typically used with the following domains of nutrition interventions: Food and/or nutrient delivery, nutrition education, nutrition counseling, coordination of nutrition care

Typically used to determine and to monitor and evaluate change in the following nutrition diagnoses:

Increased nutrient needs, evident protein-energy malnutrition, inadequate enteral/parenteral nutrition infusion

Clinical judgment must be used to select indicators and determine the appropriate measurement techniques and reference standards for a given patient population and setting. Once identified, these indicators, measurement techniques, and reference standards should be identified in policies and procedures or other documents for use in patient/client records, quality or performance improvement, or in formal research projects.

Evaluation

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal (tailored to patient/client's needs)
OR
- 2) Reference Standard

Patient/Client Example

Example(s) of one or two of the Nutrition Care Indicators (includes sample initial and reassessment documentation for one of the indicators)

Indicator(s) Selected

Prealbumin (mg/dL.)

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal: Not generally used.
OR
- 2) Reference Standard: The patient/client's prealbumin is 7 mg/dL, which is below (above, below, or within the expected range) the expected range (16 to 40 mg/dL) for adults.

Protein Profile (BD-1.11)

Sample Nutrition Assessment and Monitoring and Evaluation Documentation

<i>Initial nutrition assessment with patient/client</i>	Patient/client's prealbumin is 7.0 mg/dL, below the expected range (16 to 40 mg/dL) for adults. Will monitor change in prealbumin at next encounter.
<i>Reassessment after nutrition intervention</i>	Significant progress toward expected range as patient/client's serum prealbumin is 13.0 mg/dL.

References

The following are some suggested references for indicators, measurement techniques, and reference standards; other references may be appropriate.

1. Charney P, Malone A. *ADA Pocket Guide to Nutrition Assessment*. 2nd ed. Chicago, IL: American Dietetic Association; 2009.
2. American Dietetic Association. Nutrition Care Manual. Available at: www.nutritioncaremanual.org. Accessed January 26, 2012.
3. Academy of Nutrition and Dietetics. Celiac Disease Evidenced-based Nutrition Practice Guideline. Available at: <http://www.andevidencelibrary.com/topic.cfm?cat=3677>. Accessed January 26, 2012.
4. Fuhrman MP, Charney P, Mueller CM. Hepatic proteins and nutrition assessment. *J Am Diet Assoc*. 2004;104:1258-1264.
5. The Johns Hopkins Hospital. *The Harriet Lane Handbook: A Manual for Pediatric House Officers*. 17th ed. St. Louis MO: Mosby; 2005.
6. National Kidney Foundation. Clinical Practice Guidelines for Nutrition in Chronic Renal Failure, 2000. Available at http://www.kidney.org/professionals/kdoqi/guidelines/doqi_nut.html. Accessed October 19, 2006.

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Urine Profile (BD-1.12)

Definition

Physical and/or chemical properties of urine

Nutrition Assessment and Monitoring and Evaluation

Indicators

- Urine color (by visualization)
- Urine osmolality (mOsm/kg H₂O)
- Urine specific gravity (number)
- Urine tests (e.g., calcium mg/day and/or presence/absence of ketones, sugar, protein, microalbumin)
- Urine volume (mL/24 hours; however, in certain populations, e.g., infants, this indicator may be reported in number of wet diapers/day)

Examples of the measurement methods or data sources for these indicators: Observation, biochemical measurement, laboratory report, patient/client report

Typically used with the following domains of nutrition interventions: Food and/or nutrient delivery, coordination of nutrition care

Typically used to determine and to monitor and evaluate change in the following nutrition diagnoses:

Inadequate or excessive fluid intake; inadequate or excessive enteral/parenteral nutrition infusion

Clinical judgment must be used to select indicators and determine the appropriate measurement techniques and reference standards for a given patient population and setting. Once identified, these indicators, measurement techniques, and reference standards should be identified in policies and procedures or other documents for use in patient/client records, quality or performance improvement, or in formal research projects.

Evaluation

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal (tailored to patient/client's needs)
OR
- 2) Reference Standard

Patient/Client Example

Example(s) of one or two of the Nutrition Care Indicators (includes sample initial and reassessment documentation for one of the indicators)

Indicator(s) Selected

Urine specific gravity

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal: Not generally used for this indicator.
OR
- 2) Reference Standard: The patient/client's urine specific gravity is 1.050, which is above (above, below, within expected range) the expected range (1.003 to 1.030).

Urine Profile (BD-1.12)

Sample Nutrition Assessment and Monitoring and Evaluation Documentation

<i>Initial nutrition assessment with patient/client</i>	Patient/client's urine specific gravity is 1.050, which is above the expected range. Will monitor change in urine specific gravity at next encounter.
<i>Reassessment after nutrition intervention</i>	Significant progress toward goal, patient/client's urine specific gravity is 1.035, which is within the expected range.

References

The following are some suggested references for indicators, measurement techniques, and reference standards; other references may be appropriate.

1. Charney P, Malone A. *ADA Pocket Guide to Nutrition Assessment*. 2nd ed. Chicago, IL: American Dietetic Association; 2009.
2. Armstrong LE. Hydration assessment techniques. *Nutr Rev*. 2005;63(6 pt 2):S40-54.
3. National Institutes of Health, Clinical Center Test Guide. Available at: <http://cclnprod.cc.nih.gov/dlm/testguide.nsf/Index?OpenForm>. Accessed April 23, 2012.

Updated: 2013 Edition

Vitamin Profile (BD-1.13)

Definition

Laboratory measures associated with body vitamin status

Nutrition Assessment and Monitoring and Evaluation

Indicators

Vitamin A, serum or plasma retinol ($\mu\text{g/dL}$ or $\mu\text{mol/L}$)

Vitamin C, plasma or serum (mg/dL or $\mu\text{mol/L}$)

Vitamin D, 25-hydroxy (ng/mL or nmol/L)

Vitamin E, plasma alpha-tocopherol (mg/dL or $\mu\text{mol/L}$)

Thiamin, activity coefficient for erythrocyte transketolase activity ($\mu\text{g/mL/hr}$)

Riboflavin, activity coefficient for erythrocyte glutathione reductase activity (IU/g hemoglobin)

Niacin, urinary N'methyl-nicotinamide concentration ($\mu\text{mol/day}$)

Vitamin B6, plasma or serum pyridoxal 5'phosphate concentration (ng/mL or nmol/L)

Pantothenic acid, urinary pantothenate excretion (mg/day), plasma (ng/mL or nmol/L)

Biotin, urinary 3-hydroxyisovaleric acid excretion ($\text{mmol/mmol creatinine}$) or lymphocyte propionyl-CoA carboxylase in pregnancy [$\text{pmol}/(\text{min} \times \text{mg})$], serum (ng/mL or nmol/L)

Note: Other measures of body vitamin status, such as urinary pantothenate excretion, are provided to offer complete information in the reference sheet. These are rarely used in practice, but may be warranted in limited circumstances.

Measures for folate and Vitamin B12 can be found on the Nutritional Anemia Profile reference sheet.

Measures related to Vitamin K (PT, PTT, INR) can be found on the GI Profile reference sheet.

A test for Choline is not available. According to the DRIs, it should be evaluated in light of serum alanine amino transferase (ALT) levels which can be found on the GI Profile (BD-1.4).

Examples of the measurement methods or data sources for these indicators: Biochemical measurement, patient/client record

Typically used with the following domains of nutrition interventions: Food and/or nutrient delivery, coordination of nutrition care

Typically used to determine and to monitor and evaluate change in the following nutrition diagnoses:
Excessive or inadequate intake of vitamins

Clinical judgment must be used to select indicators and determine the appropriate measurement techniques and reference standards for a given patient population and setting. Once identified, these indicators, measurement techniques, and reference standards should be identified in policies and procedures or other documents for use in patient/client records, quality or performance improvement, or in formal research projects.

Evaluation

Criteria for Evaluation

Comparison to Goal or Reference Standard:

1) Goal (tailored to patient/client's needs)

OR

2) Reference Standard

Patient/Client Example

Example(s) of one or two of the Nutrition Care Indicators (includes sample initial and reassessment documentation for one of the indicators)

Indicator(s) Selected:

Vitamin A, serum retinol ($\mu\text{g/dL}$)

Vitamin Profile (BD-1.13)

Criteria for Evaluation

Comparison to Goal or Reference Standard:

1) Goal: Not generally used for this indicator.

OR

2) Reference Standard: The patient/client's serum retinol is 95 µg/dL which is above (above, below, within expected range) the expected range (10 to 60 µg/dL).

Sample Nutrition Assessment and Monitoring and Evaluation Documentation

Initial nutrition assessment with patient/client	Patient/client's serum retinol is 95 µg/dL, which is above the expected range. Will monitor change in serum retinol at next encounter, along with vitamin A and beta-carotene intake.
Reassessment after nutrition intervention	Significant progress toward expected range. Patient/client's retinol is 70 µg/dL.

References

The following are some suggested references for indicators, measurement techniques, and reference standards; other references may be appropriate.

1. Academy of Nutrition and Dietetics. Nutrition Care Manual. Available at: www.nutritioncaremanual.org. Accessed January 26, 2012.
2. Gropper SS, Smith JL, Groff JL. *Advanced Nutrition and Human Metabolism*. Belmont, CA: Thomson Wadsworth, 2005.
3. American Society for Parenteral and Enteral Nutrition Board of Directors and the Clinical Guidelines Task Force. Guidelines for the use of parenteral and enteral nutrition in adult and pediatric patients: normal requirements—adults. *J Parenter Enteral Nutr*. 2002;26(Suppl):S22-S24.
4. American Society for Parenteral and Enteral Nutrition Board of Directors and the Clinical Guidelines Task Force. Guidelines for the use of parenteral and enteral nutrition in adult and pediatric patients: normal requirements—pediatrics. *J Parenter Enteral Nutr*. 2002;26(Suppl):S25-S32.
5. McMahon RJ. Biotin in metabolism and molecular biology. *Annu Rev Nutr*. 2002;22:221-239.
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7. Institute of Medicine. *Dietary Reference Intakes for Calcium, Phosphorus, Magnesium, Vitamin D, and Fluoride*. Washington, DC: National Academies Press; 1997.
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9. Institute of Medicine. *Dietary Reference Intakes: Thiamin, Riboflavin, Niacin, Vitamin B6, Folate, Vitamin B12, Pantothenic acid, Biotin, and Choline*. Washington, DC: National Academies Press; 1998.
10. Institute of Medicine. *Dietary Reference Intakes for Vitamin A, Vitamin K, Arsenic, Boron, Chromium, Copper, Iodine, Iron, Manganese, Molybdenum, Nickel, Silicon, Vanadium, and Zinc*. Washington, DC: National Academies Press; 2001.
11. Institute of Medicine. *Dietary Reference Intakes: Vitamin C, Vitamin E, Selenium, and Carotenoids*. Washington, DC: National Academies Press; 2000.
12. Stratton SL, Bogusiewicz A, Mock MM, Mock NI, Wells AM, Mock DM. Lymphocyte propionyl-CoA carboxylase and its activation by biotin are sensitive indicators of marginal biotin deficiency in humans. *Am J Clin Nutr*. 2006;84:384-388.
13. The Johns Hopkins Hospital. *The Harriet Lane Handbook: A Manual for Pediatric House Officers*. 17th ed. St. Louis, MO: Mosby; 2005.
14. Trumbo P, Yates A, Schlicker S, Poos M. Dietary Reference Intakes: Vitamin A, Vitamin K, Arsenic, Boron, Chromium, Copper, Iodine, Iron, Manganese, Molybdenum, Nickel, Silicon, Vanadium, and Zinc. *J Am Diet Assoc*. 2001;101:294-301.
15. Yates A, Schlicker SA, Suitor CW. Dietary Reference Intakes: The new basis for recommendations for calcium and related nutrients, B vitamins, and choline. *J Am Diet Assoc*. 1998;98:699-706.
16. Zempleni J, Mock DM. Biotin biochemistry and human requirements. *J Nutr Biochem*. 1999;10:128-138.

Updated: 2013 Edition

Nutrition-Focused Physical Findings (PD-1.1)

Definition

Nutrition-related physical characteristics associated with pathophysiological states derived from a nutrition-focused physical exam, interview, or the medical record

Nutrition Assessment and Monitoring and Evaluation

Indicators (Note: Presence or absence unless otherwise specified)

- Overall appearance
 - Body positioning, e.g., muscle contractures
 - Body habitus, specify
 - Cushingoid appearance
 - Amputations, specify
 - Ability to communicate
 - Affect, specify
 - Tanner stage, specify
 - Other
- Body language (note: varies by culture), specify
- Cardiovascular-pulmonary system
 - edema, pulmonary; crackles or rales
 - shortness of breath
- Extremities, muscles and bones
 - bones, specify, obvious prominence, fragility, widening at ends
 - change in how clothes fit, specify
 - edema, peripheral, specify
 - fat, subcutaneous, specify loss or excess
 - fatigue
 - feeling cold all of the time
 - hands/feet, specify, cyanosis, tingling and numbness
 - joint, arthralgia, effusions
 - joint mobility, wrist/digit/arm/knee/hip movement
 - muscle mass, specify
 - muscle soreness or weakness
 - nails, nail beds, specify, blue, clubbing, pale, other
 - Russell's sign
- Digestive system (mouth to rectum):
 - belching, excessive
 - cheilosis
 - dry mucus membranes, xerostomia
 - feeling of food "stuck" in throat
 - gingivitis
 - heartburn
 - hoarse or wet voice
 - ketone smell on breath, halitosis
 - lesions, oral or esophageal
 - lips, specify (dry or cracked, poor closure, drooling)
 - malformations, oral, e.g., cleft palate or other
 - mastication, altered, specify
 - mucosal edema
 - parotid glands, swollen
 - polydipsia
 - pouching
 - stomatitis
 - swallow function, compromised or painful
 - suck, swallow, breath coordination (infants)
 - taste alterations, specify
 - teeth, specify (edentulous, partially or completely)
 - tongue, specify, bright red, magenta, dry cracked, glossitis, impaired movement, frenulum abnormality
 - abdominal distension, bloating, cramping, pain
 - appetite, specify
 - ascites
 - bowel function, including flatus, specify, e.g., type, frequency, volume
 - bowel sounds, specify, normal, hyperactive, hypoactive
 - epigastric pain
 - nausea
 - satiety, specify
 - vomiting

Nutrition-Focused Physical Findings (PD-1.1)

- Head and eyes

Eyes:

- bitot's spots
- night blindness
- sclera, jaundiced
- sunken eyes
- vision, specify
- xerophthalmia

Head:

- fontanelle, bulging or sunken
- hair, specify, brittle, lifeless, coiled, loss
- headache
- lanugo hair formation
- nasal mucosa, dry
- olfactory sense, altered, specify
- temporal wasting

- Nerves and cognition

- confusion, loss of concentration
- cranial nerve evaluation, specify
- dizziness
- motor, gait disturbance
- neurological changes, other, specify
- vibratory and position sense, specify

- Skin

- acanthosis nigricans
- calcinosis
- changes consistent with nutrient deficiency/excess, specify
- dermatitis
- dry, scaly
- ecchymosis
- erythema, scaling and peeling
- fistula output, specify volume
- follicular hyperkeratosis
- integrity, turgor, specify
- jaundice
- perifollicular hemorrhages
- petechiae
- pressure ulcers, specify location and stage
- pruritis
- seborrheic dermatitis
- wound healing, specify
- xanthomas

- Vital signs

- blood pressure (mmHg)
- heart rate (beats/min)
- respiratory rate (breaths/min)
- temperature (degrees)

Examples of the measurement methods or data sources for these indicators: Direct observation, patient/client report, medical record

Typically used with the following domains of nutrition interventions: Food and nutrient delivery, nutrition education, nutrition counseling, coordination of care

Typically used to determine and to monitor and evaluate change in the following nutrition diagnoses:

Excessive or inadequate intake of sodium, vitamins/minerals, fluid, parenteral/enteral nutrition; overweight/obesity, underweight, unintended weight loss

Clinical judgment must be used to select indicators and determine the appropriate measurement techniques and reference standards for a given patient population and setting. Once identified, these indicators, measurement techniques, and reference standards should be identified in policies and procedures or other documents for use in patient/client records, quality or performance improvement, or in formal research projects.

Evaluation

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal (tailored to patient/client's needs)
- OR
- 2) Reference Standard

Nutrition-Focused Physical Findings (PD-1.1)

Patient/Client Example

Example(s) of one or two of the Nutrition Care Indicators (includes sample initial and reassessment documentation for one of the indicators)

Indicator(s) Selected

Blood pressure (mmHg)

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal: The patient/client has reduced blood pressure to goal of 135/85 mmHg with weight loss.
OR
- 2) Reference Standard: The patient/client's blood pressure is 150/90 mmHg, which is above (above, below) the expected limit (<120/80 mmHg) and consistent with Stage I Hypertension.

Sample Nutrition Assessment and Monitoring and Evaluation Documentation

<i>Initial nutrition assessment with patient/client</i>	Patient/client's blood pressure is 150/90 mmHg, which is above the expected limit and consistent with Stage I hypertension. Will monitor change in blood pressure at next encounter.
<i>Reassessment after nutrition intervention</i>	Significant progress toward expected limit. Patient/client's blood pressure is 135/82 mmHg.

References

The following are some suggested references for indicators, measurement techniques, and reference standards; other references may be appropriate.

1. Academy of Nutrition and Dietetics. Critical illness evidence-based nutrition guideline. Available at: http://www.andevidencelibrary.com/template.cfm?key=767&cms_preview=1. Accessed January 26, 2012.
2. Academy of Nutrition and Dietetics. Unintended weight loss in older adults evidence-based nutrition practice guideline. Available at: <http://www.andevidencelibrary.com/topic.cfm?cat=3651&library=EBG>. Accessed January 27, 2012.
2. Charney P, Malone A. *ADA Pocket Guide to Nutrition Assessment*. 2nd ed. Chicago, IL: American Dietetic Association; 2009.
3. Centers for Medicare and Medicaid Services. Minimum Data Set (MDS)-Version 3.0 for Nursing Home Resident Assessment and Care Screening Basic Assessment Tracking Form. Available at: www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/NursingHomeQualityInits/index.html. Accessed April 27, 2012.
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6. Position of the American Dietetic Association: Oral health and nutrition. *J Am Diet Assoc*. 2007;107:1418-1428.
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8. US Preventive Services Task Force (USPSTF). Screening for high blood pressure: recommendations and rationale. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ), 2003. Available at: http://www.guideline.gov/summary/summary.aspx?doc_id=3853&nbr=003068&string=AHRQ+AND+guideline. Accessed November 14, 2006.

Updated: 2011 Edition

Personal Data (CH-1.1)

Definition

General patient/client information such as age, gender, race/ethnicity, occupation, tobacco use, and physical disability

Nutrition Assessment:

Indicators

Age***

- Age in days (neonates)***
- Age in months (up to 36 months)***
- Age in years***
- Other (e.g., age adjusted)***

Gender***

- Female***
- Male***

Race/ethnicity***

- White***
- Black/African American***
- Hispanic ethnicity***
- Asian***
- Other (specify)***

Language***

- English***
- Spanish***
- Other (specify)***

Literacy factors***

- Language barrier***
- Low literacy***

Education***

- Years of education (Year of education)***

Role in family***

- Specify***(patient/client's reported role, e.g., mother, cousin, in the description of his/her family)

Tobacco use***

- Yes***
 - Average number cigarettes smoked per day (number/day)***
 - Total number of other tobacco products used/day (number/day)***
 - Number years tobacco products used on a regular basis (years)***
- No***

Physical disability***

- Eyesight impaired***
- Hearing impaired***
- Other (specify)***

Mobility***

- House bound***
- Bed or chair bound***
- Tremors (Parkinson's)***
- Other (specify)***

Examples of the measurement methods or data sources for these outcome indicators: Patient/client report, medical record, referring health care provider or agency, surveys, administrative data sets

Typically used with following domains of nutrition interventions: Food and/or Nutrient Delivery, nutrition education, nutrition counseling, coordination of nutrition care

Typically used to determine the following nutrition diagnoses: N/A

Clinical judgment must be used to select indicators and determine the appropriate measurement techniques and reference standards for a given patient population and setting. Once identified, these indicators, measurement techniques, and reference standards should be identified in policies and procedures or other documents for use in patient/client records, quality or performance improvement, or in formal research projects.

Evaluation

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal (tailored to patient/client's needs)
- OR
- 2) Reference Standard

*** Denotes indicator is used for nutrition assessment only. Other indicators are used for both nutrition assessment and nutrition monitoring and evaluation.

Personal Data (CH-1.1)

Patient/Client Example(s)

Example(s) of one or two of the Nutrition Care Indicators (includes sample initial assessment documentation for one of the indicators)

Indicator(s) Selected

Age, race/ethnicity, gender and education level

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal: Not typically used
- OR
- 2) Reference Standard: No standard exists

Sample nutrition assessment documentation

<i>Initial nutrition assessment with patient/client</i>	Patient/client is a 40-year-old African American male with new onset type 2 diabetes, 7th grade education level
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References

The following are some suggested references for indicators, measurement techniques, and reference standards for the outcome; other references may be appropriate.

1. Charney P, Malone A. *ADA Pocket Guide to Nutrition Assessment*. 2nd ed. Chicago, IL: American Dietetic Association; 2009.
2. Loenberg BL. *ADA Pocket Guide to Pediatric Nutrition Assessment*. Chicago, IL: American Dietetic Association; 2004.

Patient/Client or Family Nutrition-Oriented Medical/Health History (CH-2.1)

Definition

Patient/client or family member disease states, conditions, and illnesses that may impact nutritional status

Nutrition Assessment

Indicators

Patient/client chief nutrition complaint (specify)***

Cardiovascular***

- Cardiovascular disease***
- Congestive heart failure***
- Hyperlipidemia***
- Hypertension***
- Stroke***
- Other***

Endocrine/metabolism***

- Cystic fibrosis***
- Diabetes mellitus***
- Diabetes, gestational***
- Inborn errors***
- Malnutrition/failure to thrive***
- Metabolic syndrome***
- Obesity***
- Overweight (specify duration)***
- Other (specify)***

Excretory***

- Dehydration***
- Renal failure, acute***
- Renal failure, chronic***
- Other (specify)***

Gastrointestinal***

- Crohn's disease***
- Diverticulitis/osis***
- Dyspepsia***
- Inflammatory bowel disease***
- Lactase deficiency***
- Liver disease***
- Pancreatic disease (specify)***
- Other (specify)***

Gynecological***

- Amenorrhea***
- Lactating***
- Mastitis***

- Perimenopausal/postmenopausal***

- Pregnant***

- Gestational age (weeks)***
- Single fetuses***
- Multiple fetus (specify)***

- Other (specify)***

Hematology/oncology***

- Anemia (specify)***
- Cancer (specify)***
- Other (specify)***

Immune***

- AIDS/HIV***
- Food allergies***
- Sepsis/severe infection***
- Other (specify)***

Integumentary***

- Burns***
- Other (specify)***

Musculoskeletal***

- Multiple trauma/fractures***
- Osteoporosis***
- Other (specify)***

Neurological***

- Developmental delay***
- Other (specify)***

Psychological***

- Alcoholism***
- Cognitive impairment***
- Dementia/Alzheimer's***
- Depression***
- Eating disorder (specify)***
- Psychosis***
- Other (specify)***

Respiratory***

- Chronic obstructive pulmonary disease***
- Other (specify)***

Other***

Examples of the measurement methods or data sources for these outcome indicators: Medical record, referring health care provider or agency

*** Denotes indicator is used for nutrition assessment only. Other indicators are used for both nutrition assessment and nutrition monitoring and evaluation.

Patient/Client or Family Nutrition-Oriented Medical/Health History (CH-2.1)

Typically used with following domains of nutrition interventions: Nutrition education, nutrition counseling

Typically used to determine the following nutrition diagnoses: All

Clinical judgment must be used to select indicators and determine the appropriate measurement techniques and reference standards for a given patient population and setting. Once identified, these indicators, measurement techniques, and reference standards should be identified in policies and procedures or other documents for use in patient/client records, quality or performance improvement, or in formal research projects.

Evaluation

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal (tailored to patient/client's needs)
OR
- 2) Reference Standard

Patient Example(s)

Example(s) of one or two of the Nutrition Care Indicators (includes sample initial assessment documentation for one of the indicators)

Indicator(s) Selected

Cardiovascular disease (CVD)

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal: Not typically used
OR
- 2) Reference Standard: No reference standard exists.

Sample nutrition assessment documentation

<i>Initial nutrition assessment with patient/client</i>	Patient/client with history of CVD. Recommend the Therapeutic Lifestyle Changes (TLC) diet in accordance with the reference standard (e.g., NHLBI Adult Treatment Panel III guidelines)
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References

The following are some suggested references for indicators, measurement techniques, and reference standards for the outcome; other references may be appropriate.

1. Charney P, Malone A. *ADA Pocket Guide to Nutrition Assessment*. 2nd ed. Chicago, IL: American Dietetic Association; 2009.
2. American Heart Association Nutrition Committee: Lichtenstein A, Appel L, Brands M, Carnethon M, Daniels S, Franch HA, Franklin B, Kris-Etherton P, Harris WS, Howard B, Karanja N, Lefevre M, Rudel L, Sacks F, Van Horn L, Winston M, Wylie-Rosett J. Diet and lifestyle recommendations revision 2006: a scientific statement from the American Heart Association Nutrition Committee. *Circulation*. 2006;114:82-96.
3. Bantle JP, Wylie-Rosett J, Albright AL, Apovian CM, Clark NG, Franz MJ, Hoogwerf BJ, Lichtenstein AH, Mayer-Davis E, Mooradian AD, Wheeler ML. Nutrition recommendations and interventions for diabetes—2006: a position statement of the American Diabetes Association. *Diabetes Care*. 2006;29:2140-2157.
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6. Academy of Nutrition and Dietetics. Nutrition Care Manual. Available at: www.nutritioncaremanual.org. Accessed January 26, 2012.
7. Murray KO, Holli BB, Calabrese RJ. *Communication & Education Skills for Dietetics Professionals*. 4th Ed. Philadelphia: Lippincott Williams & Wilkins, 2003.

Updated: 2011 Edition

Treatments/Therapy (CH-2.2)

Definition

Documented medical or surgical treatments, complementary and alternative medicine that may impact nutritional status of the patient

Nutrition Assessment

Indicators

Medical treatment/therapy***

- Chemotherapy***
- Dialysis***
- Mechanical ventilation/oxygen therapy***
- Ostomy (specify)***
- Radiation therapy***
- Other (specify, e.g., speech, OT, PT)***

Surgical treatment***

- Coronary artery bypass (CABG)***
- Gastric bypass (specify type)***

- Intestinal resection***
- Joint/orthopedic surgery/replacement***
- Limb amputation***
- Organ transplant (specify)***
- Total gastrectomy***
- Other (specify)***

Palliative/end-of-life care (care of patient/client with terminal or life-threatening conditions)***

Examples of the measurement methods or data sources for these indicators: Patient/client interview, medical record, referring health care provider or agency

Typically used with following domains of nutrition interventions: Food and/or nutrient delivery, nutrition education, nutrition counseling, coordination of nutrition care

Typically used to determine the following nutrition diagnoses: Impaired nutrient utilization, increased nutrient needs, altered gastrointestinal function, biting/chewing (masticatory) difficulty, involuntary weight loss.

Clinical judgment must be used to select indicators and determine the appropriate measurement techniques and reference standards for a given patient population and setting. Once identified, these indicators, measurement techniques, and reference standards should be identified in policies and procedures or other documents for use in patient/client records, quality or performance improvement, or in formal research projects.

Evaluation

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal (tailored to patient/client's needs)
- OR
- 2) Reference Standard

Patient/Client Example(s)

Example(s) of one or two of the Nutrition Care Indicators (includes sample initial assessment documentation for one of the indicators)

Indicator(s) Selected

Radiation therapy

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal: Patient/client receiving radiation therapy for lung cancer, experiencing decreased appetite and pain with eating. Goal is to optimize nutrition during radiation therapy.
- OR
- 2) Reference Standard: No standards exist.

*** Denotes indicator is used for nutrition assessment only. Other indicators are used for both nutrition assessment and nutrition monitoring and evaluation.

Treatments/Therapy (CH-2.2)

Sample nutrition assessment documentation

<i>Initial nutrition assessment with patient/client</i>	Patient/client receiving radiation therapy for lung cancer, experiencing decreased appetite due to fatigue and pain with eating.
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References

The following are some suggested references for indicators, measurement techniques, and reference standards for the outcome; other references may be appropriate.

1. Charney P, Malone A. *ADA Pocket Guide to Nutrition Assessment*. 2nd ed. Chicago, IL: American Dietetic Association; 2009.
2. Academy of Nutrition and Dietetics. Nutrition Care Manual. Available at: www.nutritioncaremanual.org. Accessed January 26, 2012.
3. Elliott L, Molseed LL, McCallum PD, Grant B. *The Clinical Guide to Oncology Nutrition*. 2nd ed. Chicago, IL: American Dietetic Association; 2006.
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5. US National Library of Medicine, National Institutes of Health, Medline Plus. Available at: <http://www.nlm.nih.gov/medlineplus/canceralternativetherapies.html>. Accessed December 18, 2007.
6. National Institutes of Health and the National Center for Complementary and Alternative Medicine. Available at: <http://nccam.nih.gov/health>. Accessed November 29, 2007.

Social History (CH-3.1)

Definition

Patient/client information such as socioeconomic factors, housing situation, medical support, occupation, religion, history of recent crisis and involvement in social groups

Nutrition Assessment

Indicators

Socioeconomic factors***

- Economic constraints (major/minor)***
- Access to medical care (full/limited/none)***
- Diverts food money to other needs***
- Other (specify)***

Living/housing situation***

- Lives alone***
- Lives with family member/caregiver***
- Homeless***

Domestic issues***

- Specify***

Social and medical support***

- Family members***
- Caregivers***
- Community group/senior center/church***
- Support group attendance (e.g., weight control, substance abuse, etc.)***
- Other (specify)***

Geographic location of home***

- Urban***
- Rural***

- Limited exposure to sunlight (vitamin D)***
- Other (specify)***

Occupation***

- Stay-at-home mother***
- Student***
- Retired***
- Specify***

Religion***

- Catholic***
- Jewish***
- Protestant***
- Specify***
- Islam***
- Specify***

History of recent crisis***

- Job loss***
- Family member death***
- Trauma, surgery***
- Other (specify)***

Daily stress level (high, moderate, low bodily or mental tension)***

Examples of the measurement methods or data sources for these outcome indicators: Patient/client report, medical record, referring health care provider or agency

Typically used with following domains of nutrition interventions: Food and/or nutrient delivery, nutrition education, nutrition counseling, coordination of nutrition care

Typically used to determine the following nutrition diagnoses: All

Clinical judgment must be used to select indicators and determine the appropriate measurement techniques and reference standards for a given patient population and setting. Once identified, these indicators, measurement techniques, and reference standards should be identified in policies and procedures or other documents for use in patient/client records, quality or performance improvement, or in formal research projects.

Evaluation

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal (tailored to patient/client's needs)
- OR
- 2) Reference Standard

*** Denotes indicator is used for nutrition assessment only. Other indicators are used for both nutrition assessment and nutrition monitoring and evaluation.

Social History (CH-3.1)

Patient/Client Example(s)

Example(s) of one or two of the Nutrition Care Indicators (includes sample initial assessment documentation for one of the indicators)

Indicator(s) Selected

Age, race/ethnicity, and gender

Criteria for Evaluation

Comparison to Goal or Reference Standard:

- 1) Goal: Not typically used
OR
- 2) Reference Standard: No reference standard exists.

Sample nutrition assessment documentation

<i>Initial nutrition assessment with patient/client</i>	Patient/client is house bound, lives in a rural area, and receives one meal/day from Meals on Wheels.
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References

The following are some suggested references for indicators, measurement techniques, and reference standards for the outcome; other references may be appropriate.

1. Charney P, Malone A. *ADA Pocket Guide to Nutrition Assessment*. 2nd ed. Chicago, IL: American Dietetic Association; 2009.
2. Loenberg BL. *ADA Pocket Guide to Pediatric Nutrition Assessment*. Chicago, IL: American Dietetic Association; 2008.
3. Murray KO, Holli BB, Calabrese RJ. *Communication & Education Skills for Dietetics Professionals*. 4th Ed. Philadelphia, PA: Lippincott Williams & Wilkins; 2003.

Estimated Energy Needs (CS-1.1)

Definition

Estimated quantity of total energy needed for nutritional adequacy.

Purpose

Identify appropriate reference standard of energy intake needs for individual patients/clients. Utilized as a basis of comparison to assess adequacy or excessiveness of patient/client's estimated total energy intake as compared to estimated needs and for development of the nutrition prescription.

Indicators

Total estimated energy needs assumed to be consistent with the Dietary Reference Intakes unless otherwise specified: (specify, e.g., calories/day, calories/kg/day)

	EAR	RDA	AI	UL	Other
Energy*					Formula

EAR — Estimated Average Requirement

RDA — Recommended Dietary Allowance

AI — Adequate Intake

UL — Tolerable Upper Intake Level

*See DRI interpretation table on page 84.

Method for estimating energy needs:

- Estimated (specify, e.g., patient/client goal or nutrition prescription, equation/method and adjustments for activity, stress, pregnancy, breastfeeding, and/or fever)
- Measured (specify assessment method)

Note: Comparison to the Dietary Reference Intakes is assumed, but other reference intake standards may be used.

References

The following are some suggested references; other references may be appropriate.

1. Charney P, Malone A. *ADA Pocket Guide to Nutrition Assessment*. 2nd ed. Chicago, IL: American Dietetic Association; 2009.
2. Leonberg BL. *ADA Pocket Guide to Pediatric Nutrition Assessment*. Chicago, IL: American Dietetic Association; 2008.
3. Academy of Nutrition and Dietetics Evidence Analysis Library. Available at: <http://www.andevidencelibrary.com>.
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5. American Society for Parenteral and Enteral Nutrition Board of Directors and The Clinical Guidelines Task Force. Guidelines for the use of parenteral and enteral nutrition in adult and pediatric patients. *J Parenter Enteral Nutr*. 2002;26(Suppl):S1-S138.
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9. Academy of Nutrition and Dietetics. Pediatric Nutrition Care Manual. Available at: <http://peds.nutritioncaremanual.org>.
10. Otten JJ, Hellwig JP, et al., eds. *Dietary Reference Intakes: The Essential Guide to Nutrient Requirements*. Washington, D.C.: National Academy of Sciences; 2006.
11. USDA Nutrient Data Laboratory, National Nutrient Database for Standard Reference. Available at: <http://ndb.nal.usda.gov>. Accessed January 31, 2012.

Estimated Fat Needs (CS-2.1)

Definition

Estimated quantity of total and/or type fat intake needed for nutritional adequacy.

Purpose

Identify appropriate reference standard of fat intake needs for individual patients/clients. Utilized as a basis of comparison to assess adequacy or excessiveness of patient/client's estimated total fat intake as compared to needs and for development of the nutrition prescription.

Indicators

Total fat needs, assumed to be consistent with the Dietary Reference Intakes unless otherwise specified:
(specify, e.g., grams/day, grams/kg/day, percent of calories)

Types of fat needed (specify, e.g., grams/day, grams/kg/day, percent of calories)

Macronutrients*	EAR	RDA	AI	UL	Other
Fat			X Infants only		Acceptable Macronutrient Distribution Range (AMDR) (children and adults)
n-6 polyunsaturated fatty acids (linoleic acid)			X (All ages)		Acceptable Macronutrient Distribution Range (AMDR) (children and adults)
n-3 polyunsaturated fatty acids (α -linolenic acid)			X (All ages)		Acceptable Macronutrient Distribution Range (AMDR) (children and adults)
Dietary cholesterol Trans fatty acids Saturated fatty acids					As low as possible while consuming a nutritionally adequate diet

EAR — Estimated Average Requirement
RDA — Recommended Dietary Allowance
AI — Adequate Intake
UL — Tolerable Upper Intake Level

*See DRI interpretation table on page 84.

Method for estimating fat needs (specify, e.g., patient/client goal or nutrition prescription, disease/condition-based reference standard, Dietary Reference Intake)

Note: Comparison to the Dietary Reference Intakes is assumed, but other reference intake standards may be used.

References

The following are some suggested references; other references may be appropriate.

1. Charney P, Malone A. *ADA Pocket Guide to Nutrition Assessment*. 2nd ed. Chicago, IL: American Dietetic Association; 2009.
2. Leonberg BL. *ADA Pocket Guide to Pediatric Nutrition Assessment*. Chicago, IL: American Dietetic Association; 2008.
3. Academy of Nutrition and Dietetics. Evidence Analysis Library. Available at: <http://www.andevidencelibrary.com>.
4. Academy of Nutrition and Dietetics. Nutrition Care Manual. Available at: www.nutritioncaremanual.org.
5. American Heart Association Nutrition Committee: Lichtenstein A, Appel L, Brands M, Carnethon M, Daniels S, Franch HA, Franklin B, Kris-Etherton P, Harris WS, Howard B, Karanja N, Lefevre M, Rudel L, Sacks F, Van Horn L, Winston M, Wylie-Rosett J. Diet and lifestyle recommendations revision 2006: a scientific statement from the American Heart Association Nutrition Committee. *Circulation*. 2006;114(1):82-96.

Estimated Fat Needs (CS-2.1)

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6. American Society for Parenteral and Enteral Nutrition Board of Directors and The Clinical Guidelines Task Force. Guidelines for the use of parenteral and enteral nutrition in adult and pediatric patients. *J Parenter Enteral Nutr.* 2002;26(Suppl):S1-S138.
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9. Institute of Medicine, Food and Nutrition Board. *Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein and Amino Acids.* Washington, DC: National Academies Press; 2002.
10. Academy of Nutrition and Dietetics. Pediatric Nutrition Care Manual. Available at: <http://peds.nutritioncaremanual.org>.
11. US Department of Agriculture and Health and Human Services. Dietary Guidelines for Americans, 2010. Available at: <http://www.cnpp.usda.gov/dietaryguidelines.htm>. Accessed: January 24, 2012.
12. National Heart, Lung and Blood Institute. *Third Report of the Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults (Adult Treatment Panel III).* Bethesda, MD: National Institutes of Health; 2001.
13. USDA Nutrient Data Laboratory, National Nutrient Database for Standard Reference. Available at: <http://ndb.nal.usda.gov>. Accessed January 31, 2012.

Estimated Protein Needs (CS-2.2)

Definition

Estimated quantity and/or type of protein needed for nutritional adequacy.

Purpose

Identify appropriate reference standard of protein intake needs for individual patients/clients. Utilized as a basis of comparison to assess adequacy or excessiveness of patient/client's estimated total protein intake as compared to estimated needs and for development of the nutrition prescription.

Indicators

Total estimated protein needs, assumed to be consistent with the Dietary Reference Intakes unless otherwise specified: (specify, e.g., grams/day, grams/kg/day, percent of calories)

Macronutrient*	EAR	RDA	AI	UL	Other
Protein	X All except infants 0 to 6 months	X All except infants 0 to 6 months	X Infants 0 to 6 months		Acceptable Macronutrient Distribution Range (children and adults)

EAR — Estimated Average Requirement

RDA — Recommended Dietary Allowance

AI — Adequate Intake

UL — Tolerable Upper Intake Level

*See DRI interpretation table on page 84.

Types of protein/amino acids needed (specify, e.g., grams/day, grams/kg/day, percent of total protein, percent of calories)

Method for estimating protein needs (specify, e.g., patient/client goal or nutrition prescription, disease/condition-based reference standard, Dietary Reference Intake)

Note: Comparison to the Dietary Reference Intakes is assumed, but other reference intake standards may be used.

References

The following are some suggested references; other references may be appropriate.

1. Charney P, Malone A. *ADA Pocket Guide to Nutrition Assessment*. 2nd ed. Chicago, IL: American Dietetic Association; 2009.
2. Leonberg BL. *ADA Pocket Guide to Pediatric Nutrition Assessment*. Chicago, IL: American Dietetic Association; 2008.
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6. Academy of Nutrition and Dietetics. Pediatric Nutrition Care Manual. Available at: <http://peds.nutritioncaremanual.org>.
7. USDA Nutrient Data Laboratory, National Nutrient Database for Standard Reference. Available at: <http://ndb.nal.usda.gov>. Accessed January 31, 2012.

Estimated Carbohydrate Needs (CS-2.3)

Definition

Estimated quantity of total and/or type of carbohydrates needed for nutritional adequacy.

Purpose

Identify appropriate reference standard of carbohydrate intake needs for individual patients/clients. Utilized for assessing the adequacy or excessiveness of patient/client's estimated total carbohydrate intake as compared to estimated needs and for development of the nutrition prescription.

Indicators

Total estimated carbohydrate needs assumed to be consistent with the Dietary Reference Intakes unless otherwise specified: (specify, e.g., grams/day, grams or mg/kg/min, percent of calories)

Types of carbohydrate needed (specify, e.g., grams/day, grams or mg/kg/min, percent of carbohydrate, percent of calories)

Macronutrients*	EAR	RDA	AI	UL	Other
Carbohydrates		X	X infants		Acceptable Macronutrient Distribution Range (children and adults)
					Added sugars – limit to no more than 25% of total energy (all ages)

EAR — Estimated Average Requirement

RDA — Recommended Dietary Allowance

AI — Adequate Intake

UL — Tolerable Upper Intake Level

*See DRI interpretation table on page 84.

Method for estimating carbohydrate needs (specify, e.g., patient/client goal or nutrition prescription, disease/condition-based reference standard, Dietary Reference Intake)

Note: Comparison to the Dietary Reference Intakes is assumed, but other reference intake standards may be used.

References

The following are some suggested references; other references may be appropriate.

1. American Diabetes Association. Standards of medical care in diabetes–2012. *Diabetes Care*. 2012;35:S11-S63.
2. Charney P, Malone A. *ADA Pocket Guide to Nutrition Assessment*. 2nd ed. Chicago, IL: American Dietetic Association; 2009.
3. Leonberg BL. *ADA Pocket Guide to Pediatric Nutrition Assessment*. Chicago, IL: American Dietetic Association; 2008.
4. Academy of Nutrition and Dietetics. Nutrition Care Manual. Available at: www.nutritioncaremanual.org.
5. Academy of Nutrition and Dietetics Evidence Analysis Library. Available at: <http://www.andevidencelibrary.com>.
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8. Academy of Nutrition and Dietetics. Pediatric Nutrition Care Manual. Available at: <http://peds.nutritioncaremanual.org>.
9. US Departments of Agriculture and Health and Human Services. Dietary Guidelines for Americans, 2010. Available at: <http://www.cnpp.usda.gov/dietaryguidelines.htm>. Accessed: January 24, 2012.
10. USDA Nutrient Data Laboratory, National Nutrient Database for Standard Reference. Available at: <http://ndb.nal.usda.gov>. Accessed January 31, 2012.

Estimated Fiber Needs (CS-2.4)

Definition

Estimated quantity of total and/or type of fiber needed for nutritional adequacy.

Purpose

Identify appropriate reference standard of fiber intake needs for individual patients/clients. Utilized as a basis of comparison to assess adequacy or excessiveness of patient/client's estimated total fiber intake as compared to estimated needs and for development of the nutrition prescription.

Indicators

Total estimated fiber needs, assumed to be consistent with the Dietary Reference Intakes unless otherwise specified: (specify, e.g., grams/day, grams/1000 kcal/day)

Macronutrients*	EAR	RDA	AI	UL	Other
Fiber			X Children and adults		

EAR — Estimated Average Requirement

RDA — Recommended Dietary Allowance

AI — Adequate Intake

UL — Tolerable Upper Intake Level

*See DRI interpretation table on page 84.

Types of fiber needed (specify, e.g., grams/day, percent of total fiber)

Method for estimating fiber needs (specify, e.g., patient/client goal or nutrition prescription, disease/condition-based reference standard, Dietary Reference Intake)

Note: Comparison to the Dietary Reference Intakes is assumed, but other reference intake standards may be used.

References

The following are some suggested references; other references may be appropriate.

1. Charney P, Malone A. *ADA Pocket Guide to Nutrition Assessment*. 2nd ed. Chicago, IL: American Dietetic Association; 2009.
2. Leonberg BL. *ADA Pocket Guide to Pediatric Nutrition Assessment*. Chicago, IL: American Dietetic Association; 2008.
3. Academy of Nutrition and Dietetics. *Nutrition Care Manual*. Available at: www.nutritioncaremanual.org.
4. Institute of Medicine, Food and Nutrition Board. *Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein and Amino Acids*. Washington, DC: National Academies Press; 2002.
5. Academy of Nutrition and Dietetics. *Pediatric Nutrition Care Manual*. Available at: <http://peds.nutritioncaremanual.org>.
6. National Heart, Lung and Blood Institute. *Third Report of the Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults (Adult Treatment Panel III)*. Bethesda, MD: National Institutes of Health; 2001.
7. USDA Nutrient Data Laboratory, National Nutrient Database for Standard Reference. Available at: <http://ndb.nal.usda.gov>. Accessed January 31, 2012.

Estimated Fluid Needs (CS-3.1)

Definition

Estimated quantity of fluid needed for nutritional adequacy.

Purpose

Identify appropriate reference standard of fluid intake needs for individual patients/clients. Utilized as a basis of comparison to assess adequacy or excessiveness of patient/client's estimated total fluid intake as compared to estimated need and for development of the nutrition prescription.

Indicators

Total estimated fluid needs, assumed to be consistent with the Dietary Reference Intakes unless otherwise specified: (specify, e.g., mL or L/day, mL/kg/day, mL/calories expended, mL/m²/day, mL output)

Macronutrient*	EAR	RDA	AI	UL	Other
Total Water			X		

EAR — Estimated Average Requirement

RDA — Recommended Dietary Allowance

AI — Adequate Intake

UL — Tolerable Upper Intake Level

*See DRI interpretation table on page 84.

Method for estimating fluid needs (specify, e.g., patient/client goal or nutrition prescription, disease/condition-based reference standard, Dietary Reference Intake and adjustments, if needed, e.g., patient/client goal or nutrition prescription, increased due to fever, sweating, hyperventilation, hyperthyroid, extraordinary gastric/renal losses, or decreased due to, for example, renal or liver disease)

Note: Comparison to the Dietary Reference Intakes is assumed, but other reference intake standards may be used.

References

The following are some suggested references; other references may be appropriate.

1. Charney P, Malone A. *ADA Pocket Guide to Nutrition Assessment*. 2nd ed. Chicago, IL: American Dietetic Association; 2009.
2. Leonberg BL. *ADA Pocket Guide to Pediatric Nutrition Assessment*. Chicago, IL: American Dietetic Association; 2008.
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4. Academy of Nutrition and Dietetics Evidence Analysis Library. What is the best equation for estimating fluid requirements in adults 19 years and older? Available at: http://www.andevidencelibrary.com/conclusion.cfm?conclusion_statement_id=250894&highlight=fluid&home=1&library=EAL. Accessed April 13, 2010.
5. American Society for Parenteral and Enteral Nutrition Board of Directors and The Clinical Guidelines Task Force. Guidelines for the use of parenteral and enteral nutrition in adult and pediatric patients. *J Parenter Enteral Nutr*. 2002;26(Suppl):S1-S138.
6. Institute of Medicine, Food and Nutrition Board. *Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein and Amino Acids*. Washington, DC: National Academies Press; 2002.
7. Institute of Medicine, National Academy of Sciences. *Dietary Reference Intakes for Water, Potassium, Sodium, Chloride, and Sulfate*. Washington DC: National Academies Press; 2004.
8. Academy of Nutrition and Dietetics. *Pediatric Nutrition Care Manual*. Available at: <http://peds.nutritioncaremanual.org>.
9. USDA Nutrient Data Laboratory, National Nutrient Database for Standard Reference, Release 20, Nutrient Lists. Available at: <http://ndb.nal.usda.gov>. Accessed January 31, 2012.

Estimated Vitamin Needs (CS-4.1)

Definition

Estimated quantity of one or more vitamins needed for nutritional adequacy and avoidance of toxicity.

Purpose

Identify appropriate reference standard of vitamin intake needs for individual patients/clients. Utilized as a basis of comparison to assess adequacy or excessiveness of patient/client's estimated total vitamin intake as compared to estimated needs and for development of the nutrition prescription.

Indicators

Total estimated vitamin needs, assumed to be consistent with the Dietary Reference Intakes unless otherwise specified:

Micronutrients— Vitamins*	EAR	RDA	AI	UL
Vitamin A (µg/day)	X	X	X Infants	X
Vitamin C (mg/day)	X	X	X Infants	X Children and adults
Vitamin D (µg/day)			X	X
Vitamin E (mg/day)	X	X	X Infants	X Children and adults
Vitamin K (µg/day)			X	
Thiamin (mg/day)	X	X	X Infants	
Riboflavin (mg/day)	X	X	X Infants	
Niacin (mg/day)	X	X	X Infants	X Children and adults
Vitamin B6 (mg/day)	X	X	X Infants	X Children and adults
Folate (µg/day)	X	X	X Infants	X Children and adults
Vitamin B12 (µg/day)	X	X	X Infants	
Pantothenic acid (mg/ day)			X	
Biotin (µg/day)			X	
Choline (mg/d)			X	X Children and adults

EAR — Estimated Average Requirement

RDA — Recommended Dietary Allowance

AI — Adequate Intake

UL — Tolerable Upper Intake Level

*See DRI interpretation table on page 84.

Method for estimating vitamin needs (specify, e.g., patient/client goal or nutrition prescription, disease/condition-based reference standard, any adjustments for special conditions or situations, Dietary Reference Intake)

Note: Comparison to the Dietary Reference Intakes is assumed, but other reference intake standards may be used.

Estimated Vitamin Needs (CS-4.1)

References

The following are some suggested references; other references may be appropriate.

1. Charney P, Malone A. *ADA Pocket Guide to Nutrition Assessment*. 2nd ed. Chicago, IL: American Dietetic Association; 2009.
2. Leonberg BL. *ADA Pocket Guide to Pediatric Nutrition Assessment*. Chicago, IL: American Dietetic Association; 2008.
3. Academy of Nutrition and Dietetics Evidence Analysis Library. Available at: <http://www.andevidencelibrary.com>.
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6. Barr SI, Murphy SP, Poos MI. Interpreting and using the Dietary Reference Intakes in dietary assessment of individuals and groups. *J Am Diet Assoc*. 2002;102:780-788.
7. Gartner LM, Greer FR, American Academy of Pediatrics Committee on Nutrition. Prevention of rickets and vitamin D deficiency: new guidelines for vitamin D intake. *Pediatrics*. 2003;111:908-10.
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9. Institute of Medicine, Food and Nutrition Board. *Dietary Reference Intakes: Applications in Dietary Assessment*. Washington, DC: National Academies Press; 2000.
10. Institute of Medicine, Food and Nutrition Board. *Dietary Reference Intakes for Calcium, Phosphorus, Magnesium, Vitamin D, and Fluoride*. Washington, DC: National Academies Press; 1997.
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12. Institute of Medicine, Food and Nutrition Board. *Dietary Reference Intakes: Thiamin, Riboflavin, Niacin, Vitamin B6, Folate, Vitamin B12, Pantothenic Acid, Biotin, and Choline*. Washington, DC: National Academies Press; 1998.
13. Institute of Medicine, Food and Nutrition Board. *Dietary Reference Intakes for Vitamin A, Vitamin K, Arsenic, Boron, Chromium, Copper, Iodine, Iron, Manganese, Molybdenum, Nickel, Silicon, Vanadium, and Zinc*. Washington, DC: National Academies Press; 2001.
14. Institute of Medicine, Food and Nutrition Board. *Dietary Reference Intakes: Vitamin C, Vitamin E, Selenium, and Carotenoids*. Washington, DC: National Academies Press; 2000.
15. Murphy SP, Poos MI. Dietary Reference Intakes: Summary of applications in dietary assessment. *Public Health Nutr*. 2002;5:843-849.
16. Academy of Nutrition and Dietetics. *Pediatric Nutrition Care Manual*. Available at: <http://peds.nutritioncaremanual.org>.
17. USDA Nutrient Data Laboratory, National Nutrient Database for Standard Reference. Available at: <http://ndb.nal.usda.gov>. Accessed January 31, 2012.

Estimated Mineral/Element Needs (CS-4.2)

Definition

Estimated quantity of one or more minerals needed for nutritional adequacy and avoidance of toxicity.

Purpose

Identify appropriate reference standard of mineral intake needs for individual patients/clients. Utilized as a basis of comparison to assess adequacy or excessiveness of patient/client's estimated mineral intake as compared to estimated needs and for development of the nutrition prescription.

Indicators

Total estimated mineral needs, assumed to be consistent with the Dietary Reference Intakes unless otherwise specified:

Micronutrients— Minerals/elements*	EAR	RDA	AI	UL	Other
Calcium (mg/day)			X	X Children and adults	
Chloride (g/day)			X	X Children and adults	
Chromium (µg/day)			X		
Cobalt (µg/day)					Not addressed in the DRIs
Copper (µg/day)	X	X	X Infants	X Children and adults	
Fluoride (mg/day)			X	X	
Iodine (µg/day)	X	X	X Infants	X Children and adults	
Iron (mg/day)	X	X	X Infants 0-6 mos.	X	
Magnesium (mg/day)	X	X	X Infants	X Children and adults	
Manganese (mg/d)			X	X Children and adults	
Molybdenum (mg/day)	X Children and adults	X Children and adults	X Infants	X Children and adults	
Phosphorus (mg/day)	X	X	X Infants	X Children and adults	
Potassium (g/day)			X		

Estimated Mineral/Element Needs (CS-4.2)

Indicators, cont'd

Micronutrients— Minerals/elements,* cont'd	EAR	RDA	AI	UL	Other
Selenium (µg/day)	X	X	X Infants	X	
Sodium (g/day)			X	X Children and adults	
Sulfate (g/day)	X	X	X Infants	X	
Zinc (mg/day)	X	X	X Infants 0 to 6 mos.	X	

EAR — Estimated Average Requirement
 RDA — Recommended Dietary Allowance
 AI — Adequate Intake
 UL — Tolerable Upper Intake Level

*See DRI interpretation table on page 84.

Method for estimating mineral needs (specify, e.g., patient/client goal or nutrition prescription, disease/condition-based reference standard, any adjustments for special conditions or situations, Dietary Reference Intake)

Note: Comparison to the Dietary Reference Intakes is assumed, but other reference intake standards may be used.

References

The following are some suggested references; other references may be appropriate.

1. Charney P, Malone A. *ADA Pocket Guide to Nutrition Assessment*. 2nd ed. Chicago, IL: American Dietetic Association; 2009.
2. Leonberg BL. *ADA Pocket Guide to Pediatric Nutrition Assessment*. Chicago, IL: American Dietetic Association; 2008.
3. Academy of Nutrition and Dietetics. Adult Weight Management Evidence-Based Guideline, 2006. Available at: <http://www.andevidencelibrary.com/topic.cfm?cat=2798>. Accessed April 27, 2012.
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9. Institute of Medicine, Food and Nutrition Board. *Dietary Reference Intakes for Calcium, Phosphorus, Magnesium, Vitamin D, and Fluoride*. Washington, DC: National Academies Press; 1997.
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14. Academy of Nutrition and Dietetics. Pediatric Nutrition Care Manual. Available at: <http://peds.nutritioncaremanual.org>.
15. Nutrient Data Laboratory, USDA National Nutrient Database for Standard Reference. Available at: <http://ndb.nal.usda.gov>. Accessed January 31, 2012.

Updated: 2013 Edition

Recommended Body Weight/Body Mass Index/Growth (5.1)

Definition

Estimated reference ideal body weight (known as desirable body weight), body mass index, and/or growth parameter used to evaluate nutritional status

Purpose

Identify appropriate reference standard for body weight for individual patients/clients. Utilized as a basis of comparison to assess patient/client's body weight as compared to recommendations and for development of the nutrition prescription

Indicators (Measures)

Ideal/reference body weight[†]

- Method for determining ideal body weight (IBW)/desirable body weight (specify, e.g., Hamwi equation, growth chart)
- IBW adjustment (e.g., spinal cord injury, amputees)
- % IBW
- Adjusted body weight/metabolically active weight for overweight/obesity (specify, e.g., equation)

Recommended Body Mass Index (BMI)* (kg/m²)

- Normal range BMI (specify if using, e.g., adjustment for South East Asian body types)

Desired growth pattern (based on individual health, growth pattern, and genetic potential)

- 0 to 36 months
 - Weight-for-age (percentile rank)
 - Length-for-age (percentile rank)
 - Weight-for-length (percentile rank)
 - Head circumference-for-age (percentile rank)
- 2 to 5 years
 - Weight-for-stature (percentile rank)
- 2 to 20 years
 - Weight-for-age (percentile rank)
 - Stature-for-age (percentile rank)
 - BMI-for-age (percentile rank)
- Specialized and disease-specific growth charts (specify, e.g., type chart and percentile rank)

Note: Estimated stature and corrected age for prematurity are found on the Body Composition/Growth/Weight History reference sheet.

[†]Please refer to the Academy Evidence Analysis Library, Energy Expenditure: Measurement vs. Estimation Evidence Analysis Project (2006), available at: <http://www.andevidencelibrary.com/topic.cfm?cat=1151>, for recommendations related to using actual weight versus IBW or ABW for estimating energy expenditure.

*BMI is a measure of the weight of an individual scaled according to height. It is a common method for assessing body fat in the clinical setting and is compared to a population reference standard (e.g., US National Institutes of Health guidelines or World Health Organization guidelines). BMI was designed for use within a physically inactive population.

Recommended Body Weight/Body Mass Index/Growth (5.1)

References

The following are some suggested references; other references may be appropriate.

1. NHLBI Guidelines on Overweight and Obesity, Electronic Textbook. Available at: http://www.nhlbi.nih.gov/guidelines/obesity/e_txtbk/index.htm. Accessed January 26, 2012.
2. World Health Organization, Child Growth Standards. Available at: <http://www.cdc.gov/growthcharts>. Accessed January 26, 2012.
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Updated: 2011 Edition

Nutrition Diagnostic Terminology

Each term has an Academy unique identifier, a five-digit number (e.g., 99999) following the alpha-numeric IDNT code. Neither should be visible in nutrition documentation. The Academy unique identifier is for data tracking purposes in electronic records.

INTAKE

Defined as "actual problems related to intake of energy, nutrients, fluids, bioactive substances through oral diet or nutrition support"

Energy Balance (1)

Defined as "actual or estimated changes in energy (calorie/kcal/kJ) balance"

☐ Increased energy expenditure	NI-1.1	10633
☐ Inadequate energy intake	NI-1.2	10634
☐ Excessive energy intake	NI-1.3	10635
☐ Predicted suboptimal energy intake	NI-1.4	10636
☐ Predicted excessive energy intake	NI-1.5	10637

Oral or Nutrition Support Intake (2)

Defined as "actual or estimated food and beverage intake from oral diet or nutrition support compared with patient goal"

☐ Inadequate oral intake	NI-2.1	10639
☐ Excessive oral intake	NI-2.2	10640
☐ Inadequate enteral nutrition infusion	NI-2.3	10641
☐ Excessive enteral nutrition infusion	NI-2.4	10642
☐ Less than optimal enteral nutrition composition or modality	NI-2.5	10852
☐ Inadequate parenteral nutrition infusion	NI-2.6	10644
☐ Excessive parenteral nutrition infusion	NI-2.7	10645
☐ Less than optimal parenteral nutrition composition or modality	NI-2.8	10853
☐ Limited food acceptance	NI-2.9	10647

Fluid Intake (3)

Defined as "actual or estimated fluid intake compared with patient goal"

☐ Inadequate fluid intake	NI-3.1	10649
☐ Excessive fluid intake	NI-3.2	10650

Bioactive Substances (4)

Defined as "actual or observed intake of bioactive substances, including single or multiple functional food components, ingredients, dietary supplements, alcohol"

☐ Inadequate bioactive substance intake (specify) _____	NI-4.1	10652
☐ Excessive bioactive substance intake (specify) _____	NI-4.2	10653
☐ Excessive alcohol intake	NI-4.3	10654

Nutrient (5)

Defined as "actual or estimated intake of specific nutrient groups or single nutrients as compared with desired levels"

☐ Increased nutrient needs (specify) _____	NI-5.1	10656
☐ Malnutrition	NI-5.2	10657
☐ Inadequate protein-energy intake	NI-5.3	10658
☐ Decreased nutrient needs (specify) _____	NI-5.4	10659
☐ Imbalance of nutrients	NI-5.5	10660

Fat and Cholesterol (5.6)

☐ Inadequate fat intake	NI-5.6.1	10662
☐ Excessive fat intake	NI-5.6.2	10663
☐ Less than optimal intake of types of fats (specify) _____	NI-5.6.3	10854

Protein (5.7)

☐ Inadequate protein intake	NI-5.7.1	10666
☐ Excessive protein intake	NI-5.7.2	10667
☐ Less than optimal intake of types of proteins or amino acids (specify) _____	NI-5.7.3	10855

Carbohydrate and Fiber (5.8)

☐ Inadequate carbohydrate intake	NI-5.8.1	10670
☐ Excessive carbohydrate intake	NI-5.8.2	10671
☐ Less than optimal intake of types of carbohydrate (specify) _____	NI-5.8.3	10856
☐ Inconsistent carbohydrate intake	NI-5.8.4	10673
☐ Inadequate fiber intake	NI-5.8.5	10675
☐ Excessive fiber intake	NI-5.8.6	10676

Vitamin (5.9)

☐ Inadequate vitamin intake (specify)

☐ A (1)	10679	☐ Niacin (8)	10686
☐ C (2)	10680	☐ Folate (9)	10687
☐ D (3)	10681	☐ B6 (10)	10688
☐ E (4)	10682	☐ B12 (11)	10689
☐ K (5)	10683	☐ Pantothenic acid (12)	10690
☐ Thiamin (6)	10684	☐ Biotin (13)	10691
☐ Riboflavin (7)	10685		

☐ Excessive vitamin intake (specify)

☐ A (1)	10694	☐ Niacin (8)	10701
☐ C (2)	10695	☐ Folate (9)	10702
☐ D (3)	10696	☐ B6 (10)	10703
☐ E (4)	10697	☐ B12 (11)	10704
☐ K (5)	10698	☐ Pantothenic acid (12)	10705
☐ Thiamin (6)	10699	☐ Biotin (13)	10706
☐ Riboflavin (7)	10700		

Mineral (5.10)

☐ Inadequate mineral intake (specify)

☐ Calcium (1)	10710	☐ Fluoride (10)	10719
☐ Chloride (2)	10711	☐ Copper (11)	10720
☐ Iron (3)	10712	☐ Iodine (12)	10721
☐ Magnesium (4)	10713	☐ Selenium (13)	10722
☐ Potassium (5)	10714	☐ Manganese (14)	10723
☐ Phosphorus (6)	10715	☐ Chromium (15)	10724
☐ Sodium (7)	10716	☐ Molybdenum (16)	10725
☐ Zinc (8)	10717	☐ Boron (17)	10726
☐ Sulfate (9)	10718	☐ Cobalt (18)	10727

☐ Excessive mineral intake (specify)

☐ Calcium (1)	10730	☐ Fluoride (10)	10739
☐ Chloride (2)	10731	☐ Copper (11)	10740
☐ Iron (3)	10732	☐ Iodine (12)	10741
☐ Magnesium (4)	10733	☐ Selenium (13)	10742
☐ Potassium (5)	10734	☐ Manganese (14)	10743
☐ Phosphorus (6)	10735	☐ Chromium (15)	10744
☐ Sodium (7)	10736	☐ Molybdenum (16)	10745
☐ Zinc (8)	10737	☐ Boron (17)	10746
☐ Sulfate (9)	10738	☐ Cobalt (18)	10747

Multi-nutrient (5.11)

☐ Predicted suboptimal nutrient intake (specify) _____	NI-5.11.1	10750
☐ Predicted excessive nutrient intake (specify) _____	NI-5.11.2	10751

CLINICAL

Defined as "nutritional findings/problems identified that relate to medical or physical conditions"

Functional (1)

Defined as "change in physical or mechanical functioning that interferes with or prevents desired nutritional consequences"

☐ Swallowing difficulty	NC-1.1	10754
☐ Biting/Chewing (masticatory) difficulty	NC-1.2	10755
☐ Breastfeeding difficulty	NC-1.3	10756
☐ Altered GI function	NC-1.4	10757

Biochemical (2)

Defined as "change in capacity to metabolize nutrients as a result of medications, surgery, or as indicated by altered lab values"

☐ Impaired nutrient utilization	NC-2.1	10759
☐ Altered nutrition-related laboratory values (specify) _____	NC-2.2	10760
☐ Food-medication interaction (specify) _____	NC-2.3	10761
☐ Predicted food-medication interaction (specify) _____	NC-2.4	10762

Nutrition Diagnostic Terminology

Weight (3)

Defined as "chronic weight or changed weight status when compared with usual or desired body weight"

☐ Underweight	NC-3.1	10764
☐ Unintended weight loss	NC-3.2	10765
☐ Overweight/obesity	NC-3.3	
☐ Overweight, adult or pediatric (1)		10767
☐ Obese, pediatric (2)		10768
☐ Obese, Class I (3)		10769
☐ Obese, Class II (4)		10818
☐ Obese, Class III (5)		10819
☐ Unintended weight gain	NC-3.4	10770
☐ Suboptimal growth rate	NC-3.5	10802
☐ Excessive growth rate	NC-3.6	10803

BEHAVIORAL-ENVIRONMENTAL

NB

Defined as "nutritional findings/problems identified that relate to knowledge, attitudes/beliefs, physical environment, access to food, or food safety"

Knowledge and Beliefs (1)

Defined as "actual knowledge and beliefs as related, observed, or documented"

☐ Food- and nutrition-related knowledge deficit	NB-1.1	10773
☐ Unsupported beliefs/attitudes about food- or nutrition-related topics (use with caution)	NB-1.2	10857
☐ Not ready for diet/lifestyle change	NB-1.3	10775
☐ Self-monitoring deficit	NB-1.4	10776
☐ Disordered eating pattern	NB-1.5	10777
☐ Limited adherence to nutrition-related recommendations	NB-1.6	10778
☐ Undesirable food choices	NB-1.7	10779

Physical Activity and Function (2)

Defined as "actual physical activity, self-care, and quality-of-life problems as reported, observed, or documented"

☐ Physical inactivity	NB-2.1	10782
☐ Excessive physical activity	NB-2.2	10783
☐ Inability to manage self-care	NB-2.3	10780
☐ Impaired ability to prepare foods/meals	NB-2.4	10785
☐ Poor nutrition quality of life	NB-2.5	10786
☐ Self-feeding difficulty	NB-2.6	10787

Food Safety and Access (3)

Defined as "actual problems with food safety or access to food, water, or nutrition-related supplies"

☐ Intake of unsafe food	NB-3.1	10789
☐ Limited access to food or water	NB-3.2	10790
☐ Limited access to nutrition-related supplies	NB-3.3	10791

OTHER

NO

Defined as "nutrition findings that are not classified as intake, clinical or behavioral-environmental problems."

Other (1)

☐ No nutrition diagnosis at this time	NO-1.1	10795
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Nutrition Diagnostic Terms and Definitions

Term	Term Number	Definition	Pages
DOMAIN: INTAKE	NI	Actual problems related to intake of energy, nutrients, fluids, and bioactive substances through oral diet or nutrition support (enteral or parenteral nutrition).	
<i>Class: Energy Balance (1)</i>		Actual or estimated changes in energy (calorie/kcal/kJ) balance.	
Increased energy expenditure	NI-1.1	Resting metabolic rate (RMR) more than predicted requirements due to body composition; medications; or endocrine, neurologic, or genetic changes. <i>Note: RMR is the sum of metabolic processes of active cell mass related to the maintenance of normal body functions and regulatory balance during rest.</i>	235
Inadequate energy intake	NI-1.2	Energy intake that is less than energy expenditure, established reference standards, or recommendations based on physiological needs. <i>Note: May not be an appropriate nutrition diagnosis when the goal is weight loss, during end-of-life care, upon initiation of EN/PN, or acute stressed state (e.g., surgery, organ failure). Whenever possible, nutrient intake data should be considered in combination with clinical, biochemical, anthropometric information, medical diagnosis, clinical status, and/or other factors as well as diet to provide a valid assessment of nutritional status based on a totality of the evidence. (Institute of Medicine. Dietary Reference Intakes: Applications in Dietary Assessment. Washington, DC: National Academies Press; 2000.)</i>	236-237
Excessive energy intake	NI-1.3	Energy intake that exceeds energy expenditure, established reference standards, or recommendations based on physiological needs. <i>Note: May not be an appropriate nutrition diagnosis when weight gain is desired.</i>	238-239
Predicted suboptimal energy intake	NI-1.4	Future energy intake that is anticipated, based on observation, experience, or scientific reason, to be less than estimated energy expenditure, established reference standards, or recommendations based on physiological needs. <i>Note: May not be an appropriate nutrition diagnosis during weight loss. Use Inadequate Energy Intake (NI-1.2) when current energy intake is less than energy expenditure.</i>	240-241
Predicted excessive energy intake	NI-1.5	Future energy intake that is anticipated, based on observation, experience, or scientific reason, to exceed estimated energy expenditure, established reference standards, or recommendations based on physiological needs. <i>Note: May not be appropriate nutrition diagnosis when weight gain is desired. Use Excessive Energy Intake (NI-1.3) when current energy intake is more than energy expenditure.</i>	242-243

Term	Term Number	Definition	Pages
<i>Class: Oral or Nutrition Support Intake (2)</i>		Actual or estimated food and beverage intake from oral diet or nutrition support compared with patient goal.	
Inadequate oral intake	NI-2.1	Oral food/beverage intake that is less than established reference standards or recommendations based on physiological needs. This nutrition diagnosis does not include intake via oroenteric tube. <i>Note: May not be an appropriate nutrition diagnosis when the goal is weight loss, during end-of-life care, upon initiation of feeding, or during combined oral/EN/PN therapy.</i> <i>Whenever possible, nutrient intake data should be considered in combination with clinical, biochemical, anthropometric information, medical diagnosis, clinical status, and/or other factors as well as diet to provide a valid assessment of nutritional status based on a totality of the evidence. (Institute of Medicine. Dietary Reference Intakes: Applications in Dietary Assessment. Washington, DC: National Academies Press; 2000.)</i>	244-245
Excessive oral intake	NI-2.2	Oral food/beverage intake that exceeds estimated energy needs, established reference standards, or recommendations based on physiological needs. This nutrition diagnosis does not include intake via oroenteric tube. <i>Note: May not be an appropriate nutrition diagnosis when weight gain is desired.</i>	246-247
Inadequate enteral nutrition infusion	NI-2.3	Enteral infusion that provides fewer calories/kcal/kJ or nutrients compared to established reference standards or recommendations based on physiological needs. <i>Note: May not be an appropriate nutrition diagnosis when recommendation is for weight loss, during end-of-life care, upon initiation of feeding, or during acute stressed states (e.g., surgery, organ failure).</i> <i>Whenever possible, nutrient intake data should be considered in combination with clinical, biochemical, anthropometric information, medical diagnosis, clinical status, and/or other factors as well as diet to provide a valid assessment of nutritional status based on a totality of the evidence. (Institute of Medicine. Dietary Reference Intakes: Applications in Dietary Assessment. Washington, DC: National Academies Press; 2000.)</i>	248-249
Excessive enteral nutrition infusion	NI-2.4	Enteral infusion that provides more calories/kcal/kJ or nutrients compared to established reference standards or recommendations based on physiological needs.	250
Less than optimal enteral nutrition composition or modality	NI-2.5	Enteral nutrition composition (nutrient components) or modality (delivery and administration) that is inconsistent with evidence-based practice.	251-252

Term	Term Number	Definition	Pages
Inadequate parenteral nutrition infusion	NI-2.6	Parenteral infusion that provides fewer calories/kcal/ kJ or nutrients compared to established reference standards or recommendations based on physiological needs. <i>Note: May not be an appropriate nutrition diagnosis when recommendation is for weight loss, during end-of-life care, upon initiation of feeding, or during acute stressed states (e.g., surgery, organ failure).</i> <i>Whenever possible, nutrient intake data should be considered in combination with clinical, biochemical, anthropometric information, medical diagnosis, clinical status, and/or other factors as well as diet to provide a valid assessment of nutritional status based on a totality of the evidence. (Institute of Medicine. Dietary Reference Intakes: Applications in Dietary Assessment. Washington, DC: National Academies Press; 2000.)</i>	253-254
Excessive parenteral nutrition infusion	NI-2.7	Parenteral infusion that provides more calories/kcal/ kJ or nutrients compared to established reference standards or recommendations based on physiological needs.	255
Less than optimal parenteral nutrition composition or modality	NI-2.8	Parenteral nutrition composition (nutrient components) or modality (delivery and administration) that is inconsistent with evidence-based practice.	256-257
Limited food acceptance	NI-2.9	Oral food/beverage intake that is inconsistent with reference standard intake for type, variety, or quality. <i>Note: May not be an appropriate nutrition diagnosis for individuals with anorexia nervosa, bulimia nervosa, binge eating disorder, or eating disorder not otherwise specified (EDNOS). Please consider using Disordered Eating Pattern (NB-1.5.)</i>	258-259
Class: Fluid Intake (3)		Actual or estimated fluid intake compared with patient goal.	
Inadequate fluid intake	NI-3.1	Lower intake of fluid-containing foods or substances compared to established reference standards or recommendations based on physiological needs. <i>Note: Whenever possible, nutrient intake data should be considered in combination with clinical, biochemical, anthropometric information, medical diagnosis, clinical status, and/or other factors as well as diet to provide a valid assessment of nutritional status based on a totality of the evidence. (Institute of Medicine. Dietary Reference Intakes: Applications in Dietary Assessment. Washington, DC: National Academies Press; 2000.)</i>	260-261
Excessive fluid intake	NI-3.2	Higher intake of fluid compared to established reference standards or recommendations based on physiological needs.	262

Term	Term Number	Definition	Pages
<i>Class: Bioactive Substances (4)</i>		Actual or observed intake of bioactive substances, including single or multiple functional food components, ingredients, dietary supplements, alcohol.	
Suboptimal bioactive substance intake (specify)	NI-4.2	Lower intake of bioactive substances compared to established reference standards or recommendations based on physiological needs. <i>Note: Bioactive substances are not part of the Dietary Reference Intakes, and therefore there are no established minimum requirements or Tolerable Upper Intake Levels. However, RDs can assess whether estimated intakes are adequate or excessive using the patient/client goal or nutrition prescription for comparison.</i> <i>Working definition of bioactive substances—physiologically active components of foods that may have an effect on health. There is no scientific consensus about a definition for bioactive substances/ components.</i>	263
Excessive bioactive substance intake (specify)	NI-4.2	Higher intake of bioactive substances compared to established reference standards or recommendations based on physiological needs. <i>Note: Working definition of bioactive substances—physiologically active components of foods that may have an effect on health. There is no scientific consensus about a definition for bioactive substances/ components.</i>	264-265
Excessive alcohol intake	NI-4.3	Intake more than the suggested limits for alcohol.	266
<i>Class: Nutrient (5)</i>		Actual or estimated intake of specific nutrient groups or single nutrients as compared with desired levels.	
Increased nutrient needs (specify)	NI-5.1	Increased need for a specific nutrient compared to established reference standards or recommendations based on physiological needs	267-268
Malnutrition	NI-5.2	Inadequate intake of protein and/or energy over prolonged periods of time resulting in loss of fat and/or muscle stores including starvation-related malnutrition, chronic disease or condition-related malnutrition and acute disease or injury-related malnutrition.	269-271
Inadequate protein-energy intake	NI-5.3	Inadequate intake of protein and/or energy compared to established reference standards or recommendations based on physiological needs of short or recent duration. <i>Note: Whenever possible, nutrient intake data should be considered in combination with clinical, biochemical, anthropometric information, medical diagnosis, clinical status, and/or other factors as well as diet to provide a valid assessment of nutritional status based on a totality of the evidence. (Institute of Medicine. Dietary Reference Intakes: Applications in Dietary Assessment. Washington, DC: National Academies Press; 2000.)</i>	272-273
Decreased nutrient needs (specify)	NI-5.4	Decreased need for a specific nutrient compared to established reference standards or recommendations based on physiological needs.	274-275
Imbalance of nutrients	NI-5.5	An undesirable combination of nutrients, such that the amount of one nutrient interferes with or alters absorption and/or utilization of another nutrient.	276

Term	Term Number	Definition	Pages
Subclass: Fat and Cholesterol (5.6)			
Inadequate fat intake	NI-5.6.1	Lower fat intake compared to established reference standards or recommendations based on physiological needs. <i>Note: May not be an appropriate nutrition diagnosis when recommendation is for weight loss or during end-of-life care. Whenever possible, nutrient intake data should be considered in combination with clinical, biochemical, anthropometric information, medical diagnosis, clinical status, and/or other factors as well as diet to provide a valid assessment of nutritional status based on a totality of the evidence. (Institute of Medicine. Dietary Reference Intakes: Applications in Dietary Assessment. Washington, DC: National Academies Press; 2000.)</i>	277
Excessive fat intake	NI-5.6.2	Higher fat intake compared to established reference standards or recommendations based on physiological needs.	278-279
Less than optimal intake of types of fats (specify)	NI-5.6.3	Intake of wrong type or quality of fats compared to established reference standards or recommendations based on physiological needs.	280-281
Subclass: Protein (5.7)			
Inadequate protein intake	NI-5.7.1	Lower intake of protein compared to established reference standards or recommendations based on physiological needs. <i>Note: Whenever possible, nutrient intake data should be considered in combination with clinical, biochemical, anthropometric information, medical diagnosis, clinical status, and/or other factors as well as diet to provide a valid assessment of nutritional status based on a totality of the evidence. (Institute of Medicine. Dietary Reference Intakes: Applications in Dietary Assessment. Washington, DC: National Academies Press; 2000.)</i>	282
Excessive protein intake	NI-5.7.2	Intake more than the recommended level of protein compared to established reference standards or recommendations based on physiological needs.	283-284
Less than optimal intake of types of proteins or amino acids (specify)	NI-5.7.3	Intake of an amount of a specific type of protein or amino acids compared to established reference standards or recommendations based on physiological needs.	285-286
Subclass: Carbohydrate and Fiber (5.8)			
Inadequate carbohydrate intake	NI-5.8.1	Lower intake of carbohydrate compared to established reference standards or recommendations based on physiological needs. <i>Note: Whenever possible, nutrient intake data should be considered in combination with clinical, biochemical, anthropometric information, medical diagnosis, clinical status, and/or other factors as well as diet to provide a valid assessment of nutritional status based on a totality of the evidence. (Institute of Medicine. Dietary Reference Intakes: Applications in Dietary Assessment. Washington, DC: National Academies Press; 2000.)</i>	287

Term	Term Number	Definition	Pages
Excessive carbohydrate intake	NI-5.8.2	Intake more than the recommended level and type of carbohydrate compared to established reference standards or recommendations based on physiological needs.	288
Less than optimal intake of types of carbohydrate (specify)	NI-5.8.3	Intake of an amount of a specific type of carbohydrate compared to established reference standards or recommendations based on physiological needs. <i>Note: Types of carbohydrate can refer generally to sugars, starch and fiber or specific carbohydrates (e.g., sucrose, fructose, lactose). Intolerance to the protein component of grains (e.g., gluten) should be documented using the Less than optimal intake of types of proteins or amino acids (NI-5.7.3) reference sheet.</i>	289-290
Inconsistent carbohydrate intake	NI-5.8.4	Inconsistent timing of carbohydrate intake throughout the day, day to day, or a pattern of carbohydrate intake that is not consistent with recommended pattern based on physiological needs.	291-292
Inadequate fiber intake	NI-5.8.5	Lower intake of fiber compared to established reference standards or recommendations based on physiological needs. <i>Note: Whenever possible, nutrient intake data should be considered in combination with clinical, biochemical, anthropometric information, medical diagnosis, clinical status, and/or other factors as well as diet to provide a valid assessment of nutritional status based on a totality of the evidence. (Institute of Medicine. Dietary Reference Intakes: Applications in Dietary Assessment. Washington, DC: National Academies Press; 2000.)</i>	293
Excessive fiber intake	NI-5.8.6	Higher intake of fiber compared to recommendations based on patient/client condition.	294
Subclass: Vitamin (5.9)			
Inadequate vitamin intake (specify)	NI-5.9.1	Lower intake of one or more vitamins compared to established reference standards or recommendations based on physiological needs. <i>Note: Whenever possible, nutrient intake data should be considered in combination with clinical, biochemical, anthropometric information, medical diagnosis, clinical status, and/or other factors as well as diet to provide a valid assessment of nutritional status based on a totality of the evidence. (Institute of Medicine. Dietary Reference Intakes: Applications in Dietary Assessment. Washington, DC: National Academies Press; 2000.)</i>	295-297
Excessive vitamin intake (specify)	NI-5.9.2	Higher intake of one or more vitamins compared to established reference standards or recommendations based on physiological needs.	298-299

Term	Term Number	Definition	Pages
Subclass: Mineral (5.10)			
Inadequate mineral intake (specify)	NI-5.10.1	Lower intake of one or more minerals compared to established reference standards or recommendations based on physiological needs. <i>Note: Whenever possible, nutrient intake data should be considered in combination with clinical, biochemical, anthropometric information, medical diagnosis, clinical status, and/or other factors as well as diet to provide a valid assessment of nutritional status based on a totality of the evidence. (Institute of Medicine. Dietary Reference Intakes: Applications in Dietary Assessment. Washington, DC: National Academies Press; 2000.)</i>	300-302
Excessive mineral intake (specify)	NI-5.10.2	Higher intake of one or more minerals compared to established reference standards or recommendations based on physiological needs.	303-304
Subclass: Multi-nutrient (5.11)			
Predicted suboptimal nutrient intake (specify)	NI-5.11.1	Future intake of one or more nutrients that is anticipated, based on observation, experience, or scientific reason, to fall short of estimated nutrient requirements, established reference standards, or recommendations based on physiological needs.	305-306
Predicted excessive nutrient intake (specify)	NI-5.11.2	Future intake of one or more nutrients that is anticipated, based on observation, experience, or scientific reason, to be more than estimated nutrient requirements, established reference standards, or recommendations based on physiological needs.	307
DOMAIN: CLINICAL	NC	Nutritional findings/problems identified that relate to medical or physical conditions.	
Class: Functional (1)		Change in physical or mechanical functioning that interferes with or prevents desired nutritional consequences.	
Swallowing difficulty	NC-1.1	Impaired or difficult movement of food and liquid within the oral cavity to the stomach.	308
Biting/Chewing (masticatory) difficulty	NC-1.2	Impaired ability to bite or chew food in preparation for swallowing.	309-310
Breastfeeding difficulty	NC-1.3	Inability to sustain nutrition through breastfeeding.	311-312
Altered GI function	NC-1.4	Changes in digestion, absorption, or elimination.	313-314
Class: Biochemical (2)		Change in capacity to metabolize nutrients as a result of medications, surgery, or as indicated by altered lab values.	
Impaired nutrient utilization	NC-2.1	Changes in ability to metabolize nutrients and bioactive substances.	315
Altered nutrition-related laboratory values (specify)	NC-2.2	Changes due to body composition, medications, body system changes or genetics, or changes in ability to eliminate byproducts of digestive and metabolic processes.	316-317

Term	Term Number	Definition	Pages
Food–medication interaction (specify)	NC-2.3	Undesirable/harmful interaction(s) between food and over-the-counter (OTC) medications, prescribed medications, herbals, botanicals, and/or dietary supplements that diminishes, enhances, or alters the effect of nutrients and/or medications	318
Predicted food–medication interaction (specify)	NC-2.4	Potential undesirable/harmful interaction(s) between food and over-the-counter (OTC) medications, prescribed medications, herbals, botanicals, and/or dietary supplements that diminishes, enhances, or alters the effect of nutrients and/or medications. <i>Note: Appropriate nutrition diagnosis when food–medication interaction is predicted, but has not yet occurred. This nutrition diagnosis is used when the practitioner wants to prevent a nutrient-medication interaction. Observed food–medication interactions should be documented using Food–medication interaction (NC-2.3.1).</i>	319
Class: Weight (3)		Chronic weight or changed weight status when compared with usual or desired body weight.	
Underweight	NC-3.1	Low body weight compared to established reference standards or recommendations.	320-321
Unintended weight loss	NC-3.2	Decrease in body weight that is not planned or desired. <i>Note: May not be an appropriate nutrition diagnosis when changes in body weight are due to fluid.</i>	322-323
Overweight/obesity	NC-3.3	Increased adiposity compared to established reference standards or recommendations, ranging from overweight to morbid obesity.	324-325
Unintended weight gain	NC-3.4	Weight gain more than that which is desired or planned.	326-327
Suboptimal growth rate	NC-3.5	Rate of growth or growth velocity slower than expected, or weight gain that is suboptimal in comparison with goal or reference standard.	328-329
Excessive growth rate	NC-3.6	Rate of growth or growth velocity greater than expected, or weight gain that is higher in comparison with goal or reference standard.	330
DOMAIN: BEHAVIORAL-ENVIRONMENTAL	NB	Nutritional findings/problems identified that relate to knowledge, attitudes/beliefs, physical environment, access to food, or food safety.	
Class: Knowledge and Beliefs (1)		Actual knowledge and beliefs as reported, observed, or documented	
Food- and nutrition-related knowledge deficit	NB-1.1	Incomplete or inaccurate knowledge about food, nutrition, or nutrition-related information and guidelines	331-332
Unsupported beliefs/attitudes about food or nutrition-related topics USE WITH CAUTION TO BE SENSITIVE TO PATIENT CONCERNS	NB-1.2	Beliefs/attitudes and practices about food, nutrition, and nutrition-related topics that are incompatible with sound nutrition principles, nutrition care, or disease/condition (excluding disordered eating patterns and eating disorders).	333-334

Term	Term Number	Definition	Pages
Not ready for diet/lifestyle change	NB-1.3	Lack of perceived value of nutrition-related behavior change compared to costs (consequences or effort required to make changes); conflict with personal value system; preceding event, condition or cause to behavior change.	335
Self-monitoring deficit	NB-1.4	Lack of data recording to track personal progress.	336-337
Disordered eating pattern	NB-1.5	Beliefs, attitudes, thoughts, and behaviors related to food, eating, and weight management, including classic eating disorders as well as less severe, similar conditions that negatively impact health.	338-340
Limited adherence to nutrition-related recommendations	NB-1.6	Lack of nutrition-related changes as per intervention agreed upon by client or population.	341-342
Undesirable food choices	NB-1.7	Food and/or beverage choices that are inconsistent with dietary reference intake standards (e.g., Dietary Reference Intakes), national food guidelines (e.g., US Dietary Guidelines, MyPlate), diet quality index standards (e.g., Healthy Eating Index) or as defined in the nutrition prescription.	343-344
<i>Class: Physical Activity and Function (2)</i>		Actual physical activity, self-care, and quality-of-life problems as reported, observed, or documented	
Physical inactivity	NB-2.1	Low level of activity or sedentary behavior to the extent that it reduces energy expenditure and impacts health.	345-346
Excessive physical activity	NB-2.2	Involuntary or voluntary physical activity or movement that interferes with energy needs, growth, or exceeds that which is necessary to achieve optimal health.	347-348
Inability to manage self-care	NB-2.3	Lack of capacity or unwillingness to implement methods to support healthful food- and nutrition-related behavior.	349-350
Impaired ability to prepare foods/meals	NB-2.4	Cognitive or physical impairment that prevents preparation of foods/fluids.	351
Poor nutrition quality of life (NQOL)	NB-2.5	Diminished patient/client perception of quality of life in response to nutrition problems and recommendations.	352-353
Self-feeding difficulty	NB-2.6	Impaired actions to place food or beverages in mouth.	354-355
<i>Class: Food Safety and Access (3)</i>		Actual problems with food safety or access to food, water, or nutrition-related supplies.	
Intake of unsafe food	NB-3.1	Intake of food and/or fluids intentionally or unintentionally contaminated with toxins, poisonous products, infectious agents, microbial agents, additives, allergens, and/or agents of bioterrorism.	356-357

Term	Term Number	Definition	Pages
Limited access to food and/or water	NB-3.2	Diminished ability to acquire a sufficient quantity and variety of healthful food and/or potable water based on dietary reference intake standards (e.g., Dietary Reference Intakes), national food guidelines (e.g., US Dietary Guidelines, MyPlate) or as defined in the nutrition prescription.	358-359
Limited access to nutrition-related supplies	NB-3.3	Diminished ability to acquire nutrition-related supplies based on identified needs.	360-361
DOMAIN: OTHER	NO	Nutrition findings that are not classified as intake, clinical or behavioral-environmental problems.	
No nutrition diagnosis at this time	NO-1.1	Absence of a current nutrition problem warranting a nutrition intervention. This determination results from a nutrition assessment.	362

Increased Energy Expenditure (NI-1.1)

Definition

Resting metabolic rate (RMR) more than predicted requirements due to body composition; medications; or endocrine, neurologic, or genetic changes.

Note: RMR is the sum of metabolic processes of active cell mass related to the maintenance of normal body functions and regulatory balance during rest.

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Physiological causes increasing nutrient needs due to anabolism, growth, maintenance of body temperature
- Voluntary or involuntary physical activity/movement

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
<i>Biochemical Data, Medical Tests and Procedures</i>	
<i>Anthropometric Measurements</i>	• Unintentional weight loss of $\geq 10\%$ in 6 months, $\geq 5\%$ in 1 month (adults and pediatrics), and $> 2\%$ in 1 week (pediatrics) • Evidence of need for accelerated or catch-up growth or weight gain in children; absence of normal growth • Increased proportion of lean body mass
<i>Nutrition-Focused Physical Findings</i>	• Fever • Measured RMR $>$ estimated or expected RMR
<i>Food/Nutrition-Related History</i>	• Increased physical activity, e.g., endurance athlete • Medications that increase energy expenditure
<i>Client History</i>	• Conditions associated with a diagnosis or treatment, e.g., Parkinson's disease, cerebral palsy, Alzheimer's disease, cystic fibrosis, chronic obstructive pulmonary disease (COPD)

References

1. Frankenfield D, Roth-Yousey L, Compher C. Comparison of predictive equations to measured resting metabolic rate in healthy nonobese and obese individuals, a systematic review. *J Am Diet Assoc.* 2005;105:775-789.

Updated: 2013 Edition

Inadequate* Energy Intake (NI-1.2)

Definition

Energy intake that is less than energy expenditure, established reference standards, or recommendations based on physiological needs.

Note: May not be an appropriate nutrition diagnosis when the goal is weight loss, during end-of-life care, upon initiation of EN/PN, or acute stressed state (e.g., surgery, organ failure).

Whenever possible, nutrient intake data should be considered in combination with clinical, biochemical, anthropometric information, medical diagnosis, clinical status, and/or other factors as well as diet to provide a valid assessment of nutritional status based on a totality of the evidence. (Institute of Medicine. Dietary Reference Intakes: Applications in Dietary Assessment. Washington, DC: National Academies Press; 2000.)

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Pathological or physiological causes that result in increased energy requirements, e.g., increased nutrient needs due to prolonged catabolic illness
- Decreased ability to consume sufficient energy
- Lack of access to food or artificial nutrition, e.g., economic constraints, restricting food given to elderly and/or children
- Cultural practices that affect ability to access food
- Food- and nutrition-related knowledge deficit concerning energy intake
- Psychological causes such as depression and disordered eating

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
Biochemical Data, Medical Tests and Procedures	
Anthropometric Measurements	• Failure to gain or maintain appropriate weight
Nutrition-Focused Physical Findings	• Poor dentition
Food/Nutrition-Related History	Reports or observations of: • Estimated energy intake from diet less than needs based on estimated or measured resting metabolic rate • Restriction or omission of energy-dense foods from diet • Food avoidance and/or lack of interest in food • Inability to independently consume foods/fluids (diminished joint mobility of wrist, hand, or digits) • Estimated parenteral or enteral nutrition intake insufficient to meet needs based on estimated or measured resting metabolic rate • Excessive consumption of alcohol or other drugs that reduce hunger • Medications that affect appetite

*If a synonym for the term "inadequate" is helpful or needed, an approved alternate is the word "suboptimal."

Inadequate* Energy Intake (NI-1.2)

<i>Client History</i>	• Conditions associated with diagnosis or treatment, e.g., mental illness, eating disorders, dementia, alcoholism, substance abuse, and acute or chronic pain management
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References

- 1 Institute of Medicine. *Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein, and Amino Acids*. Washington, DC: National Academies Press; 2002.

Updated: 2013 Edition

*If a synonym for the term “inadequate” is helpful or needed, an approved alternate is the word “suboptimal.”

Excessive Energy Intake (NI-1.3)

Definition

Energy intake that exceeds energy expenditure, established reference standards, or recommendations based on physiological needs.

Note: May not be appropriate nutrition diagnosis when weight gain is desired.

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Unsupported beliefs/attitudes about food, nutrition, and nutrition-related topics
- Food-and nutrition-related knowledge deficit concerning energy intake
- Lack of or limited access to healthful food choices, e.g., healthful food choices not provided as an option by caregiver or parent, homeless
- Lack of value for behavior change, competing values
- Medications that increase appetite, e.g., steroids, antidepressants
- Overfeeding of parenteral/enteral nutrition (PN/EN)
- Calories/kcal/kJ unaccounted for from IV infusion and/or medications
- Unwilling or disinterested in reducing energy intake
- Failure to adjust for lifestyle changes and decreased metabolism (e.g., aging)
- Failure to adjust for restricted mobility due to recovery from injury, surgical procedure, other
- Resolution of prior hypermetabolism without reduction in intake

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
<i>Biochemical Data, Medical Tests and Procedures</i>	• Abnormal liver function tests after prolonged exposure (3 to 6 weeks) • ↑ Respiratory quotient >1.0
<i>Anthropometric Measurements</i>	• Body fat percentage > 25% for men and > 32% for women • BMI > 25 (adults); BMI > 95th percentile (pediatrics) • Weight gain
<i>Nutrition-Focused Physical Findings</i>	• Increased body adiposity • Increased respiratory rate
<i>Food/Nutrition-Related History</i>	Reports or observations of: • Intake of energy in excess of estimated or measured energy needs • Intake of high caloric density or large portions of foods/beverages • EN/PN more than estimated or measured (e.g., indirect calorimetry) energy expenditure
<i>Client History</i>	

Arrows used with laboratory values: ↑ represents above reference standard and ↓ represents below reference standard.

Excessive Energy Intake (NI-1.3)

References

1. Boullata J, Williams J, Cottrell F, Hudson L, Compher C. Accurate determination of energy needs in hospitalized patients. *J Am Diet Assoc.* 2007;107:393-401.
2. McClave SA, Lowen CC, Kleber MJ, McConnell JW, Jung LY, Goldsmith LJ. Clinical use of the respiratory quotient obtained from indirect calorimetry. *J Parenter Enteral Nutr.* 2003;27:21-26.
3. McClave SA, Lowen CC, Kleber MJ, Nicholson JF, Jimmerson SC, McConnell JW, Jung LY. Are patients fed appropriately according to their caloric requirements? *J Parenter Enteral Nutr.* 1998;22:375-381.
4. Patt PL, Akena SM, Vogel LC, Foley S, Anderson CJ. Estimation of resting energy expenditure in children with spinal cord injuries. *J Spinal Cord Med.* 2007; 30:S83-S87.

Updated: 2013 Edition

Predicted Suboptimal Energy Intake (NI-1.4)

Definition

Future energy intake that is anticipated, based on observation, experience, or scientific reason, to be less than estimated energy expenditure, established reference standards, or recommendations based on physiological needs.

Note: May not be an appropriate nutrition diagnosis during weight loss. Use Inadequate Energy Intake (NI-1.2) when current energy intake is less than energy expenditure.

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Scheduled or planned procedure or medical therapy that is predicted to increase energy requirements
- Scheduled or planned medical therapy or medication that is predicted to decrease ability to consume sufficient energy
- Anticipated change in physical demands of work or leisure activities (e.g., job change, training for competitive sports)
- Stressful life event or living situation (e.g., death in family, divorce, loss of home) that, in the past, resulted in suboptimal energy intake

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
Biochemical Data, Medical Tests and Procedures	
Anthropometric Measurements	• Population-based anthropometric data indicating suboptimal energy intake
Nutrition-Focused Physical Findings	• Population-based data on acute and chronic disease prevalence indicating suboptimal energy intake
Food/Nutrition-Related History	Reports or observations of: • Estimated energy intake from all sources less than projected needs • History of marginal or suboptimal energy intake • Projected change in ability to shop, prepare, and/or consume sufficient energy • Medications that are anticipated to decrease appetite or affect ability to consume sufficient energy • No prior knowledge of need for food- and nutrition-related recommendations • Projected increase in level of physical activity
Client History	• Scheduled procedure or therapy known to increase energy need or change ability to consume sufficient energy • History or presence of a condition for which research shows an increased incidence of increased energy expenditure • History or presence of a condition for which research shows an increased incidence of suboptimal energy intake • Client report of recent or anticipated life stress or change

Predicted Suboptimal Energy Intake (NI-1.4)

References

1. Larson N, Story M. A review of environmental influences on food choices. *Ann Behav Med.* 2009;38:S56-S73.
2. Larson NI, Story MT, Nelson MC. Neighborhood environments: disparities in access to healthy foods in the US. *Am J Prev Med.* 2009;36:74-81.
3. McElroy KR, Bibeau D, Steckler A, Glanz K. An ecological perspective on health promotion programs. *Health Educ Q.* 1988;5:351-377.

Updated: 2013 Edition

Predicted Excessive Energy Intake (NI-1.5)

Definition

Future energy intake that is anticipated, based on observation, experience, or scientific reason, to exceed estimated energy expenditure, established reference standards, or recommendations based on physiological needs.

Note: May not be appropriate nutrition diagnosis when weight gain is desired. Use Excessive Energy Intake (NI-1.3) when current energy intake is more than energy expenditure.

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Anticipated change in physical demands with periods of immobility or reduced physical activity
- Family or social history or culture of overeating
- Genetic predisposition to overweight/obesity
- Physiological condition associated with altered metabolism
- Scheduled or planned medical therapy or medication that is predicted to reduce metabolic rate/metabolism
- Stressful life event or living situation (e.g., death in family, divorce, loss of home) that, in the past, resulted in excessive energy intake

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
Biochemical Data, Medical Tests and Procedures	
Anthropometric Measurements	• Population-based anthropometric data indicating excessive energy intake
Nutrition-Focused Physical Findings	• Population-based data on acute and chronic disease prevalence indicating excessive energy intake
Food/Nutrition-Related History	Reports or observations of: • Estimated energy intake from all sources more than projected needs at new lower metabolic level • Estimated energy intake from all sources more than projected needs at new lower physical activity level • History of excessive energy intake at previous metabolic level • History of excessive energy intake at previous physical activity level • Recent or planned change in mobility and/or ability to engage in physical activity • Projected change in ability to shop and/or prepare food • Medications that increase appetite • Recent or planned change in physical activity • No prior knowledge of need for food- and nutrition-related recommendations

Predicted Excessive Energy Intake (NI-1.5)

<i>Client History</i>	• Scheduled surgical procedure or medical therapy known to decrease energy need • History or presence of a condition for which research shows an increased incidence of decreased energy expenditure • History or presence of a condition for which research shows an increased incidence of excessive energy intake
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References

1. Larson N, Story M. A review of environmental influences on food choices. *Ann Behav Med.* 2009;38:S56-S73.
2. Larson NI, Story MT, Nelson MC. Neighborhood environments: disparities in access to healthy foods in the US. *Am J Prev Med.* 2009;36:74-81.
3. McElroy KR, Bibeau D, Steckler A, Glanz K. An ecological perspective on health promotion programs. *Health Educ Q.* 1988;5:351-377.
4. Position of the American Dietetic Association and American Society for Nutrition: Obesity, reproduction, and pregnancy outcomes. *J Am Diet Assoc.* 2009;109:918-927.
5. Position of the American Dietetic Association: Weight management. *J Am Diet Assoc.* 2009;109:330-346.

Updated: 2013 Edition

Inadequate* Oral Intake (NI-2.1)

Definition

Oral food/beverage intake that is less than established reference standards or recommendations based on physiological needs.

Note: This nutrition diagnosis does not include intake via oroenteric tube.

May not be an appropriate nutrition diagnosis when the goal is weight loss, during end-of-life care, upon initiation of feeding, or during combined oral/EN/PN therapy.

Whenever possible, nutrient intake data should be considered in combination with clinical, biochemical, anthropometric information, medical diagnosis, clinical status, and/or other factors as well as diet to provide a valid assessment of nutritional status based on a totality of the evidence. (Institute of Medicine. Dietary Reference Intakes: Applications in Dietary Assessment. Washington, DC: National Academies Press; 2000.)

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Physiological causes increasing nutrient needs, e.g., due to prolonged catabolic illness
- Decreased ability to consume sufficient energy, e.g., increased nutrient needs due to prolonged catabolic illness
- Lack of or limited access to food, e.g., economic constraints, restricting food given to elderly and/or children
- Limited food acceptance due to physiological or behavioral issues, aversion, or unsupported beliefs/attitudes
- Cultural practices that affect ability to access food
- Food- and nutrition-related knowledge deficit concerning appropriate oral food/beverage intake
- Psychological causes such as depression and disordered eating

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
Biochemical Data, Medical Tests and Procedures	
Anthropometric Measurements	• Weight loss, insufficient growth velocity
Nutrition-Focused Physical Findings	• Dry skin, mucous membranes, poor skin turgor • Anorexia, nausea, or vomiting • Change in appetite or taste • Clinical evidence of vitamin/mineral deficiency
Food/Nutrition-Related History	Reports or observations of: • Estimates of insufficient intake of energy or high-quality protein from diet when compared to requirements • Economic constraints that limit food availability • Excessive consumption of alcohol or other drugs that reduce hunger • Medications that cause anorexia • Limited food/beverage intake inconsistent with nutrition reference standards for type, variety, diet quality • less than optimal reliance on foods, food groups, supplements or nutrition support

**If a synonym for the term "inadequate" is helpful or needed, an approved alternate is the word "suboptimal."*

Inadequate* Oral Intake (NI-2.1)

<i>Client History</i>	• Conditions associated with a diagnosis or treatment of catabolic illness such as AIDS, tuberculosis, anorexia nervosa, sepsis or infection from recent surgery, depression, acute or chronic pain • Protein and/or nutrient malabsorption
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References

1. Burklow KA, Phelps AN, Schultz JR, McConnell K, Rudolph C. Classifying complex pediatric feeding disorders. *J Pediatr Gastroenterol Nutr.* 1998;27:143-147.
2. Chatoor, I. Feeding disorders in infants and toddlers: diagnosis and treatment. *Child Adolesc Psychiatr Clin N Am.* 2002;11:163-183.
3. Dunitz-Scheer M, Levine A, Roth Y, Kratky E, Beckenbach H, Braegger C, Hauer A, Wilken M, Wittenberg J, Trabi T, Scheer PJ. Prevention and treatment of tube dependency in infancy and early childhood. *ICAN: Infant, Child, & Adolescent Nutrition.* 2009;1:72-82.
4. Falciglia GA, Couch SC, Siem Gribble L, Pabst SM, Frank R. Food neophobia in childhood affects dietary variety. *J Am Diet Assoc.* 2000;100:1474-1481.
5. Galloway AT, Lee Y, Birch LL. Predictors and consequences of food neophobia and pickiness in young girls. *J Am Diet Assoc.* 2003;103:692-698.
6. Miller CK. Updates on pediatric feeding and swallowing problems. *Curr Opin Otolaryngol Head Neck Surg.* 2009;17:194-199.
9. Rommel N, De Meyer A, Feenstra L, Veerman-Wauters G. The complexity of feeding problems in 700 infants and young children presenting to a tertiary care institution. *J Pediatr Gastroenterol Nutr.* 2003;37:75-84.
10. Schwarz SM, Corredor J, Fisher-Medina J, Cohen J, Rabinowitz S. Diagnosis and treatment of feeding disorders in children with developmental disabilities. *Pediatrics.* 2001;108(3):671-676.
11. Skinner JD, Carruth BR, Bounds W, Ziegler PJ. Children's food preferences: a longitudinal analysis. *J Am Diet Assoc.* 2002;102:1638-1647.
12. Wardle J, Carnell S, Cooke L. Parental control over feeding and children's fruit and vegetable intake: how are they related? *J Am Diet Assoc.* 2005;105:227-232.

Updated: 2011 Edition

*If a synonym for the term "inadequate" is helpful or needed, an approved alternate is the word "suboptimal."

Excessive Oral Intake (NI-2.2)

Definition

Oral food/beverage intake that exceeds estimated energy needs, established reference standards, or recommendations based on physiological needs.

Note: This nutrition diagnosis does not include intake via oroenteric tube.

May not be an appropriate nutrition diagnosis when weight gain is desired.

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Unsupported beliefs/attitudes about food, nutrition, and nutrition-related topics
- Food- and nutrition-related knowledge deficit concerning appropriate oral food/beverage intake
- Lack of or limited access to healthful food choices, e.g., healthful food choices not provided as an option by caregiver or parent, homeless
- Lack of value for behavior change, competing values
- Inability to limit or refuse offered foods
- Lack of food planning, purchasing, and preparation skills
- Loss of appetite awareness
- Medications that increase appetite, e.g., steroids, antidepressants
- Psychological causes such as depression and disordered eating
- Unwilling or disinterested in reducing intake

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
Biochemical Data, Medical Tests and Procedures	
Anthropometric Measurements	• Weight gain not attributed to fluid retention or normal growth
Nutrition-Focused Physical Findings	
Food/Nutrition-Related History	Reports or observations of: • Intake of high caloric-density foods/beverages (juice, soda, or alcohol) at meals and/or snacks • Intake of large portions of foods/beverages, food groups, or specific food items • Estimated intake that exceeds estimated or measured energy needs • Highly variable estimated daily energy intake • Binge eating patterns • Frequent, excessive fast food or restaurant intake
Client History	• Conditions associated with a diagnosis or treatment, e.g., obesity, overweight, or metabolic syndrome, depression, anxiety disorder

Excessive Oral Intake (NI-2.2)

References

1. Chabas D, Foulon C, Gonzalez J, Nasr M, Lyon-Caen O, Willer JC, Derenne JP, Arnulf I. Eating disorder and metabolism in narcoleptic patients. *Sleep*. 2007;30:1267-73.
2. Fortuyn HA, Swinkels S, Buitelaar J, Renier WO, Furer JW, Rijnders CA, Hodiament PP, Overeem S. High prevalence of eating disorders in narcolepsy with cataplexy: a case-control study. *Sleep*. 2008;31:335-41.
3. Position of the American Dietetic Association: Weight management. *J Am Diet Assoc*. 2009;109:330-346.
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6. Position of the American Dietetic Association: The role of registered dietitians and dietetic technicians registered in health promotion and disease prevention. *J Am Diet Assoc*. 2006;106:1875-1884.
7. Siega-Riz AM, Haugen M, Meltzer HM, Von Holle A, Hamer R, Torgersen L, Knopf-Berg C, Reichborn-Kjennerud T, Bulik CM. Nutrient and food group intakes of women with and without bulimia nervosa and binge eating disorder during pregnancy. *Am J Clin Nutr*. 2008; 87:1346-55.

Updated: 2011 Edition

Inadequate* Enteral Nutrition Infusion (NI-2.3)

Definition

Enteral infusion that provides fewer calories/kcal/kJ or nutrients compared to established reference standards or recommendations based on physiological needs.

Note: May not be an appropriate nutrition diagnosis when recommendation is for weight loss, during end-of-life care, upon initiation of feeding, or during acute stressed states (e.g., surgery, organ failure).

Whenever possible, nutrient intake data should be considered in combination with clinical, biochemical, anthropometric information, medical diagnosis, clinical status, and/or other factors as well as diet to provide a valid assessment of nutritional status based on a totality of the evidence. (Institute of Medicine. Dietary Reference Intakes: Applications in Dietary Assessment. Washington, DC: National Academies Press; 2000.)

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Altered absorption or metabolism of nutrients, e.g., medications
- Food- and nutrition-related knowledge deficit concerning appropriate formula/formulation given for EN
- Lack of, compromised, or incorrect access for delivering EN
- Physiological causes increasing nutrient needs, e.g., due to accelerated growth, wound healing, chronic infection, multiple fractures
- Intolerance of EN
- Infusion volume not reached or schedule for infusion interrupted

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Diagnosis

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
Biochemical Data, Medical Tests and Procedures	• ↓ Metabolic cart/indirect calorimetry measurement, e.g., respiratory quotient < 0.7 • Vitamin/mineral abnormalities: • ↓ Calcium < 9.2 mg/dL (2.3 mmol/L) • Vitamin K—abnormal international normalized ratio (INR) • ↓ Copper < 70 µg/dL (11 µmol/L) • ↓ Zinc < 78 µg/dL (12 µmol/L) • ↓ Iron < 50 µg/dL (nmol/L); iron-binding capacity < 250 µg/dL (44.8 µmol/L)
Anthropometric Measurements	• Growth failure, based on reference growth standards, e.g. National Center for Health Statistics (NCHS) and fetal growth failure • Insufficient maternal weight gain • Lack of planned weight gain • Unintentional weight loss of ≥ 5% in 1 month or ≥ 10% in 6 months (not attributed to fluid) in adults • Any weight loss in infants or children • Underweight (BMI < 18.5)

Arrows used with laboratory values: ↑ represents above reference standard and ↓ represents below reference standard.

*If a synonym for the term "inadequate" is helpful or needed, an approved alternate is the word "suboptimal."

Inadequate* Enteral Nutrition Infusion (NI-2.3)

Nutrition-Focused Physical Findings	• Clinical evidence of vitamin/mineral deficiency (e.g., hair loss, bleeding gums, pale nail beds, neurologic changes) • Evidence of dehydration, e.g., dry mucous membranes, poor skin turgor • Loss of skin integrity, delayed wound healing, or pressure ulcers • Loss of muscle mass and/or subcutaneous fat • Nausea, vomiting, diarrhea
Food/Nutrition-Related History	Reports or observations of: • Inadequate EN volume compared to estimated or measured (indirect calorimetry) requirements • Feeding tube in wrong position or removed • Altered capacity for desired levels of physical activity or exercise, easy fatigue with increased activity • Suboptimal feeding position
Client History	• Conditions associated with a diagnosis or treatment, e.g., intestinal resection, Crohn's disease, HIV/AIDS, burns, preterm birth, malnutrition

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3. McClave SA, Snider HL. Clinical use of gastric residual volumes as a monitor for patients on enteral tube feeding. *J Parenter Enteral Nutr.* 2002;26(Suppl):S43-S48; discussion S49-S50.
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Updated: 2011 Edition

*If a synonym for the term "inadequate" is helpful or needed, an approved alternate is the word "suboptimal."

Excessive Enteral Nutrition Infusion (NI-2.4)

Definition

Enteral infusion that provides more calories/kcal/kJ or nutrients compared to established reference standards or recommendations based on physiological needs.

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Physiological causes, e.g., decreased needs related to low activity levels with critical illness or organ failure
- Food- and nutrition-related knowledge deficit concerning appropriate amount of enteral nutrition

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
Biochemical Data, Medical Tests and Procedures	• ↑ BUN:creatinine ratio (protein) • Hyperglycemia (carbohydrate) • Hypercapnia
Anthropometric Measurements	• Weight gain in excess of lean tissue accretion
Nutrition-Focused Physical Findings	• Edema with excess fluid administration
Food/Nutrition-Related History	Reports or observations of: • Estimated intake from enteral nutrients that is consistently more than recommended intake for carbohydrate, protein, and fat • Use of drugs that reduce requirements or impair metabolism of energy, protein, fat, or fluid. • Unrealistic expectations of weight gain or ideal weight
Client History	

Arrows used with laboratory values: ↑ represents above reference standard and ↓ represents below reference standard.

References

1. Institute of Medicine. *Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein, and Amino Acids*. Washington, DC: National Academies Press; 2002.
2. Institute of Medicine. *Dietary Reference Intakes for Water, Potassium, Sodium, Chloride, and Sulfate*. Washington, DC: National Academies Press; 2004.
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Updated: 2011 Edition

Less than Optimal Enteral Nutrition Composition or Modality (NI-2.5)

Definition

Enteral nutrition composition (nutrient components) or modality (delivery and administration) that is inconsistent with evidence-based practice.

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Physiological causes, e.g., improvement in patient/client status, allowing return to total or partial oral diet; changes in the course of disease resulting in changes in feeding and/or nutrient requirements
- Food and nutrition-related knowledge deficit concerning EN product
- End-of-life care if patient/client or family do not desire nutrition support

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
<i>Biochemical Data, Medical Tests and Procedures</i>	• Abnormal levels of markers specific for various nutrients, e.g., hyperphosphatemia in patient/client receiving feedings with a high phosphorus content, hypokalemia in patient/client receiving feedings with low potassium content
<i>Anthropometric Measurements</i>	• Weight gain in excess of lean tissue accretion • Weight loss
<i>Nutrition-Focused Physical Findings</i>	• Edema with excess fluid administration • Loss of subcutaneous fat and muscle stores • Nausea, vomiting, diarrhea, high gastric residual volume
<i>Food/Nutrition-Related History</i>	Reports or observations of: • Estimated intake from enteral nutrients that is consistently more or less than recommended intake for carbohydrate, protein, and/or fat—especially related to patient/client's ability to consume an oral diet that meets needs at this point in time • Estimated intake of other nutrients that is consistently more or less than recommended • Formula composition or type that is inconsistent with evidence-based practice • Verbalizations or written responses that are inaccurate or incomplete • History of enteral or parenteral nutrition intolerance
<i>Client History</i>	• Resolving or improved GI function • Conditions associated with a diagnosis or treatment, e.g., major elective surgery, trauma, burns, head and neck cancer, and critically ill patients, acute lung injury, acute respiratory distress syndrome, treatments/therapy requiring interruption of infusion, transfer of nutrition care to a new setting or level of care, end-of-life care

Less than Optimal Enteral Nutrition Composition or Modality (NI-2.5)

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1. McClave SA, Lowen CC, Kleber MJ, Nicholson JF, Jimmerson SC, McConnell JW, Jung LY. Are patients fed appropriately according to their caloric requirements? *J Parenter Enteral Nutr.* 1998;22:375-381.
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4. McClave SA, Martindale RG, Vanek VW, McCarthy M, Roberts P, Taylor B, Ochoa JB, Napolitano L, Cresci G, the ASPEN Board of Directors and the American College of Critical Care Medicine. Guidelines for the Provision and Assessment of Nutrition Support Therapy in the Adult Critically Ill Patient: Society of Critical Care Medicine (SCCM) and American Society for Parenteral and Enteral Nutrition (ASPEN). *J Parenter Enteral Nutr.* 2009;33:296-300.
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Updated: 2013 Edition

Inadequate* Parenteral Nutrition Infusion (NI-2.6)

Definition

Parenteral infusion that provides fewer calories/kcal/kJ or nutrients compared to established reference standards or recommendations based on physiological needs.

Note: May not be an appropriate nutrition diagnosis when recommendation is for weight loss, during end-of-life care, upon initiation of feeding, or during acute stressed states (e.g., surgery, organ failure).

Whenever possible, nutrient intake data should be considered in combination with clinical, biochemical, anthropometric information, medical diagnosis, clinical status, and/or other factors as well as diet to provide a valid assessment of nutritional status based on a totality of the evidence. (Institute of Medicine. Dietary Reference Intakes: Applications in Dietary Assessment. Washington, DC: National Academies Press; 2000.)

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Altered absorption or metabolism of nutrients, e.g., medications
- Food- and nutrition-related knowledge deficit concerning appropriate formula/formulation given for PN
- Lack of, compromised, or incorrect access for delivering PN
- Physiological causes increasing nutrient needs, e.g., due to accelerated growth, wound healing, chronic infection, multiple fractures
- Intolerance of PN
- Infusion volume not reached or schedule for infusion interrupted

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
Biochemical Data, Medical Tests and Procedures	• ↓ Metabolic cart/indirect calorimetry measurement, e.g., respiratory quotient < 0.7 • Vitamin/mineral abnormalities: • ↓ Calcium < 9.2 mg/dL (2.3 mmol/L) • Vitamin K—abnormal international normalized ratio (INR) • ↓ Copper < 70 µg/dL (11 µmol/L) • ↓ Zinc < 78 µg/dL (12 µmol/L) • ↓ Iron < 50 µg/dL (nmol/L); iron-binding capacity < 250 µg/dL (44.8 µmol/L)
Anthropometric Measurements	• Growth failure, based on reference growth standards, e.g. National Center for Health Statistics (NCHS) and fetal growth failure • Insufficient maternal weight gain • Lack of planned weight gain • Unintentional weight loss of ≥ 5% in 1 month or ≥ 10% in 6 months (not attributed to fluid) in adults • Any weight loss in infants or children • Underweight (BMI < 18.5)

Arrows used with laboratory values: ↑ represents above reference standard and ↓ represents below reference standard.

*If a synonym for the term "inadequate" is helpful or needed, an approved alternate is the word "suboptimal."

Inadequate* Parenteral Nutrition Infusion (NI-2.6)

<i>Nutrition-Focused Physical Findings</i>	• Clinical evidence of vitamin/mineral deficiency (e.g., hair loss, bleeding gums, pale nail beds, neurologic changes) • Evidence of dehydration, e.g., dry mucous membranes, poor skin turgor • Loss of skin integrity, delayed wound healing, or pressure ulcers • Loss of muscle mass and/or subcutaneous fat • Nausea, vomiting, diarrhea
<i>Food/Nutrition-Related History</i>	Reports or observations of: • Inadequate PN volume compared to estimated or measured (indirect calorimetry) requirements • Feeding tube or venous access in wrong position or removed • Altered capacity for desired levels of physical activity or exercise, easy fatigue with increased activity
<i>Client History</i>	• Conditions associated with a diagnosis or treatment, e.g., intestinal resection, Crohn's disease, HIV/AIDS, burns, pre-term birth, malnutrition

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1. McClave SA, Spain DA, Skolnick JL, Lowen CC, Kieber MJ, Wickerham PS, Vogt JR, Looney SW. Achievement of steady state optimizes results when performing indirect calorimetry. *J Parenter Enteral Nutr.* 2003;27:16-20.
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Created: 2011 Edition

*If a synonym for the term "inadequate" is helpful or needed, an approved alternate is the word "suboptimal."

Excessive Parenteral Nutrition Infusion (NI-2.7)

Definition

Parenteral infusion that provides more calories/kcal/kJ or nutrients compared to established reference standards or recommendations based on physiological needs.

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Physiological causes, e.g., decreased needs related to low activity levels with critical illness or organ failure
- Food- and nutrition-related knowledge deficit concerning appropriate amount of PN

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
Biochemical Data, Medical Tests and Procedures	• ↑ BUN:creatinine ratio (protein) • Hyperglycemia (carbohydrate) • Hypercapnia • ↑ liver enzymes
Anthropometric Measurements	• Weight gain in excess of lean tissue accretion
Nutrition-Focused Physical Findings	• Edema with excess fluid administration
Food/Nutrition-Related History	Reports or observations of: • Estimated intake from parenteral nutrients that is consistently more than recommended intake for carbohydrate, protein, and fat • Use of drugs that reduce requirements or impair metabolism of energy, protein, fat, or fluid. • Unrealistic expectations of weight gain or ideal weight
Client History	

Arrows used with laboratory values: ↑ represents above reference standard and ↓ represents below reference standard.

References

1. Institute of Medicine. *Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein, and Amino Acids*. Washington, DC: National Academies Press; 2002.
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Less than Optimal Parenteral Nutrition Composition or Modality (NI-2.8)

Definition

Parenteral nutrition composition (nutrient components) or modality (delivery and administration) that is inconsistent with evidence-based practice.

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Physiological causes, e.g., improvement in patient/client status, allowing return to total or partial oral diet; changes in the course of disease resulting in changes in feeding and/or nutrient requirements
- Food and nutrition-related knowledge deficit concerning PN product
- End-of-life care if patient/client or family do not desire nutrition support

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
<i>Biochemical Data, Medical Tests and Procedures</i>	• ↑ liver function tests in patient/client on long-term (more than 3 to 6 weeks) nutrition support • Abnormal levels of markers specific for various nutrients, e.g., hyperphosphatemia in patient/client receiving feedings with a high phosphorus content, hypokalemia in patient/client receiving feedings with low potassium content
<i>Anthropometric Measurements</i>	• Weight gain in excess of lean tissue accretion • Weight loss
<i>Nutrition-Focused Physical Findings</i>	• Edema with excess fluid administration • Loss of subcutaneous fat and muscle stores • Nausea
<i>Food/Nutrition-Related History</i>	Reports or observations of: • Estimated intake from parenteral nutrients that is consistently more or less than recommended intake for carbohydrate, protein, and/or fat—especially related to patient/client's ability to consume an oral diet that meets needs at this point in time • Estimated intake of other nutrients that is consistently more or less than recommended • Formula composition or type that is inconsistent with evidence-based practice • Verbalizations or written responses that are inaccurate or incomplete • History of enteral or parenteral nutrition intolerance

Arrows used with laboratory values: ↑ represents above reference standard and ↓ represents below reference standard.

Less than Optimal Parenteral Nutrition Composition or Modality (NI-2.8)

<i>Client History</i>	• Complications such as fatty liver in the absence of other causes • Resolving or improved GI function • Conditions associated with a diagnosis or treatment, e.g., major elective surgery, trauma, burns, head and neck cancer, and critically ill patients, acute lung injury, acute respiratory distress syndrome, treatments/therapy requiring interruption of infusion, transfer of nutrition care to a new setting or level of care, end-of-life care
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References

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2. McClave SA, Lowen CC, Kleber MJ, Nicholson JF, Jimmerson SC, McConnell JW, Jung LY. Are patients fed appropriately according to their caloric requirements? *J Parenter Enteral Nutr.* 1998;22:375-381.
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Updated: 2013 Edition

Limited Food Acceptance (NI-2.9)

Definition

Oral food/beverage intake that is inconsistent with reference standard intake for type, variety, or quality.

Note: May not be an appropriate nutrition diagnosis for individuals with anorexia nervosa, bulimia nervosa, binge eating disorder, or eating disorder not otherwise specified (EDNOS). Please consider using Disordered Eating Pattern (NB-1.5).

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Physiological causes, e.g., pain, discomfort, or functional issues in the GI tract, developmental delay, neurological disorders
- Aversion to food/beverages in mouth, throat, or hands
- Self-limitation of foods/food groups due to food preference
- Behavioral issues including caregiver issues and eating behavior that serves a purpose other than nourishment
- Unsupported beliefs and attitudes

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
Biochemical Data, Medical Tests and Procedures	
Anthropometric Measurements	• Weight loss, insufficient growth velocity, weight gain due to reliance on low-variety or less than optimal intake
Nutrition-Focused Physical Findings	• Clinical evidence of vitamin/mineral deficiency • Erratic appetite
Food/Nutrition-Related History	Reports or observations of: • Limited food/beverage intake inconsistent with nutrition reference standards for type, variety, diet quality • Less than optimal reliance on foods, food groups, supplements, or nutrition support
Client History	• Conditions associated with a diagnosis or treatment, e.g., developmental disabilities, sensory processing issues, autism, dental caries, long-term nutrition support, prematurity, neurological disorders, altered mental state, affected brain studies (MRI)

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Limited Food Acceptance (NI-2.9)

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Updated: 2013 Edition

Inadequate* Fluid Intake (NI-3.1)

Definition

Lower intake of fluid-containing foods or substances compared to established reference standards or recommendations based on physiological needs.

Note: Whenever possible, nutrient intake data should be considered in combination with clinical, biochemical, anthropometric information, medical diagnosis, clinical status, and/or other factors as well as diet to provide a valid assessment of nutritional status based on a totality of the evidence. (Dietary Reference Intakes: Applications in Dietary Assessment. Institute of Medicine. Washington, D.C.: National Academies Press; 2000.)

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Physiological causes increasing fluid needs due to climate/temperature change, increased exercise or conditions leading to increased fluid losses, fever causing increased insensible losses, decreased thirst sensation, or use of drugs that reduce thirst
- Lack of or limited access to fluid, e.g., economic constraints, unable to access fluid independently such as elderly or children
- Cultural practices that affect the ability to access fluid
- Food- and nutrition-related knowledge deficit concerning appropriate fluid intake
- Psychological causes, e.g., depression or disordered eating
- Impaired cognitive ability, including learning disabilities, neurological or sensory impairment, and/or dementia

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
Biochemical Data, Medical Tests and Procedures	• Plasma or serum osmolality greater than 290 mOsm/kg • Abnormal BUN, Na • ↓ Urine volume • ↑ Urine specific gravity • Hyperglycemia in diabetic patient/client
Anthropometric Measurements	• Acute weight loss
Nutrition-Focused Physical Findings	• Dry skin and mucous membranes, poor skin turgor, tachycardia and normal or hypotensive blood pressure, fever, increased respirations, flattened neck veins • Thirst • Difficulty swallowing • Increased insensible loss
Food/Nutrition-Related History	Reports or observations of: • Estimated intake of fluid less than requirements (e.g., per body surface area for pediatrics) • Use of drugs that reduce thirst
Client History	• Conditions associated with a diagnosis or treatment, e.g., dementia resulting in decreased recognition of thirst, dehydration, diabetes mellitus, alterations in renal function, diarrhea, vomiting, ileostomy, colostomy, infection

Arrows used with laboratory values: ↑ represents above reference standard and ↓ represents below reference standard.

Inadequate* Fluid Intake (NI-3.1)

References

1. Institute of Medicine. *Dietary Reference Intakes for Water, Potassium, Sodium, Chloride, and Sulfate*. Washington, DC: National Academies Press; 2004.
2. Grandjean AC, Campbell SM. *Hydration: Fluids for Life*. Monograph Series. Washington DC: International Life Sciences Institute North America; 2004.
3. Grandjean AC, Reimers KJ, Buyckx ME. Hydration: issues for the 21st century. *Nutr Rev*. 2003;61:261-271.

Updated: 2013 Edition

*If a synonym for the term "inadequate" is helpful or needed, an approved alternate is the word "suboptimal."

Excessive Fluid Intake (NI-3.2)

Definition

Higher intake of fluid compared to established reference standards or recommendations based on physiological needs.

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Physiological causes, e.g., kidney, liver, cardiac, endocrine, neurological, and/or pulmonary dysfunction; diminished water and sodium losses due to changes in exercise or climate, syndrome of inappropriate antidiuretic hormone (SIADH)
- Food- and nutrition-related knowledge deficit concerning appropriate fluid intake
- Psychological causes such as depression and disordered eating

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
<i>Biochemical Data, Medical Tests and Procedures</i>	• ↓ Plasma osmolality (270-280 mOsm/kg), only if positive fluid balance is in excess of positive sodium balance • ↓ Serum sodium in SIADH • ↓ Urine specific gravity
<i>Anthropometric Measurements</i>	• Weight gain
<i>Nutrition-Focused Physical Findings</i>	• Edema in the skin of the legs, sacral area, or diffusely; weeping of fluids from lower legs • Ascites • Pulmonary edema as evidenced by shortness of breath; orthopnea; crackles or rales • Nausea, vomiting, anorexia, headache, muscle spasms, convulsions • Shortness of breath or dyspnea with exertion or at rest • Providing medications in large amounts of fluid • Use of drugs that impair fluid excretion
<i>Food/Nutrition-Related History</i>	Reports or observations of: • Estimated intake of fluid more than requirements (e.g., per body surface area for pediatrics) • Estimated salt intake in excess of recommendations
<i>Client History</i>	• Conditions associated with a diagnosis or treatment, e.g., end-stage renal disease, nephrotic syndrome, heart failure, or liver disease • Coma (SIADH)

Arrows used with laboratory values: ↑ represents above reference standard and ↓ represents below reference standard.

References

1. Institute of Medicine. *Dietary Reference Intakes for Water, Potassium, Sodium, Chloride, and Sulfate*. Washington DC: National Academies Press; 2004.
2. Schirer RW, ed. *Renal and Electrolyte Disorders*. Philadelphia, PA: Lipincott Williams and Wilkins; 2003.
3. Hyponatremia. Available at: <http://www.nlm.nih.gov/medlineplus/ency/article/000394.htm>. Accessed January 27, 2012.

Updated: 2013 Edition

Suboptimal Bioactive Substance Intake (specify) (NI-4.1)

Definition

Lower intake of bioactive substances compared to established reference standards or recommendations based on physiological needs.

Note: Bioactive substances are not part of the Dietary Reference Intakes, and therefore there are no established minimum requirements or Tolerable Upper Intake Levels. However, food and nutrition professionals can assess whether estimated intakes are adequate or excessive using the patient/client goal or nutrition prescription for comparison.

Working definition of bioactive substances—physiologically active components of foods that may have an effect on health. There is no scientific consensus about a definition for bioactive substances/components.

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Food- and nutrition-related knowledge deficit concerning recommended bioactive substance intake
- Lack of or limited access to food that contains a bioactive substance
- Alteration in gastrointestinal tract structure and/or function

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
Biochemical Data, Medical Tests and Procedures	
Anthropometric Measurements	
Nutrition-Focused Physical Findings	
Food/Nutrition-Related History	Reports or observations of: • Estimated intake of plant foods containing the following lower than recommended: • Soluble fiber, e.g., psyllium (↓ total and LDL cholesterol) • Soy protein (↓ total and LDL cholesterol) • β-glucan, e.g., whole oat products (↓ total and LDL cholesterol) • Plant sterol and stanol esters, e.g., fortified margarines (↓ total and LDL cholesterol) • Other substances (for which scientific evidence exists and a recommended intake level has been established) • Verbalizes inaccurate or incomplete knowledge about bioactive substances
Client History	• Conditions associated with a diagnosis or treatment, e.g., cardiovascular disease, elevated cholesterol

References

1. Position of the American Dietetic Association: Functional foods. *J Am Diet Assoc.* 2009;109:735-746.

Updated: 2013 Edition

Excessive Bioactive Substance Intake (specify) (NI-4.2)

Definition

Higher intake of bioactive substances compared to established reference standards or recommendations based on physiological needs.

Note: Bioactive substances are not part of the Dietary Reference Intakes, and therefore there are no established minimum requirements or Tolerable Upper Intake Levels. However, food and nutrition professionals can assess whether estimated intakes are adequate or excessive using the patient/client goal or nutrition prescription for comparison.

Working definition of bioactive substances—physiologically active components of foods that may have an effect on health. There is no scientific consensus about a definition for bioactive substances/components.

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Food- and nutrition-related knowledge deficit concerning recommended bioactive substance intake including food additives
- Contamination, misname, mislabel or lack of labeling, misuse, recent brand change, recent dose increase, recent formulation change of substance consumed
- Frequent intake of foods containing bioactive substances
- Alteration in gastrointestinal tract structure and/or function
- Lack of or limited access to appropriate foods, e.g., inadequate markets with labeled food

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
<i>Biochemical Data, Medical Tests and Procedures</i>	• Lab values indicating excessive intake of the specific substance, such as rapid ↓ in cholesterol from intake of stanol or sterol esters and a statin drug and related dietary changes or medications • ↑ Hepatic enzyme reflecting hepatocellular damage
<i>Anthropometric Measurements</i>	• Weight loss as a result of malabsorption or maldigestion
<i>Nutrition-Focused Physical Findings</i>	• Constipation, diarrhea, nausea, stomach pain, gas, cramps or bloating, vomiting, heartburn • Neurologic changes, e.g., anxiety, mental status changes • Cardiovascular changes, e.g., heart rate, blood pressure • Discomfort or pain associated with intake of foods rich in bioactive substances, e.g., soluble fiber, β-glucan, soy protein • Headache/migraine • Hives, flushing • Irritability or nervousness

Arrows used with laboratory values. ↑ represents above reference standard and ↓ represents below reference standard.

Excessive Bioactive Substance Intake (NI-4.2)

<i>Food/Nutrition-Related History</i>	Reports or observations of: • High intake of plant foods containing: • Soy protein (↓ total and LDL cholesterol) • β-glucan, e.g., whole oat products (↓ total and LDL cholesterol) • Plant sterol and stanol esters, e.g., fortified margarines (↓ total and LDL cholesterol) or other foods based on dietary substance, concentrate, metabolite, constituent, extract, or combination • Substances that interfere with digestion or absorption of foodstuffs • Ready access to available foods/products with bioactive substance, e.g., as from dietary supplement vendors • Attempts to use supplements or bioactive substances for weight loss, to treat constipation, or to prevent or cure chronic or acute disease • Other substances (for which scientific evidence exists and a recommended intake level has been established) • Intake of food additives for which patient/client is intolerant, e.g., yellow 5, yellow 6, safrole, FD&C Red #4, carmine, MSG, sulfites • Verbalizes inaccurate or incomplete knowledge about bioactive substances
<i>Client History</i>	• Conditions associated with a diagnosis or treatment, e.g., cardiovascular disease, elevated cholesterol, hypertension, asthma • Cardiovascular changes, e.g., EKG changes

References

1. Institute of Medicine. *Dietary Supplements: A Framework for Evaluating Safety*. Washington, DC: National Academies Press; 2004.
2. Position of the American Dietetic Association: Functional foods. *J Am Diet Assoc*. 2009;109:735-746.

Updated: 2013 Edition

Excessive Alcohol Intake (NI-4.3)

Definition

Intake more than the suggested limits for alcohol.

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Unsupported beliefs/attitudes about food, nutrition, and nutrition-related topics
- Food- and nutrition-related knowledge deficit concerning appropriate alcohol intake
- Lack of value for behavior change, competing values
- Alcohol addiction

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
Biochemical Data, Medical Tests and Procedures	• ↑ aspartate aminotransferase (AST), gamma-glutamyl transferase (GGT), carbohydrate-deficient transferrin, mean corpuscular volume, blood alcohol levels
Anthropometric Measurements	
Nutrition-Focused Physical Findings	
Food/Nutrition-Related History	Reports or observations of: • Intake of > 2 drinks*/day (men) • Intake of > 1 drink*/day (women) • Binge drinking • Consumption of any alcohol when contraindicated, e.g., during pregnancy <i>*1 drink = 5 oz (150 mL) wine, 12 oz (350 mL) beer, 1.5 oz (45 mL) distilled alcohol</i>
Client History	• Conditions associated with a diagnosis or treatment, e.g., severe hypertriglyceridemia, elevated blood pressure, depression, liver disease, pancreatitis • New medical diagnosis or change in existing diagnosis or condition • History of estimated alcohol intake in excess of recommended • Giving birth to an infant with fetal alcohol syndrome

Arrows used with laboratory values: ↑ represents above reference standard and ↓ represents below reference standard.

References

1. Position of the American Dietetic Association: The role of registered dietitians and dietetic technicians registered in health promotion and disease prevention. *J Am Diet Assoc.* 2006;106:1875-1884.

Updated: 2013 Edition

Increased Nutrient Needs (Specify) (NI-5.1)

Definition

Increased need for a specific nutrient compared to established reference standards or recommendations based on physiological needs.

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Altered absorption or metabolism of nutrient, e.g., from medications
- Compromise of organs related to GI function, e.g., pancreas, liver
- Decreased functional length of intestine, e.g., short-bowel syndrome
- Decreased or compromised function of intestine, e.g., celiac disease, Crohn's disease
- Increased demand for nutrient, e.g., accelerated growth, wound healing, chronic infection

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
<i>Biochemical Data, Medical Tests and Procedures</i>	• ↓ total cholesterol < 160 mg/dL, albumin, prealbumin, C-reactive protein, indicating increased stress and increased metabolic needs • Electrolyte/mineral (e.g., potassium, magnesium, phosphorus) abnormalities • Urinary or fecal losses of specific or related nutrient (e.g., fecal fat, d-xylose test) • Vitamin and/or mineral deficiency
<i>Anthropometric Measurements</i>	• Growth failure, based on reference growth standards, e.g. National Center for Health Statistics (NCHS) and fetal growth failure • Unintentional weight loss of ≥5% in 1 month or ≥10% in 6 months • Underweight (BMI < 18.5) • Low percent body fat and muscle mass
<i>Nutrition-Focused Physical Findings</i>	• Clinical evidence of vitamin/mineral deficiency (e.g., hair loss, bleeding gums, pale nail beds) • Loss of skin integrity, delayed wound healing, or pressure ulcers • Loss of muscle mass, subcutaneous fat
<i>Food/Nutrition-Related History</i>	Reports or observations of: • Estimated intake of foods/supplements containing needed nutrient less than estimated requirements • Intake of foods that do not contain sufficient quantities of available nutrient (e.g., overprocessed, overcooked, or stored improperly) • Food- and nutrition-related knowledge deficit (e.g., lack of information, incorrect information or noncompliance with intake of needed nutrient) • Medications affecting absorption or metabolism of needed nutrient • Athletes or active individuals engaged in intense physical activity
<i>Client History</i>	• Conditions associated with a diagnosis or treatment, e.g., intestinal resection, Crohn's disease, HIV/AIDS, burns, pre-term birth, malnutrition

Arrows used with laboratory values: ↑ represents above reference standard and ↓ represents below reference standard.

Increased Nutrient Needs (Specify) (NI-5.1)

References

1. Beyer P. Gastrointestinal disorders: roles of nutrition and the dietetics practitioner. *J Am Diet Assoc.* 1998;98:272-277.
2. Position of the American Dietetic Association: Nutrition intervention and human immunodeficiency virus infection. *J Am Diet Assoc.* 2010;110:1105-1119.

Updated: 2011 Edition

Malnutrition (NI-5.2)

Definition

Inadequate intake of protein and/or energy over prolonged periods of time resulting in loss of fat stores and/or muscle stores including starvation-related malnutrition, chronic disease or condition-related malnutrition and acute disease or injury-related malnutrition.

Note. The Academy and ASPEN continue to work with the National Center for Health Statistics to revise projected ICD-10 coding terminology to incorporate an etiology-based approach to malnutrition diagnosis (J Parenter Enteral Nutr. 2010;34(2):156-159). The Academy/ASPEN collaboration is in the process of developing characteristics to diagnose pediatric (ages 1-18) malnutrition.

^The Academy/ASPEN recommend a minimum of two clinical characteristics or indicators be present for diagnosis of malnutrition in adults. For additional information, visit the Academy's Web page at: <http://www.eatright.org/coverage>.

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Physiological causes increasing nutrient needs due to illness, acute or chronic or injury/trauma
- Alteration in gastrointestinal tract structure and/or function
- Lack of or limited access to food, e.g., economic constraints, restricting food given to elderly and/or children, neglect or abuse
- Cultural or religious practices that affect the ability to access food
- Food- and nutrition-related knowledge deficit concerning amount of energy and amount and type of dietary protein
- Psychological causes, e.g., depression or eating disorders

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
Biochemical Data, Medical Tests and Procedures	*
Anthropometric Measurements	• Malnutrition can occur at any weight/BMI • BMI < 18.5 indicates underweight; BMI for older adults (older than 65 years) < 22; BMI < 5th percentile in children • Failure to thrive, e.g., failure to attain desirable growth rates or developmental delay • Inadequate maternal weight gain • ^ Unintentional weight loss, adults, of > 20% in 1 year; > 10% in 6 months; > 7.5% in 3 months; > 5% in 1 month; or > 1 to 2% in 1 week • Growth, pediatrics, not gaining weight as expected and/or a shift downward in their growth percentiles, crossing two or more percentiles on their growth charts • Underweight with loss of fat and/or muscle

** In the past, hepatic transport protein measures (e.g. albumin and prealbumin) were used as indicators of malnutrition. See the Evidence Analysis Library questions on this topic at <https://www.andevidencelibrary.com/topic.cfm?cat=4302>*

Malnutrition (NI-5.2)

<i>Nutrition-Focused Physical Findings</i>	• ^Loss of subcutaneous fat, e.g., orbital, triceps, fat overlying the ribs • ^Muscle loss, e.g., wasting of the temples (temporalis muscle), clavicles (pectoralis & deltoids), shoulders (deltoids), interosseous muscles, scapula (latissimus dorsi, trapezius, deltoids), thigh (quadriceps) and calf (gastrocnemius) • ^Localized or generalized fluid accumulation (extremities, vulvar/scrotal, ascites) • Change in functional indicators, i.e., grip strength
<i>Food/Nutrition-Related History</i>	Reports or observations of: • ^Estimated energy intake < 50%-75% of estimated or measured RMR • Unable or unwilling to eat sufficient energy/protein to maintain a healthy weight • Food avoidance and/or lack of interest in food • Excessive consumption of alcohol or other drugs that reduce appetite • Change in functional indicators, e.g., grip strength or other measures of physical activity and/or strength
<i>Client History</i>	Reports or observations of the following, for example: • Anorexia nervosa, benign esophageal stricture, abuse, neglect, poverty, frailty, and anything that results in limited access to food (associated with malnutrition in the context of environmental and social circumstances) • Organ failure, malignancies, rheumatoid diseases, gastrointestinal diseases, sarcopenic obesity, malabsorptive syndromes, and other etiologies including but not limited to diabetes, congestive heart failure, and chronic obstructive pulmonary disease (associated with malnutrition in the context of chronic disease/condition) • Major infections such as; sepsis, pneumonia, peritonitis, and wound infections, major burns, trauma, closed head injury, acute lung injury, adult respiratory distress syndrome, and selected major surgeries (associated with malnutrition in the context of acute injury/illness) • Existing medical diagnosis of malnutrition including malnutrition in the context of acute injury/illness, malnutrition in the context of chronic disease/condition and malnutrition in the context of environmental and social circumstances.

^ The Academy/ASPEN recommend a minimum of two clinical characteristics or indicators be present for diagnosis of malnutrition in adults. For additional information, visit the Academy's Web page at: <http://www.eatright.org/coverage>.

References

1. Blackburn GL, Bistrian BR, Maini BS, Schlamm HT, Smith MF. Nutritional and metabolic assessment of the hospitalized patient. *J Parenter Enteral Nutr.* 1977;1:11-22.
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Intake Domain – Nutrient

Malnutrition (NI-5.2)

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12. Academy of Nutrition and Dietetics Evidence Analysis Library. Does serum albumin correlate with weight loss in four models of prolonged protein-energy restriction: anorexia nervosa, non-malabsorptive gastric partitioning bariatric surgery, calorie-restricted diets or starvation? Available at: http://www.andevidencelibrary.com/conclusion.cfm?conclusion_statement_id=251263&highlight=albumin&home=1. Accessed January 27, 2012.
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Updated: 2013 Edition

Inadequate* Protein–Energy Intake (NI-5.3)

Definition

Inadequate intake of protein and/or energy compared to established reference standards or recommendations based on physiological needs of short or recent duration.

Note: Whenever possible, nutrient intake data should be considered in combination with clinical, biochemical, anthropometric information, medical diagnosis, clinical status, and/or other factors as well as diet to provide a valid assessment of nutritional status based on a totality of the evidence. (Institute of Medicine. Dietary Reference Intakes: Applications in Dietary Assessment. Washington, DC: National Academies Press; 2000.)

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Physiological causes increasing nutrient needs due to catabolic illness, malabsorption
- Decreased ability to consume sufficient protein and/or energy
- Lack of or limited access to food, e.g., economic constraints, restricting food given or food selected
- Cultural or religious practices that affect ability to access food
- Food- and nutrition-related knowledge deficit concerning appropriate amount and type of dietary fat and/or protein
- Psychological causes such as depression and disordered eating

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
Biochemical Data, Medical Tests and Procedures	• Normal albumin (in the setting of normal liver function despite decreased protein-energy intake)
Anthropometric Measurements	• Inadequate maternal weight gain (mild but not severe) • Weight loss of 7% in 3 months, >5% in 1 month, or 1% to 2% in 1 week in adults; any weight loss or failure to gain weight in children • Growth failure in children
Nutrition-Focused Physical Findings	• Slow wound healing in pressure ulcer or surgical patient/client
Food/Nutrition-Related History	Reports or observations of: • Estimated energy intake from diet less than estimated or measured RMR or recommended levels • Restriction or omission of food groups such as dairy or meat group foods (protein); bread or milk group foods (energy) • Recent food avoidance and/or lack of interest in food • Lack of ability to prepare meals • Excessive consumption of alcohol or other drugs that reduce hunger • Hunger in the face of inadequate access to food supply

*If a synonym for the term "inadequate" is helpful or needed, an approved alternate is the word "suboptimal."

Inadequate* Protein–Energy Intake (NI-5.3)

<i>Client History</i>	• Conditions associated with a diagnosis or treatment of mild protein-energy malnutrition, recent illness (e.g., pulmonary or cardiac failure, flu, infection, surgery) • Nutrient malabsorption (e.g., bariatric surgery, diarrhea, steatorrhea) • Lack of funds for purchase of appropriate foods
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3. American Medical Association. *AMA ICD-9-CM 2007: Physician, International Classification of Diseases: Clinical Modification*. 9th rev. ed. Chicago, IL: American Medical Association; 2006.

Updated: 2011 Edition

*If a synonym for the term “inadequate” is helpful or needed, an approved alternate is the word “suboptimal.”

Decreased Nutrient Needs (Specify) (NI-5.4)

Definition

Decreased need for a specific nutrient compared to established reference standards or recommendations based on physiological needs.

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Renal dysfunction
- Liver dysfunction
- Altered cholesterol metabolism/regulation
- Heart failure
- Food intolerances, e.g., irritable bowel syndrome

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
<i>Biochemical Data, Medical Tests and Procedures</i>	• ↑ Total cholesterol > 200 mg/dL (5.2 mmol/L), ↑ LDL cholesterol > 100 mg/dL (2.59 mmol/L), ↓ HDL cholesterol < 40 mg/dL (1.036 mmol/L), ↑ triglycerides > 150 mg/dL (1.695 mmol/L) • ↑ Phosphorus > 5.5 mg/dL (1.78 mmol/L) • ↓ Glomerular filtration rate (GFR) < 90 mL/min/1.73 m² • ↑ BUN, creatinine, potassium • ↑ Liver function tests indicating severe liver disease
<i>Anthropometric Measurements</i>	• Interdialytic weight gain greater than expected
<i>Nutrition-Focused Physical Findings</i>	• Edema/fluid retention
<i>Food/Nutrition-Related History</i>	Reports or observations of: • Estimated intake higher than recommended for fat, phosphorus, sodium, protein, fiber
<i>Client History</i>	• Conditions associated with a diagnosis or treatment that require a specific type and/or amount of nutrient, e.g., cardiovascular disease (fat), early renal disease (protein, phos), ESRD (phos, sodium, potassium, fluid), advanced liver disease (protein), heart failure (sodium, fluid), irritable bowel disease/Crohn's flare up (fiber) • Diagnosis of hypertension, confusion related to liver disease

Arrows used with laboratory values: ↑ represents above reference standard and ↓ represents below reference standard.

References

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2. Beto JA, Bansal VK. Medical nutrition therapy in chronic kidney failure: integrating clinical practice guidelines. *J Am Diet Assoc.* 2004;104:404-409.
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Decreased Nutrient Needs (Specify) (NI-5.4)

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Imbalance of Nutrients (NI-5.5)

Definition

An undesirable combination of nutrients, such that the amount of one nutrient interferes with or alters absorption and/or utilization of another nutrient.

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Consumption of high-dose nutrient supplements
- Food- and nutrition-related knowledge deficit concerning nutrient interactions
- Unsupported beliefs/attitudes about food, nutrition, and nutrition-related information
- Food faddism
- Insufficient electrolyte replacement when initiating feeding (PN/EN, including oral)

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
<i>Biochemical Data, Medical Tests and Procedures</i>	• Severe hypophosphatemia (in the presence of increased carbohydrate) • Severe hypokalemia (in the presence of increased protein) • Severe hypomagnesemia (in the presence of increased carbohydrate)
<i>Anthropometric Data</i>	
<i>Nutrition-Focused Physical Findings</i>	• Diarrhea or constipation (iron supplements) • Epigastric pain, nausea, vomiting, diarrhea (zinc supplements)
<i>Food/Nutrition-Related History</i>	Reports or observations of: • Estimated intake of iron supplements (decreased zinc absorption) higher than recommended • Estimated intake of zinc supplements (decreased copper status) higher than recommended • Estimated intake of manganese (decreased iron status) higher than recommended
<i>Client History</i>	• Refeeding syndrome

References

1. Institute of Medicine. *Dietary Reference Intakes for Vitamin A, Vitamin K, Arsenic, Boron, Chromium, Copper, Iodine, Iron, Manganese, Molybdenum, Nickel, Silicon, Vanadium, Zinc*. Washington, DC: National Academies Press; 2001.
2. Institute of Medicine. *Dietary Reference Intakes for Calcium, Phosphorus, Magnesium, Vitamin D, and Fluoride*. Washington, DC: National Academies Press; 1997.
3. Institute of Medicine. *Dietary Reference Intakes for Calcium and Vitamin D*. Washington, DC: National Academies Press; 2010.

Updated: 2013 Edition

Inadequate* Fat Intake (NI-5.6.1)

Definition

Lower fat intake compared to established reference standards or recommendations based on physiological needs.

Note: May not be an appropriate nutrition diagnosis when the goal is weight loss or during end-of-life care.

Whenever possible, nutrient intake data should be considered in combination with clinical, biochemical, anthropometric information, medical diagnosis, clinical status, and/or other factors as well as diet to provide a valid assessment of nutritional status based on a totality of the evidence. (Dietary Reference Intakes: Applications in Dietary Assessment. Institute of Medicine. Washington, D.C.: National Academies Press; 2000).

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Alteration in gastrointestinal tract structure and/or function
- Less than optimal food choices, e.g., economic constraints, restricting food given to elderly and/or children, specific food choices
- Cultural practices that affect ability to make appropriate food choices
- Food- and nutrition-related knowledge deficit concerning appropriate amount of dietary fat
- Psychological causes such as depression and disordered eating

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
Biochemical Data, Medical Tests and Procedures	• ↑ Triene:tetraene ratio > 0.2
Anthropometric Measurements	• Impaired growth • Weight loss if insufficient calories/kcal/kJ consumed
Nutrition-Focused Physical Findings	• Scaly skin and dermatitis consistent with essential fatty acid deficiency
Food/Nutrition-Related History	Reports or observations of: • Estimated intake of essential fatty acids less than 10% of energy (primarily associated with parenteral nutrition) • Verbalizes inaccurate or incomplete knowledge • Cultural or religious practices that affect intake
Client History	• Conditions associated with a diagnosis or treatment, e.g., prolonged catabolic illness (e.g., AIDS, tuberculosis, anorexia nervosa, sepsis or severe infection from recent surgery) • Severe fat malabsorption with bowel resection, pancreatic insufficiency, or hepatic disease accompanied by steatorrhea

Arrows used with laboratory values: ↑ represents above reference standard and ↓ represents below reference standard.

References

1. Institute of Medicine. *Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein, and Amino Acids*. Washington, DC: National Academies Press; 2002.

Updated: 2013 Edition

*If a synonym for the term "inadequate" is helpful or needed, an approved alternate is the word "suboptimal."

Excessive Fat Intake (NI-5.6.2)

Definition

Higher fat intake compared to established reference standards or recommendations based on physiological needs.

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Food- and nutrition-related knowledge deficit concerning appropriate amount of dietary fat
- Unsupported beliefs/attitudes about food, nutrition, and nutrition-related topics
- Lack of or limited access to healthful food choices, e.g., healthful food choices not provided as an option by caregiver or parent, homeless
- Changes in taste and appetite or preference
- Lack of value for behavior change, competing values
- Physiological causes decreasing total fat needs or recommendations

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
<i>Biochemical Data, Medical Tests and Procedures</i>	• ↑ Cholesterol > 200 mg/dL (5.2 mmol/L), ↑ LDL cholesterol > 100 mg/dL (2.59 mmol/L), ↓ HDL cholesterol < 40 mg/dL (1.036 mmol/L), ↑ triglycerides > 150 mg/dL (1.695 mmol/L) • ↑ Serum amylase and/or lipase • ↑ LFTs, T. bilirubin • ↑ Fecal fat > 7g/24 hours
<i>Anthropometric Measurements</i>	
<i>Nutrition-Focused Physical Findings</i>	• Evidence of xanthomas • Diarrhea, cramping, steatorrhea, epigastric pain
<i>Food/Nutrition-Related History</i>	Reports or observations of: • Frequent or large portions of high-fat foods • Frequent food preparation with added fat • Frequent consumption of high-risk lipids (i.e., saturated fat, <i>trans</i> fat, cholesterol) • Report of foods containing fat more than diet prescription • Medication, e.g., pancreatic enzymes, cholesterol- or other lipid-lowering medications • Verbalizes inaccurate or incomplete knowledge • Verbalizes unsupported beliefs and attitudes
<i>Client History</i>	• Conditions associated with a diagnosis or treatment, e.g., hyperlipidemia; cystic fibrosis; angina; atherosclerosis; pancreatic; liver; and biliary diseases; post-transplantation, chyle fluid leak • Family history of hyperlipidemia, atherosclerosis, or pancreatitis

Arrows used with laboratory values: ↑ represents above reference standard and ↓ represents below reference standard.

Excessive Fat Intake (NI-5.6.2)

References

1. Institute of Medicine. *Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein, and Amino Acids*. Washington, DC: National Academies Press; 2002.
2. Position of the American Dietetic Association. Weight management. *J Am Diet Assoc*. 2002;102:1145-1155.
3. Position of the American Dietetic Association. Total diet approach to communicating food and nutrition information. *J Am Diet Assoc*. 2007;107:1224-1232.
4. Position of the American Dietetic Association. The role of registered dietitians and dietetic technicians registered in health promotion and disease prevention. *J Am Diet Assoc*. 2006;106:1875-1884.

Updated: 2013 Edition

Less than Optimal Intake of Types of Fats (Specify) (NI-5.6.3)

Definition

Intake of wrong type or quality of fats compared to established reference standards or recommendations based on physiological needs.

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Food- and nutrition-related knowledge deficit concerning type of fat (e.g., fats added to food, formula/breast-milk)
- Unsupported beliefs/attitudes about food, nutrition, and nutrition-related topics
- Lack of or limited access to healthful food choices, e.g., healthful food choices not provided as an option by caregiver or parent, homeless
- Changes in taste and appetite or preference
- Lack of value for behavior change, competing values
- Physiological causes altering fatty acid needs or recommendations

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
<i>Biochemical Data, Medical Tests and Procedures</i>	• ↑ Cholesterol > 200 mg/dL (5.2 mmol/L), ↑ LDL cholesterol > 100 mg/dL (2.59 mmol/L), ↓ HDL cholesterol < 40 mg/dL (1.036 mmol/L) men, ↓ HDL cholesterol < 50 mg/dL (1.3 mmol/L) women, ↑ triglycerides > 150 mg/dL (1.695 mmol/L) • ↑ Serum amylase and/or lipase • ↑ LFTs, T. bilirubin, C-reactive protein
<i>Anthropometric Measurements</i>	
<i>Nutrition-Focused Physical Findings</i>	• Evidence of dermatitis • Diarrhea, cramping, steatorrhea, epigastric pain
<i>Food/Nutrition-Related History</i>	Reports or observations of: • Frequent food preparation with added fat that is not of desired type for condition • Frequent consumption of fats that are undesirable for condition (e.g., saturated fat, <i>trans</i> fat, cholesterol, n-6 fatty acids, long-chain fatty acids) • Estimated intake of monounsaturated, polyunsaturated, n-3 fatty acids, or DHA/ARA less than recommended or in suboptimal ratio • Verbalizes inaccurate or incomplete knowledge • Verbalizes unsupported beliefs and attitudes
<i>Client History</i>	• Conditions associated with a diagnosis or treatment, e.g., diabetes, cardiac diseases, obesity, liver or biliary disorders, chyle fluid leak • Family history of diabetes-related heart disease, hyperlipidemia, atherosclerosis, or pancreatitis

Arrows used with laboratory values: ↑ represents above reference standard and ↓ represents below reference standard.

Less than Optimal Intake of Types of Fats (Specify) (NI-5.6.3)

References

1. de Lorgeril M, Salen P, Martin J-L, Monjaud I, Delaye J, Mamelle N. Mediterranean diet, traditional risk factors, and the rate of cardiovascular complications after myocardial infarction: Final report of the Lyon Diet Heart Study. *Circulation*. 1999;99:779-785.
2. Franz MJ, Bantle JP, Beebe CA, Brunzell JD, Chiasson J-L, Garg A, Holzmeister LA, Hoogwerf B, Mayer-Davis E, Mooradian AD, Purnell JQ, Wheeler M. Technical review. Evidence-based nutrition principles and recommendations for the treatment and prevention of diabetes and related complications. *Diabetes Care*. 2002;202:148-198.
3. Knoops KTB, de Groot LC, Kromhout D, Perrin A-E, Varela M-V, Menotti A, van Staveren WA. Mediterranean diet, lifestyle factors, and 10-year mortality in elderly European men and women. *JAMA*. 2004;292:1433-1439.
4. Kris-Etherton PM, Harris WS, Appel LJ, for the Nutrition Committee. AHA scientific statement. Fish consumption, fish oil, omega-3 fatty acids, and cardiovascular disease. *Circulation*. 2002;106:2747-2757.
5. Institute of Medicine. *Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein, and Amino Acids*. Washington, DC: National Academies Press; 2002.
6. Panagiotakos DB, Pitsavos C, Polychronopoulos E, Chrysohou C, Zampelas A, Trichopoulos A. Can a Mediterranean diet moderate the development and clinical progression of coronary heart disease? A systematic review. *Med Sci Monit*. 2004;10:RA193-RA198.
7. Position of the American Dietetic Association. Weight management. *J Am Diet Assoc*. 2009;109:330-346.
8. Position of the American Dietetic Association. Total diet approach to communicating food and nutrition information. *J Am Diet Assoc*. 2007;107:1224-1232.
9. Position of the American Dietetic Association. The role of registered dietitians and dietetic technicians registered in health promotion and disease prevention. *J Am Diet Assoc*. 2006;106:1875-1884.
10. Zhao G, Etherton TD, Martin KR, West SG, Gilles PJ, Kris-Etherton PM. Dietary alpha-linolenic acid reduces inflammatory and lipid cardiovascular risk factors in hypercholesterolemic men and women. *J Nutr*. 2004;134:2991-2997.

Updated: 2013 Edition

Inadequate* Protein Intake (NI-5.7.1)

Definition

Lower intake of protein compared to established reference standards or recommendations based on physiological needs.

Note: Whenever possible, nutrient intake data should be considered in combination with clinical, biochemical, anthropometric information, medical diagnosis, clinical status, and/or other factors as well as diet to provide a valid assessment of nutritional status based on a totality of the evidence. (Institute of Medicine. Dietary Reference Intakes: Applications in Dietary Assessment. Washington, DC: National Academies Press; 2000.)

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Physiological causes increasing nutrient needs due to prolonged catabolic illness, malabsorption, age, or condition
- Decreased ability to consume sufficient protein
- Lack of or limited access to food, e.g., economic constraints, restricting food given to elderly and/or children
- Cultural practices that affect the ability to access food
- Food- and nutrition-related knowledge deficit concerning amount of protein
- Psychological causes such as depression and disordered eating

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
Biochemical Data, Medical Tests and Procedures	
Anthropometric Measurements	
Nutrition-Focused Physical Findings	• Edema, failure to thrive (infants/children), poor musculature, dull skin, thin and fragile hair
Food/Nutrition-Related History	Reports or observation of: • Estimated intake of protein insufficient to meet requirements • Cultural or religious practices that limit protein intake • Economic constraints that limit food availability • Prolonged adherence to a very low-protein weight-loss diet • Verbalizes inaccurate or incomplete knowledge
Client History	• Conditions associated with a diagnosis or treatment, e.g., severe protein malabsorption such as bowel resection

References

1. Institute of Medicine. *Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein, and Amino Acids*. Washington DC: National Academies Press; 2002.

Updated: 2011 Edition

**If a synonym for the term "inadequate" is helpful or needed, an approved alternate is the word "suboptimal."*

Excessive Protein Intake (NI-5.7.2)

Definition

Intake more than the recommended level of protein compared to established reference standards or recommendations based on physiological needs.

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Liver dysfunction
- Renal dysfunction
- unsupported beliefs/attitudes about food, nutrition, and nutrition-related topics
- Food and nutrition-related knowledge deficit
- Lack of, or limited access to specialized protein products
- Metabolic abnormality
- Food faddism

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
<i>Biochemical Data, Medical Tests and Procedures</i>	• Altered laboratory values, e.g., ↑ BUN, ↓ glomerular filtration rate (altered renal status)
<i>Anthropometric Measurements</i>	• Growth stunting or failure based on National Center for Health Statistics growth charts (metabolic disorders)
<i>Nutrition-Focused Physical Findings</i>	
<i>Food/Nutrition-Related History</i>	Reports or observations of: • Estimated total protein intake higher than recommended, e.g., early renal disease, advanced liver disease with confusion • Less than optimal supplementation • Verbalizes inaccurate or incomplete knowledge • Verbalizes unsupported beliefs and attitudes
<i>Client History</i>	• Conditions associated with a diagnosis or treatment, e.g., early renal disease or advanced liver disease with confusion

Arrows used with laboratory values: ↑ represents above reference standard and ↓ represents below reference standard.

Excessive Protein Intake (NI-5.7.2)

References

1. Position of the American Dietetic Association. Food and nutrition misinformation. *J Am Diet Assoc.* 2006;106:601-607.
2. Beto JA, Bansal VK. Medical nutrition therapy in chronic kidney failure: integrating clinical practice guidelines. *J Am Diet Assoc.* 2004;104:404-409.
3. Brandle E, Sieberth HG, Hautmann RE. Effect of chronic dietary protein intake on the renal function in healthy subjects. *Eur J Clin Nutr.* 1996;50:734-740.
4. Frassetto LA, Todd KM, Morris RC Jr, Sebastian A. Estimation of net endogenous noncarbonic acid production in humans from diet, potassium and protein contents. *Am J Clin Nutr.* 1998;68:576-583.
5. Friedman N, ed. *Absorption and Utilization of Amino Acids*. Vol. I. Boca Raton, FL: CRC Press; 1989:229-242.
6. Hoogeveen EK, Kostense PJ, Jager A, Heine RJ, Jakobs C, Bouter LM, Donker AJ, Stehouwer CD. Serum homocysteine level and protein intake are related to risk of microalbuminuria: the Hoorn study. *Kidney Int.* 1998;54:203-209.
7. Rudman D, DiFulco TJ, Galambos JT, Smith RB, Salam AA, Warren WD. Maximum rate of excretion and synthesis of urea in normal and cirrhotic subjects. *J Clin Invest.* 1973;52:2241-2249.

Updated: 2013 Edition

Less than Optimal Intake of Types of Proteins or Amino Acids (Specify) (NI-5.7.3)

Definition

Intake of an amount of a specific type of protein or amino acid compared to established reference standards or recommendations based on physiological needs.

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Liver dysfunction
- Renal dysfunction
- Unsupported beliefs/attitudes about food, nutrition, and nutrition-related topics
- Misused specialized protein products
- Metabolic abnormality
- Food faddism
- Inborn errors of metabolism
- Celiac disease, dermatitis herpetiformis
- Cultural or religious practices that affect the ability to regulate types of protein or amino acids consumed
- Food- and nutrition-related knowledge deficit concerning an appropriate amount of a specific types of proteins or amino acids
- Food and nutrition compliance limitations, e.g., lack of willingness or failure to modify protein or amino acid intake in response to recommendations from a dietitian, physician, or caregiver

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
<i>Biochemical Data, Medical Tests and Procedures</i>	Altered laboratory values, e.g., ↑ BUN, ↓ glomerular filtration rate (altered renal status) • ↑ specific amino acids (inborn errors of metabolism) • ↑ homocysteine or ammonia • Positive autoantibody levels (Anti-tTG antibodies, EmA IgA tissue transglutaminase [tTG] and IgA endomysial antibodies [EMA]) • Positive small bowel biopsy for celiac disease
<i>Anthropometric Measurements</i>	• Weight loss, inability to gain weight, delayed growth
<i>Nutrition-Focused Physical Findings</i>	• Physical or neurological changes (inborn errors of metabolism) • Diarrhea in response to certain types of carbohydrates • Abdominal pain, distention, constipation, reflux, GERD

Arrows used with laboratory values: ↑ represents above reference standard and ↓ represents below reference standard.

Less than Optimal Intake of Types of Proteins or Amino Acids (Specify) (NI-5.7.3)

<i>Food/Nutrition-Related History</i>	Reports or observation of: • Estimated protein or amino acid intake higher than recommended, e.g., early renal disease, advanced liver disease, inborn error of metabolism, celiac disease, food allergy or intolerance • Estimated intake of certain types of proteins or amino acids higher than recommended for prescribed parenteral and enteral nutrition therapy • Less than optimal amino acid or protein supplementation, as for athletes • Estimated amino acid intake higher than recommended, e.g., excess phenylalanine intake • Limited knowledge of protein or amino acid composition of foods or of protein or amino acid metabolism • Chronic use of medications containing proteins not recommended
<i>Client History</i>	• Conditions associated with a diagnosis or treatment of illness that requires EN/PN therapy, celiac disease, dermatitis herpetiformis, allergies, inborn errors of metabolism • History of inborn error of metabolism • Uremia, azotemia (renal patients)

References

1. Academy of Nutrition and Dietetics. Celiac Disease Evidenced-based Nutrition Practice Guideline. Available at: <http://www.andevidence.library.com/topic.cfm?cat=3677>. Accessed January 26, 2012.
2. Bearzi I, Fasano A. A prospective, double-blind, placebo-controlled trial to establish a safe gluten threshold for patients with celiac disease. *Am J Clin Nutr* 2007;85:160-166.
3. Beto JA, Bansal VK. Medical nutrition therapy in chronic kidney failure: integrating clinical practice guidelines. *J Am Diet Assoc*. 2004;104:404-409.
4. Brandle E, Sieberth HG, Hautmann RE. Effect of chronic dietary protein intake on the renal function in healthy subjects. *Eur J Clin Nutr*. 1996;50:734-740.
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8. Friedman N, ed. *Absorption and Utilization of Amino Acids*. Vol. I. Boca Raton, FL: CRC Press;1989:229-242.
9. Green PH, Cellier C. Celiac disease. *N Engl J Med*. 2007;357:1731-1743.
10. Hoogeveen EK, Kostense PJ, Jager A, Heine RJ, Jakobs C, Bouter LM, Donker AJ, Stehouwer CD. Serum homocysteine level and protein intake are related to risk of microalbuminuria: the Hoorn study. *Kidney Int*. 1998;54:203-209.
11. Hutchinson JM, Robins G, Howdle PD. Advances in coeliac disease. *Curr Opin Gastroenterol*. 2008;24:129-134.
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13. Position of the American Dietetic Association: Food and nutrition misinformation. *J Am Diet Assoc*. 2006;106:601-607.
14. Rudman D, DiFulco TJ, Galambos JT, Smith RB, Salam AA, Warren WD. Maximal rate of excretion and synthesis of urea in normal and cirrhotic subjects. *J Clin Invest*. 1973;52:2241-2249.

Updated: 2013 Edition

Inadequate* Carbohydrate Intake (NI-5.8.1)

Definition

Lower intake of carbohydrate compared to established reference standards or recommendations based on physiological needs.

Note: Whenever possible, nutrient intake data should be considered in combination with clinical, biochemical, anthropometric information, medical diagnosis, clinical status, and/or other factors as well as diet to provide a valid assessment of nutritional status based on a totality of the evidence. (Institute of Medicine. Dietary Reference Intakes: Applications in Dietary Assessment. Washington, DC: National Academies Press; 2000.)

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Physiological causes, e.g., increased energy needs due to increased activity level or metabolic change, malabsorption
- Lack of or limited access to food, e.g., economic constraints, restricting food given to elderly and/or children
- Cultural practices that affect the ability to access food
- Food- and nutrition-related knowledge deficit concerning appropriate amount of dietary carbohydrate
- Psychological causes such as depression and disordered eating

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
Biochemical Data, Medical Tests and Procedures	
Anthropometric Measurements	
Nutrition-Focused Physical Findings	• Ketone smell on breath
Food/Nutrition-Related History	Reports or observation of: • Estimated carbohydrate intake less than recommended amounts • Inability to independently consume foods/fluids, e.g., diminished mobility in hand, wrist, or digits • Verbalizes inaccurate or incomplete knowledge
Client History	• Conditions associated with a diagnosis or treatment, e.g., pancreatic insufficiency, hepatic disease, celiac disease, seizure disorder, or carbohydrate malabsorption

Diagnosis

References

1. Institute of Medicine. *Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein, and Amino Acids*. Washington, DC: National Academies Press; 2002.

Updated: 2013 Edition

*If a synonym for the term "inadequate" is helpful or needed, an approved alternate is the word "suboptimal."

Excessive Carbohydrate Intake (NI-5.8.2)

Definition

Intake more than the recommended level and type of carbohydrate compared to established reference standards or recommendations based on physiological needs.

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Physiological causes requiring modified carbohydrate intake, e.g., diabetes mellitus, lactase deficiency, sucrase-isomaltase deficiency, aldolase-B deficiency
- Cultural practices that affect the ability to reduce carbohydrate intake
- Food- and nutrition-related knowledge deficit concerning appropriate amount of carbohydrate intake
- Food and nutrition compliance limitations, e.g., lack of willingness or failure to modify carbohydrate intake in response to recommendations from a dietitian or physician
- Psychological causes such as depression and disordered eating

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
Biochemical Data, Medical Tests and Procedures	• Hyperglycemia (↑ fasting blood glucose > 126 mg/dL) • ↑ Hemoglobin A1C > 6% • ↑ Oral glucose tolerance test (2-hour post load glucose > 200 mg/dL)
Anthropometric Measurements	
Nutrition-Focused Physical Findings	• Dental caries • Diarrhea in response to carbohydrate feeding
Food/Nutrition-Related History	Reports or observation of: • Cultural or religious practices that do not support modification of dietary carbohydrate intake • Estimated carbohydrate intake that is consistently more than recommended amounts • Chronic use of medications that cause hyperglycemia, e.g., steroids • Verbalizes inaccurate or incomplete knowledge
Client History	• Conditions associated with a diagnosis or treatment, e.g., diabetes mellitus, inborn errors of carbohydrate metabolism, lactase deficiency, severe infection, sepsis, or obesity • Pancreatic insufficiency resulting in reduced insulin production • Economic constraints that limit availability of appropriate foods

Arrows used with laboratory values: ↑ represents above reference standard and ↓ represents below reference standard.

References

1. Bowman BA, Russell RM. *Present Knowledge in Nutrition*. 8th ed. Washington, DC: ILSI Press; 2001.
2. Clement S, Braithwaite SS, Magee MF, Ahmann A, Smith EP, Schafer RG, Hirsch IB, American Diabetes Association Diabetes in Hospitals Writing Committee. Management of diabetes in hospitals. *Diabetes Care*. 2004;27:553-592.
3. Institute of Medicine. *Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein, and Amino Acids*. Washington, DC: National Academies Press; 2002.
4. American Diabetes Association. Standards of medical care in diabetes—2012. *Diabetes Care*. 2012;35:S11-S63.

Less than Optimal Intake of Types of Carbohydrates (Specify) (NI-5.8.3)

Definition

Intake of an amount of a specific type of carbohydrate compared to the established reference standards or recommendations based on physiological needs.

Note: Types of carbohydrate can refer generally to sugars, starch and fiber or specific carbohydrates (e.g., sucrose, fructose, lactose). Intolerance to the protein component of grains (e.g., gluten) should be documented using the Less than optimal intake of types of proteins or amino acids (NI-5.7.3) reference sheet.

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Physiological causes requiring careful use of modified carbohydrate, e.g., intolerance, inborn errors of carbohydrate metabolism.
Note. Although research does not support restriction of individual types of carbohydrate for glycemic control, food and nutrition professionals may determine that restriction is warranted in unique patient/client situations for glycemic control and/or for other reasons, such as promotion of healthful eating.
- Cultural or religious practices that affect the ability to regulate types of carbohydrate consumed
- Food- and nutrition-related knowledge deficit concerning an appropriate amount of a specific type of carbohydrate
- Food and nutrition compliance limitations, e.g., lack of willingness or failure to modify carbohydrate intake in response to recommendations from a dietitian, physician, or caregiver
- Psychological causes such as depression and disordered eating

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
Biochemical Data, Medical Tests and Procedures	• Hypoglycemia or hyperglycemia
Anthropometric Measurements	• Weight loss, inability to gain weight, delayed growth
Nutrition-Focused Physical Findings	• Diarrhea in response to certain types of carbohydrates • Abdominal pain, distention, constipation, reflux, GERD
Food/Nutrition-Related History	Reports or observations of: • Carbohydrate intake that is a different type or exceeds amount recommended for that specific type of carbohydrate • Limited knowledge of carbohydrate composition of foods or of carbohydrate metabolism • Chronic use of medications that cause altered glucose levels, e.g., steroids, antidepressants, antipsychotics, or contains a type of carbohydrate not recommended • Cultural or religious practices that affect intake
Client History	• Conditions associated with a diagnosis or treatment, e.g., intolerance, inborn errors of metabolism • Allergic reactions or intolerance to certain carbohydrate foods or food groups • Economic constraints that limit availability of appropriate foods

Less than Optimal Intake of Types of Carbohydrates (Specify) (NI-5.8.3)

References

1. American Diabetes Association, Bantle JP, Wylie-Rosett J, Albright AL, Apovian CM, Clark NG, Franz MJ, Hoogwerf BJ, Lichtenstein AH, Mayer-Davis E, Mooradian AD, Wheeler ML. Nutrition recommendations and interventions for diabetes: A position statement of the American Diabetes Association. *Diabetes Care*. 2008; 1(31):S61-S78.
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Updated: 2013 Edition

Inconsistent Carbohydrate Intake (NI-5.8.4)

Definition

Inconsistent timing of carbohydrate intake throughout the day, day to day, or a pattern of carbohydrate intake that is not consistent with recommended pattern based on physiological or medication needs.

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Physiological causes requiring careful timing and consistency in the amount of carbohydrate, e.g., diabetes mellitus, hypoglycemia, PN/EN delivery
- Cultural practices that affect the ability to regulate timing of carbohydrate consumption
- Food- and nutrition-related knowledge deficit concerning appropriate timing of carbohydrate intake
- Food and nutrition compliance limitations, e.g., lack of willingness or failure to modify carbohydrate timing in response to recommendations from a dietitian, physician, or caregiver
- Psychological causes such as depression and disordered eating

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
Biochemical Data, Medical Tests and Procedures	• Hypoglycemia or hyperglycemia documented on regular basis associated with inconsistent carbohydrate intake • Wide variations in blood glucose levels
Anthropometric Measurements	
Nutrition-Focused Physical Findings	
Food/Nutrition-Related History	Reports or observations of: • Estimated carbohydrate intake that is different from recommended types or ingested on an irregular basis • Use of insulin or insulin secretagogues • Chronic use of medications that cause altered glucose levels, e.g., steroids, antidepressants, antipsychotics • Verbalizes inaccurate or incomplete knowledge • Cultural or religious practices that affect intake
Client History	• Conditions associated with a diagnosis or treatment, e.g., diabetes mellitus, obesity, metabolic syndrome, hypoglycemia • Economic constraints that limit availability of appropriate foods

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Inconsistent Carbohydrate Intake (NI-5.8.4)

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Updated: 2013 Edition

Inadequate* Fiber Intake (NI-5.8.5)

Definition

Lower intake of fiber compared to established reference standards or recommendations based on physiological needs.

Note: Whenever possible, nutrient intake data should be considered in combination with clinical, biochemical, anthropometric information, medical diagnosis, clinical status, and/or other factors as well as diet to provide a valid assessment of nutritional status based on a totality of the evidence. (Institute of Medicine. Dietary Reference Intakes: Applications in Dietary Assessment. Washington, DC: National Academies Press; 2000.)

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Lack of or limited access to fiber-containing foods/fluids
- Food- and nutrition-related knowledge deficit concerning desirable quantities of fiber
- Psychological causes such as depression and disordered eating
- Prolonged adherence to a low-fiber or low-residue diet
- Difficulty chewing or swallowing high-fiber foods
- Economic constraints that limit availability of appropriate foods
- Inability or unwillingness to purchase or consume fiber-containing foods
- Less than optimal food-preparation practices, e.g., reliance on overprocessed, overcooked foods

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
Biochemical Data, Medical Tests and Procedures	
Anthropometric Measurements	
Nutrition-Focused Physical Findings	• Inadequate fecal bulk
Food/Nutrition-Related History	Reports or observations of: • Estimated intake of fiber that is insufficient when compared to recommended amounts (38 g/day for men and 25 g/day for women) • Verbalizes inaccurate or incomplete knowledge
Client History	• Conditions associated with a diagnosis or treatment, e.g., ulcer disease, inflammatory bowel disease, or short-bowel syndrome treated with a low-fiber diet

Diagnosis

References

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Updated: 2013 Edition

*If a synonym for the term "inadequate" is helpful or needed, an approved alternate is the word "suboptimal."

Excessive Fiber Intake (NI-5.8.6)

Definition

Higher intake of fiber compared to recommendations based on patient/client condition.

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Food- and nutrition-related knowledge deficit concerning desirable quantities of fiber
- Unsupported beliefs or attitudes about food- or nutrition-related topics, e.g., obsession with bowel frequency and habits
- Lack of knowledge about appropriate fiber intake for condition
- Food preparation or eating patterns that involve only high-fiber foods to the exclusion of other nutrient-dense foods

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
<i>Biochemical Data, Medical Tests and Procedures</i>	
<i>Anthropometric Measurements</i>	
<i>Nutrition-Focused Physical Findings</i>	• Nausea, vomiting, excessive flatulence, diarrhea, abdominal cramping, high stool volume or frequency that causes discomfort to the individual
<i>Food/Nutrition-Related History</i>	Reports or observations of: • Estimated fiber intake higher than tolerated or generally recommended for current medical condition • Verbalizes inaccurate or incomplete knowledge • Verbalizes unsupported beliefs and attitudes
<i>Client History</i>	• Conditions associated with a diagnosis or treatment, e.g., ulcer disease, irritable bowel syndrome, inflammatory bowel disease, short-bowel syndrome, diverticulitis, obstructive constipation, prolapsing hemorrhoids, gastrointestinal stricture, eating disorders, or mental illness with obsessive-compulsive tendencies • Obstruction, phytobezoar

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1. DiPalma JA. Current treatment options for chronic constipation. *Rev Gastroenterol Disord.* 2004;2:S34-S42.
2. Higgins PD, Johanson JF. Epidemiology of constipation in North America: a systematic review. *Am J Gastroenterol.* 2004;99:750-759.
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Updated: 2013 Edition

Inadequate* Vitamin Intake (Specify) (NI-5.9.1)

Definition

Lower intake of one or more vitamins compared to established reference standards or recommendations based on physiological needs.

Note: Whenever possible, nutrient intake data should be considered in combination with clinical, biochemical, anthropometric information, medical diagnosis, clinical status, and/or other factors as well as diet to provide a valid assessment of nutritional status based on a totality of the evidence. (Institute of Medicine. Dietary Reference Intakes: Applications in Dietary Assessment. Washington, DC: National Academies Press; 2000.)

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Physiological causes increasing nutrient needs, e.g., due to prolonged catabolic illness, disease state, malabsorption, or medications
- Decreased ability to consume sufficient amount of a vitamin(s)
- Lack of or limited access to food, e.g., economic constraints, restricting food given to elderly and/or children
- Cultural practices that affect ability to access food
- Food- and nutrition-related knowledge deficit concerning food and supplemental sources of vitamins
- Psychological causes, e.g., depression or eating disorders
- Access causes including season, geography, limited access to sunlight

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
Biochemical Data, Medical Tests and Procedures	• Vitamin A: ↓ serum retinol < 10 µg/dL (0.35 µmol/L) • Vitamin C: ↓ plasma concentrations < 0.2 mg/dL (11.4 µmol/L) • Vitamin D: ↓ 25(OH)D < 50 nmol/L, ↓ ionized calcium < 3.9 mg/dL (0.98 mmol/L) with ↑ parathyroid hormone, normal serum calcium, and ↓ serum phosphorus < 2.6 mg/dL (0.84 mmol/L) • Vitamin E: ↓ plasma alpha-tocopherol < 18 µmol/g (41.8 µmol/L) • Vitamin K: ↑ prothrombin time; altered INR (without anticoagulation therapy) • Thiamin: ↑ erythrocyte transketolase activity > 1.20 µg/mL/h • Riboflavin: ↑ erythrocyte glutathione reductase > 1.2 IU/g hemoglobin • Niacin: ↓ N'-methyl-nicotinamide excretion < 5.8 µmol/day • Vitamin B-6: ↓ plasma pyridoxal 5'-phosphate < 5 ng/mL (20 nmol/L) • Vitamin B-12: ↓ serum concentration < 24.4 ng/dL (180 pmol/L); ↑ homocysteine • Folic acid: ↓ serum concentration < 0.3 µg/dL (7 nmol/L); ↓ red cell folate < 315 nmol/L • Pantothenic acid: ↓ plasma • Biotin: ↓ serum

Arrows used with laboratory values: ↑ represents above reference standard and ↓ represents below reference standard.

*If a synonym for the term "inadequate" is helpful or needed, an approved alternate is the word "suboptimal."

Inadequate* Vitamin Intake (Specify) (NI-5.9.1)

Anthropometric Measurements	
Nutrition-Focused Physical Findings	• Vitamin A: night blindness, Bitot's spots, xerophthalmia, follicular hyperkeratosis • Vitamin C: follicular hyperkeratosis, petichiae, ecchymosis, coiled hairs, inflamed and bleeding gums, perifollicular hemorrhages, joint effusions, arthralgia, and impaired wound healing • Vitamin D: widening at ends of long bones • Riboflavin: sore throat, hyperemia, edema of pharyngeal and oral mucous membranes, cheilosis, angular stomatitis, glossitis, magenta tongue, seborrheic dermatitis, and normochromic, normocytic anemia with pure erythrocyte cytoplasmia of the bone marrow • Niacin: symmetrical, pigmented rash on areas exposed to sunlight; bright red tongue • Vitamin B-6: seborrheic dermatitis, stomatitis, cheilosis, glossitis, confusion, depression • Vitamin B-12: tingling and numbness in extremities, diminished vibratory and position sense, motor disturbances including gait disturbances • Pantothenic acid: irritability and restlessness, fatigue, apathy, malaise, sleep disturbances, nausea, vomiting, abdominal cramps, numbness, muscle cramps, hypoglycemia, sensitivity to insulin • Biotin: dermatitis, conjunctivitis, alopecia, depression, lethargy, hallucinations and paresthesia, hypotonia, developmental delays
Food/Nutrition-Related History	Reports or observations of: • Estimated intake of foods containing specific vitamins less than requirements or recommended level • Intake of foods that do not contain available vitamins, e.g., over processed, overcooked, or improperly stored foods • Prolonged use of substances known to increase vitamin requirements or reduce vitamin absorption • Lack of interest in foods
Client History	• Conditions associated with a diagnosis or treatment, e.g., malabsorption as a result of celiac disease, short-bowel syndrome, or inflammatory bowel • Certain environmental conditions, e.g., infants exclusively fed breastmilk with limited exposure to sunlight (Vitamin D) • History of chronic kidney disease (decreased conversion of 25(OH)D) • Premature infant, extremely low-birth-weight infant (vitamin D) • Rachitic rosary in children, rickets, osteomalacia • Pellegra • Vitamin/mineral deficiency

*If a synonym for the term "inadequate" is helpful or needed, an approved alternate is the word "suboptimal."

Inadequate* Vitamin Intake (Specify) (NI-5.9.1)

References

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Updated: 2013 Edition

*If a synonym for the term "inadequate" is helpful or needed, an approved alternate is the word "suboptimal."

Excessive Vitamin Intake (Specify) (NI-5.9.2)

Definition

Higher intake of one or more vitamins compared to established reference standards or recommendations based on physiological needs.

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Physiological causes decreasing nutrient needs due to prolonged immobility or chronic renal disease
- Access to foods and supplements in excess of needs, e.g., cultural or religious practices; less-than-optimal food and supplements given to pregnant women, elderly, or children
- Food- and nutrition-related knowledge deficit concerning food and supplemental sources of vitamins
- Psychological causes, e.g., depression or eating disorders
- Accidental overdose from oral and supplemental forms, enteral or parenteral sources

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
<i>Biochemical Data, Medical Tests and Procedures</i>	• Vitamin D: ↑ 25(OH) D, ↑ ionized calcium > 5.4 mg/dL (1.35 mmol/L) with ↑ parathyroid hormone, normal or ↑ serum calcium, and ↑ serum phosphorus > 2.6 mg/dL (0.84 mmol/L) • Vitamin K: ↓ prothrombin time or altered INR • Niacin: ↑ N'methyl-nicotinamide excretion > 7.3 μmol/day • Vitamin B-6: ↑ plasma pyridoxal 5'phosphate > 15.7 ng/mL (94 nmol/L) • Vitamin A: ↑ serum retinol concentration > 60 μg/dL (2.09 μmol/L) • Pantothenic acid: ↑ plasma • Biotin: ↑ serum
<i>Anthropometric Measurements</i>	• Vitamin D: growth retardation
<i>Nutrition-Focused Physical Findings</i>	• Vitamin A: changes in the skin and mucous membranes; dry lips (cheilitis); early—dryness of the nasal mucosa and eyes; later—dryness, erythema, scaling and peeling of the skin, hair loss, and nail fragility. Headache, nausea, and vomiting. Infants may have bulging fontanelle; children may develop bone alterations. • Vitamin D: calcification of soft tissues (calcinosis), including the kidney, lungs, heart, and even the tympanic membrane of the ear, which can result in deafness. Headache and nausea. Infants given excessive amounts of vitamin D may have gastrointestinal upset, bone fragility. • Vitamin K: hemolytic anemia in adults or severe jaundice in infants have been noted on rare occasions • Niacin: histamine release, which causes flushing, aggravation of asthma, or liver disease

Arrows used with laboratory values: ↑ represents above reference standard and ↓ represents below reference standard.

Excessive Vitamin Intake (Specify) (NI-5.9.2)

<i>Food/Nutrition-Related History</i>	Reports or observations of: • Estimated intake reflects excessive intake of foods and supplements containing vitamins as compared to estimated requirements, including fortified cereals, meal replacements, vitamin-mineral supplements, other dietary supplements (e.g., fish liver oils or capsules), tube feeding, and/or parenteral solutions • Estimated intake > more than Tolerable Upper Limit (UL) for vitamin A based upon reference intake standard • Estimated intake more than UL for vitamin D based upon reference intake standard • Estimated intake more than UL for niacin based upon reference intake standard
<i>Client History</i>	• Conditions associated with a diagnosis or treatment, e.g., chronic liver or kidney diseases, heart failure, cancer

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Updated: 2013 Edition

Inadequate* Mineral Intake (Specify) (NI-5.10.1)

Definition

Lower intake of one or more minerals compared to established reference standards or recommendations based on physiological needs.

Note: Whenever possible, nutrient intake data should be considered in combination with clinical, biochemical, anthropometric information, medical diagnosis, clinical status, and/or other factors as well as diet to provide a valid assessment of nutritional status based on a totality of the evidence. (Institute of Medicine. Dietary Reference Intakes: Applications in Dietary Assessment. Washington, DC: National Academies Press; 2000.)

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Physiological causes increasing nutrient needs due to prolonged catabolic illness, malabsorption, hyperexcretion, nutrient/drug and nutrient/nutrient interaction, growth and maturation
- Decreased ability to consume sufficient amount of a mineral(s)
- Lack of or limited access to food, e.g., economic constraints, restricting food given to elderly and/or children
- Cultural practices that affect ability to access food
- Food- and nutrition-related knowledge deficit concerning food and supplemental sources of minerals
- Misdiagnosis of lactose intolerance/lactase deficiency; perception of conflicting nutrition messages; less than optimal reliance on supplements
- Psychological causes, e.g., depression or eating disorders
- Environmental causes, e.g., inadequately tested nutrient bioavailability of fortified foods, beverages, and supplements; less than optimal marketing of fortified foods/beverages/supplements as a substitute for natural food source of nutrient(s)

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
Biochemical Data, Medical Tests and Procedures	• Calcium: bone mineral content (BMC) ↓ the young adult mean. Hypocalcemia, serum 25(OH)D < 32 ng/mL • ↓ Phosphorus, < 2.6 mg/dL (0.84 mmol/L) • ↓ Ferritin in patient/client with a ↓ Mean Corpuscular Volume (MCV) • ↓ Zinc, plasma • ↓ Magnesium, < 1.8 mg/dL (0.7 mmol/L) • Iron: ↓ hemoglobin < 13 g/L (2 mmol/L) (males); < 12 g/L (1.86 mmol/L) (females) • Iodine: ↓ urinary excretion < 100 µg/L (788 nmol/L) • Copper, : ↓ serum copper < 64 µg/dL (10 µmol/L) • ↓ Selenium, plasma • ↓ Fluoride, plasma • ↓ Manganese, serum • ↓ Molybdenum, serum • ↓ Boron, serum or plasma

Arrows used with laboratory values: ↑ represents above reference standard and ↓ represents below reference standard.

*If a synonym for the term "inadequate" is helpful or needed, an approved alternate is the word "suboptimal."

Inadequate* Mineral Intake (Specify) (NI-5.10.1)

<i>Anthropometric Measurements</i>	• Calcium: height loss • Iodine: growth abnormalities • Chromium: unintentional weight loss
<i>Nutrition-Focused Physical Findings</i>	• Calcium: hypertension, acute – hyperactive reflexes, tetany, muscle spasm, irregular heart rhythm • Iron :pallor of face, mucosa, pale gums, tachycardia, fatigue • Potassium – weakness, constipation, hypoactive reflexes • Phosphorous: fatigue, myalgia, ataxia, confusion, parasthesias • Zinc: dysgeusia, poor wound healing, skin lesions (buttocks, perianal area, mouth, nose, eyes), alopecia • Copper: depigmentation of hair and skin, osteoporosis • Selenium:depigmentation of hair and skin • Iodine: enlarged thyroid • Fluoride: dental caries • Manganese: dermatitis
<i>Food/Nutrition-Related History</i>	Reports or observations of: • Estimated mineral intake from diet less than recommended intake • Food avoidance and/or elimination of whole food group(s) from diet • Lack of interest in food • Less than optimal food choices and/or chronic dieting behavior • Verbalizes inaccurate or incomplete knowledge • Cultural or religious practices that affect intake
<i>Client History</i>	• Conditions associated with a diagnosis or treatment, e.g., malabsorption as a result of celiac disease, short bowel syndrome, inflammatory bowel disease, or post-menopausal women without estrogen supplementation and increased calcium need, bariatric surgery, parenteral nutrition • Polycystic ovary syndrome, premenstrual syndrome, kidney stones, colon polyps • Other significant medical diagnoses and therapies • Geographic latitude and history of Ultraviolet-B exposure/use of sunscreen • Change in living environment/independence • Calcium: obesity • Vitamin/mineral deficiency

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Inadequate* Mineral Intake (Specify) (NI-5.10.1)

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Updated: 2013 Edition

*If a synonym for the term "inadequate" is helpful or needed, an approved alternate is the word "suboptimal."

Excessive Mineral Intake (Specify) (NI-5.10.2)

Definition

Higher intake of one or more minerals compared to established reference standards or recommendations based on physiological needs.

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Food- and nutrition-related knowledge deficit concerning food and supplemental sources of minerals
- Unsupported beliefs/attitudes about food, nutrition, and nutrition-related topics
- Food faddism
- Accidental oversupplementation
- Overconsumption of a limited variety of foods
- Lack of knowledge about management of diagnosed genetic disorder altering mineral homeostasis [hemo-chromatosis (iron), Wilson's disease (copper)]
- Lack of knowledge about management of diagnosed disease state requiring mineral restriction [cholestatic liver disease (copper and manganese), renal insufficiency (phosphorus, magnesium, potassium)]

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
<i>Biochemical Data, Medical Tests and Procedures</i>	Changes in appropriate laboratory values, such as: • ↑ TSH (iodine supplementation) • ↓ HDL (zinc supplementation) • ↑ Serum ferritin and transferrin saturation (iron overload) • Hyperphosphatemia • Hypermagnesemia • Copper deficiency anemia (zinc) • ↑ Fluoride, plasma • ↑ Selenium, serum • ↑ Manganese, serum • ↑ Molybdenum, serum • ↑ Boron, serum or plasma
<i>Anthropometric Measurements</i>	
<i>Nutrition-Focused Physical Findings</i>	• Hair and nail changes (selenium) • Anorexia (zinc supplementation) • GI disturbances (iron, magnesium, copper, zinc, selenium, sulfate, iodine) • Enamel or skeletal fluorosis (fluoride) • Central nervous system effects (manganese) • Verbalizes inaccurate or incomplete knowledge • Verbalizes unsupported beliefs and attitudes

Arrows used with laboratory values: ↑ represents above reference standard and ↓ represents below reference standard.

Excessive Mineral Intake (Specify) (NI-5.10.2)

<i>Food/Nutrition-Related History</i>	Reports or observations of: • Estimated intake containing high amounts of mineral compared to reference intake standard (e.g., DRIs)
<i>Client History</i>	• Liver damage (copper, iron) • Parenteral nutrition

References

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Updated: 2013 Edition

Predicted Suboptimal Nutrient Intake (Specify) (NI-5.11.1)

Definition

Future intake of one or more nutrients that is anticipated, based on observation, experience, or scientific reason, to fall short of estimated nutrient requirements, established reference standards, or recommendations based on physiological needs.

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Scheduled or planned medical therapy or medication that is predicted to increase nutrient requirements
- Scheduled or planned medical therapy or medication that is predicted to decrease ability to consume sufficient nutrients
- Physiological condition associated with increased need for a nutrient due to altered metabolism
- Cultural or religious practices that will affect nutrient intake
- Anticipated isolated living/housing situation without routine access to a variety of nutritious foods
- Danger for environmental emergency or catastrophe/disaster

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
<i>Biochemical Data, Medical Tests and Procedures</i>	• Population-based biochemical parameters indicating suboptimal nutrient intake
<i>Anthropometric Measurements</i>	• Population-based anthropometric data indicating suboptimal nutrient intake
<i>Nutrition-Focused Physical Findings</i>	• Population-based data on acute and chronic disease prevalence indicating suboptimal nutrient intake
<i>Food/Nutrition-Related History</i>	Reports or observations of: • Estimated nutrient(s) intake from all sources less than projected needs • History of marginal or suboptimal nutrient(s) intake • Projected change in ability to shop, prepare, and/or consume sufficient nutrient(s) • Medications that decrease appetite and/or affect ability to consume sufficient nutrient(s) • No prior knowledge of need for food- and nutrition-related recommendations • Religious or cultural practices that will affect nutrient intake • Low supplies in home in preparation for environmental emergency or catastrophe/disaster
<i>Client History</i>	• Scheduled surgical procedure or medical therapy known to increase nutrient(s) need or change ability to consume sufficient nutrient(s) • History or presence of a condition for which research shows an increased prevalence of insufficient nutrient(s) intake in a similar population • Isolated living/housing situation • Geographic location of home in location with danger for environmental emergency or catastrophe/disaster

Predicted Suboptimal Nutrient Intake (Specify) (NI-5.11.1)

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Created: 2011 Edition

Predicted Excessive Nutrient Intake (Specify) (NI-5.11.2)

Definition

Future intake of one or more nutrients that is anticipated, based on observation, experience, or scientific reason, to be more than estimated nutrient requirements, established reference standards, or recommendations based on physiological needs.

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Scheduled or planned medical therapy or medication that is predicted to decrease nutrient requirements
- Anticipated physiological condition associated with reduced need for or altered metabolism of nutrients
- Scheduled or planned medical therapy or medication that is predicted to alter metabolism of nutrients

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
<i>Biochemical Data, Medical Tests and Procedures</i>	• Population-based biochemical parameters indicating excessive nutrient intake
<i>Anthropometric Measurements</i>	• Population-based anthropometric data indicating excessive nutrient intake
<i>Nutrition-Focused Physical Findings</i>	• Population-based data on acute and chronic disease prevalence indicating excessive nutrient
<i>Food/Nutrition-Related History</i>	Reports or observations of: • Estimated nutrient(s) intake from all sources more than projected needs • History of excessive nutrient(s) intake • No prior knowledge of need for food- and nutrition-related recommendations
<i>Client History</i>	• Scheduled surgical procedure or medical therapy known to reduce nutrient(s) need or alter metabolism of a nutrient(s) • History or presence of a condition for which research shows an increased prevalence of excessive nutrient(s) intake in a similar population

References

1. Position of the American Dietetic Association, Dietitians of Canada, and the American College of Sports Medicine: Nutrition and athletic performance. *J Am Diet Assoc.* 2009;109:509-527.
2. Position of the American Dietetic Association: Nutrient supplementation. *J Am Diet Assoc.* 2009;109:2073-2085.

Created: 2011 Edition

Swallowing Difficulty (NC-1.1)

Definition

Impaired or difficult movement of food and liquid within the oral cavity to the stomach

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Mechanical causes, e.g., inflammation, surgery, stricture; or oral, pharyngeal and esophageal tumors; prior mechanical ventilation
- Motor causes, e.g., neurological or muscular disorders, such as cerebral palsy, stroke, multiple sclerosis, scleroderma; or prematurity, altered suck, swallow, breathe patterns

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
Biochemical Data, Medical Tests and Procedures	• Radiological findings, e.g., abnormal swallow study
Anthropometric Measurements	
Nutrition-Focused Physical Findings	• Evidence of dehydration, e.g., dry mucous membranes, poor skin turgor • Non-normal findings in cranial nerves and (CN VII) muscles of facial expression, (Nerve IX) gag reflex, swallow (Nerve X) and tongue range of motions (Nerve XII), cough reflex, drooling, facial weakness, and ability to perform and wet and dry swallow • Coughing, choking, prolonged chewing, pouching of food, regurgitation, facial expression changes during eating, drooling, noisy wet upper airway sounds, feeling of “food getting stuck,” pain while swallowing
Food/Nutrition-Related History	Reports or observations of: • Prolonged feeding time • Decreased estimated food intake • Avoidance of foods • Mealtime resistance
Client History	• Conditions associated with a diagnosis or treatment, e.g., dysphagia, achalasia • Repeated upper respiratory infections and or pneumonia

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Updated: 2011 Edition

Biting/Chewing (Masticatory) Difficulty (NC-1.2)

Definition

Impaired ability to bite or chew food in preparation for swallowing.

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Craniofacial malformations
- Oral surgery
- Neuromuscular dysfunction
- Partial or complete edentulism
- Soft tissue disease (primary or oral manifestations of a systemic disease)
- Xerostomia

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
<i>Biochemical Data, Medical Tests and Procedures</i>	
<i>Anthropometric Measurements</i>	
<i>Nutrition-Focused Physical Findings</i>	• Partial or complete edentulism • Alterations in cranial nerve function (V, VII, IX, X, XII) • Dry mouth • Oral lesions interfering with eating ability • Impaired tongue movement • Ill-fitting dentures or broken dentures
<i>Food/Nutrition-Related History</i>	Reports or observations of: • Decreased estimated food intake • Alterations in estimated food intake from usual • Decreased estimated intake or avoidance of food difficult to form into a bolus, e.g., nuts, whole pieces of meat, poultry, fish, fruits, vegetables • Avoidance of foods of age-appropriate texture • Spitting food out or prolonged feeding time
<i>Client History</i>	• Conditions associated with a diagnosis or treatment, e.g., alcoholism; Alzheimer's; head, neck or pharyngeal cancer; cerebral palsy; cleft lip/palate; oral soft tissue infections (e.g., candidiasis, leukoplakia); lack of developmental readiness; oral manifestations of systemic disease (e.g., rheumatoid arthritis, lupus, Crohn's disease, penphigus vulgaris, HIV, diabetes) • Recent major oral surgery • Wired jaw • Chemotherapy with oral side effects • Radiation therapy to oral cavity

Biting/Chewing (Masticatory) Difficulty (NC-1.2)

References

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2. Chernoff R, ed. Oral health in the elderly. *Geriatric Nutrition*. Gaithersburg, MD: Aspen Publishers; 1999.
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Updated: 2008 Edition

Breastfeeding Difficulty (NC-1.3)

Definition

Inability to sustain infant nutrition through breastfeeding.

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

Infant:

- Difficulty latching on, e.g., tight frenulum
- Poor sucking ability
- Oral pain
- Malnutrition/malabsorption
- Lethargy, sleepiness
- Irritability
- Swallowing difficulty
- Introduction of feeding via bottle or other route that may affect breastfeeding

Mother:

- Painful breasts, nipples
- Breast or nipple abnormality
- Mastitis
- Perception of or actual inadequate breastmilk* supply
- Lack of social or environmental support
- Cultural practices that affect the ability to breastfeed
- Introduction of feeding via bottle or other route that may affect breastfeeding

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
Biochemical Data, Medical Tests and Procedures	• Laboratory evidence of dehydration (infant) • Fewer than reference standard, e.g., six wet diapers in 24 hours (infant)
Anthropometric Measurements	• Any weight loss or poor weight gain (infant)
Nutrition-Focused Physical Findings	• Frenulum abnormality (infant) • Vomiting or diarrhea (infant) • Hunger, lack of satiety after feeding (infant)
Food/Nutrition-Related History	Reports or observations of (infant): • Coughing • Crying, latching on and off, pounding on breasts • Decreased feeding frequency/duration, early cessation of feeding, and/or feeding resistance • Lethargy Reports or observations of (mother): • Small amount of breastmilk* when pumping • Lack of confidence in ability to breastfeed • Doesn't hear infant swallowing • Concerns regarding mother's choice to breastfeed/lack of support • Insufficient knowledge of breastfeeding or infant hunger/satiety signals • Lack of facilities or accommodations at place of employment or in community for breastfeeding • Feeding via bottle or other route

*If a synonym for the term "breastmilk" is helpful or needed, an approved alternate is "human milk."

Breastfeeding Difficulty (NC-1.3)

<i>Client History</i>	• Conditions associated with a diagnosis or treatment (infant), e.g., cleft lip/palate, thrush, premature birth, malabsorption, infection • Conditions associated with a diagnosis or treatment (mother), e.g., mastitis, candidiasis, engorgement, history of breast surgery
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Updated: 2013 Edition

Altered Gastrointestinal (GI) Function (NC-1.4)

Definition

Changes in digestion, absorption, or elimination.

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Alteration in gastrointestinal tract structure and/or function
- Changes in the GI tract motility, e.g., gastroparesis
- Compromised exocrine function of related GI organs, e.g., pancreas, liver
- Decreased functional length of the GI tract, e.g., short-bowel syndrome

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
<i>Biochemical Data, Medical Tests and Procedures</i>	• Abnormal digestive enzyme and fecal fat studies • Abnormal hydrogen breath test, d-xylose test, stool culture, and gastric emptying and/or small bowel transit time • Endoscopic or colonoscopic examination results, biopsy results • Abnormal anemia profile • Abnormal vitamin, mineral, fatty acid, trace element, and PTH results
<i>Anthropometric Measurements</i>	• Weight loss of $\geq 5\%$ in one month, $\geq 10\%$ in six months • Growth stunting or failure in children • Abnormal bone mineral density tests
<i>Nutrition-Focused Physical Findings</i>	• Abdominal distension • Increased (or sometimes decreased) bowel sounds • Wasting due to malnutrition in severe cases • Anorexia, nausea, vomiting, diarrhea, steatorrhea, constipation, abdominal pain, reflux, gas • Evidence of vitamin and/or mineral deficiency, e.g., glossitis, cheilosis, mouth lesions, skin rashes, hair loss
<i>Food/Nutrition-Related History</i>	Reports or observations of: • Avoidance or limitation of estimated total intake or intake of specific foods/food groups due to GI symptoms, e.g., bloating, cramping, pain, diarrhea, steatorrhea (greasy, floating, foul-smelling stools) especially following ingestion of food
<i>Client History</i>	• Conditions associated with a diagnosis or treatment, e.g., malabsorption, maldigestion, steatorrhea, obstruction, constipation, diverticulitis, Crohn's disease, inflammatory bowel disease, cystic fibrosis, celiac disease, cancers, irritable bowel syndrome, infection, dumping syndrome • Surgical procedures, e.g., esophagectomy, dilatation, fundoplication, gastrectomy, vagotomy, gastric bypass, bowel resections

Altered Gastrointestinal (GI) Function (NC-1.4)

References

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Updated: 2011 Edition

Impaired Nutrient Utilization (NC-2.1)

Definition

Changes in ability to metabolize nutrients and bioactive substances.

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Compromised endocrine function of related GI organs, e.g., pancreas, liver, pituitary, parathyroid
- Metabolic disorders, including inborn errors of metabolism
- Medications that affect nutrient metabolism
- Alcohol or drug addiction

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
<i>Biochemical Data, Medical Tests and Procedures</i>	• Abnormal tests for inborn errors of metabolism • Abnormal liver function tests • Abnormal anemia profile • Abnormal pituitary hormones (growth hormone [GH], adrenocorticotrophic hormone [ACTH], luteinizing hormone [LH] and follicle-stimulating hormone [FSH]) • Vitamin and/or mineral deficiency • Hypoglycemia, hyperglycemia • Abnormal PTH
<i>Anthropometric Measurements</i>	• Weight loss of $\geq 5\%$ in one month, $\geq 10\%$ in six months • Growth stunting or failure in children • Abnormal bone mineral density tests
<i>Nutrition-Focused Physical Findings</i>	• Evidence of vitamin and/or mineral deficiency, e.g., glossitis, cheilosis, mouth lesions • Thin, wasted appearance
<i>Food/Nutrition-Related History</i>	Reports or observations of: • Avoidance or limitation of intake of specific foods/food groups due to physical symptoms • Alcohol or drug use
<i>Client History</i>	• Conditions associated with a diagnosis or treatment, e.g., cystic fibrosis, celiac disease, Crohn's disease, infection, radiation therapy, inborn errors of metabolism, endocrine disorders, pituitary disorders, renal failure, liver failure

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Updated: 2013 Edition

Altered Nutrition-Related Laboratory Values (Specify) (NC-2.2)

Definition

Changes due to body composition, medications, body system changes or genetics, or changes in ability to eliminate byproducts of digestive and metabolic processes.

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Kidney, liver, cardiac, endocrine, neurologic, and/or pulmonary dysfunction
- Prematurity
- Other organ dysfunction that leads to biochemical changes

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
<i>Biochemical Data, Medical Tests and Procedures</i>	• ↑ AST, ALT, T. bili, serum ammonia (liver disorders) • ↑ BUN, ↑ Cr, ↑ K, ↑ phosphorus, ↓ glomerular filtration rate (GFR) (kidney disorders) • Altered pO₂ and pCO₂ (pulmonary disorders) • ↑ Serum lipids • ↑ Plasma glucose and/or HgbA1c levels • Inadequate blood glucose control • ↑ Urine microalbumin • Other findings of acute or chronic disorders that are abnormal and of nutritional origin or consequence
<i>Anthropometric Measurements</i>	• Rapid weight changes • Other anthropometric measures that are altered
<i>Nutrition-Focused Physical Findings</i>	• Jaundice, edema, ascites, pruritis (liver disorders) • Edema, shortness of breath (cardiac disorders) • Blue nail beds, clubbing (pulmonary disorders) • Anorexia, nausea, vomiting
<i>Food/Nutrition-Related History</i>	Reports or observations of: • Estimated intake of foods high in or overall excess intake of protein, potassium, phosphorus, sodium, fluid • Estimated intake of micronutrients less than recommendations • Food- and nutrition-related knowledge deficit, e.g., lack of information, incorrect information, or noncompliance with modified diet
<i>Client History</i>	• Conditions associated with a diagnosis or treatment, e.g., renal or liver disease, alcoholism, cardiopulmonary disorders, diabetes

Arrows used with laboratory values: ↑ represents above reference standard and ↓ represents below reference standard.

Altered Nutrition-Related Laboratory Values (Specify) (NC-2.2)

References

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Updated: 2013 Edition

Food–Medication Interaction (Specify) (NC-2.3)

Definition

Undesirable/harmful interaction(s) between food and over-the-counter (OTC) medications, prescribed medications, herbals, botanicals, and/or dietary supplements that diminishes, enhances, or alters the effect of nutrients and/or medications.

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Combined ingestion or administration of medication and food that results in undesirable/harmful interaction

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
<i>Biochemical Data, Medical Tests and Procedures</i>	• Alterations of biochemical tests based on medication affect and patient/client condition
<i>Anthropometric Measurements</i>	• Alterations of anthropometric measurements based on medication effect and patient/client conditions, e.g., weight gain and corticosteroids
<i>Nutrition-Focused Physical Findings</i>	• Changes in appetite or taste
<i>Food/Nutrition-Related History</i>	Reports or observations of: • Intake that is problematic or inconsistent with OTC, prescribed drugs, herbals, botanicals, or dietary supplements, such as: • fish oils and prolonged bleeding • coumadin and vitamin K-rich foods • high-fat diet while on cholesterol-lowering medications • iron supplements, constipation, and low-fiber diet • Intake that does not support replacement or mitigation of OTC, prescribed drugs, herbals, botanicals, and dietary supplements effects • Multiple drugs (OTC, prescribed drugs, herbals, botanicals, or dietary supplements) that are known to have food–medication interactions • Medications that require nutrient supplementation that can not be accomplished via food intake, e.g., isoniazid and vitamin B-6
<i>Client History</i>	

References

1. Position of the American Dietetic Association: Integration of medical nutrition therapy and pharmacotherapy. *J Am Diet Assoc.* 2010;110:950-956.

Predicted Food–Medication Interaction (Specify) (NC-2.4)

Definition

Potential undesirable/harmful interaction(s) between food and over-the-counter (OTC) medications, prescribed medications, herbals, botanicals, and/or dietary supplements that diminishes, enhances, or alters the effect of nutrients and/or medications.

Note: Appropriate nutrition diagnosis when food–medication interaction is predicted, but has not yet occurred. This nutrition diagnosis is used when the practitioner wants to prevent a nutrient-medication interaction. Observed food–medication interactions should be documented using Food–Medication Interaction (NC-2.3.1).

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Combined ingestion or administration of medication and food that results in undesirable/harmful interaction

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
Biochemical Data, Medical Tests and Procedures	
Anthropometric Measurements	
Nutrition-Focused Physical Findings	
Food/Nutrition-Related History	Reports or observations of: • Intake that is expected to be problematic or inconsistent with OTC, prescribed drugs, herbals, botanicals, or dietary supplements, such as: • fish oils and prolonged bleeding • coumadin and vitamin K-rich foods • high-fat diet while on cholesterol-lowering medications • iron supplements, constipation, and low-fiber diet • Intake that may not support replacement or mitigation of OTC, prescribed drugs, herbals, botanicals, and dietary supplements effects • Multiple drugs (OTC, prescribed drugs, herbals, botanicals, or dietary supplements) that are known to have food–medication interactions • Medications that require nutrient supplementation that can not be accomplished via food intake, e.g., isoniazid and vitamin B-6
Client History	

References

1. Position of the American Dietetic Association: Integration of medical nutrition therapy and pharmacotherapy. *J Am Diet Assoc.* 2010;110:950-956.

Created: 2011 Edition

Underweight (NC-3.1)

Definition

Low body weight compared to established reference standards or recommendations.

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Disordered eating pattern
- Excessive physical activity
- Unsupported beliefs/attitudes about food, nutrition, and nutrition-related topics
- Inadequate energy intake
- Increased energy needs
- Lack of or limited access to food
- Small for gestational age, intrauterine growth retardation/restriction and/or lack of progress/appropriate weight gain per day

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
<i>Biochemical Data, Medical Tests and Procedures</i>	• ↑ Measured resting metabolic rate (RMR) higher than expected and/or estimated
<i>Anthropometric Measurements</i>	• Decreased skinfold thickness and mid-arm muscle circumference • BMI < 18.5 (adults) • BMI for older adults (older than 65 years) < 23 • Birth to 2 years • Weight for age < 5th percentile • Weight for length < 5th percentile • Ages 2 to 20 years • Weight for stature < 5th percentile • BMI < 5th percentile (for children 2 to 20) • Weight for age < 5th percentile
<i>Nutrition-Focused Physical Findings</i>	• Decreased muscle mass, muscle wasting (gluteal and temporal) • Hunger
<i>Food/Nutrition-Related History</i>	Reports or observations of: • Estimated intake of food less than estimated or measured needs • Limited supply of food in home • Dieting, food faddism • Refusal to eat • Physical activity more than recommended amount • Medications that affect appetite, e.g., stimulants for ADHD

Arrows used with laboratory values: ↑ represents above reference standard and ↓ represents below reference standard.

Underweight (NC-3.1)

<i>Client History</i>	• Malnutrition • Illness or physical disability • Mental illness, dementia, confusion • Athlete, dancer, gymnast • Vitamin/mineral deficiency
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References

1. Assessment of nutritional status. In: Kleinman R, ed. *Pediatric Nutrition Handbook*. 5th ed. Elk Grove Village, IL: American Academy of Pediatrics; 2004:407-423.
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7. Position of the American Dietetic Association: Nutrition intervention in the treatment of eating disorders. *J Am Diet Assoc*. 2011;111:1236-1241.
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9. Reynolds MW, Fredman L, Langenberg P, Magaziner J. Weight, weight change, and mortality in a random sample of older community-dwelling women. *J Am Geriatr Soc*. 1999;47:1409-1414.
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Updated: 2013 Edition

Unintended* Weight Loss (NC-3.2)

Definition

Decrease in body weight that is not planned or desired.

Note: May not be an appropriate nutrition diagnosis when changes in body weight are due to fluid.

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Physiological causes increasing nutrient needs, e.g., due to prolonged catabolic illness, trauma, malabsorption
- Decreased ability to consume sufficient energy
- Lack of or limited access to food, e.g., economic constraints, restricting food given to elderly and/or children
- Cultural practices that affect ability to access food
- Prolonged hospitalization
- Psychological causes such as depression and disordered eating
- Lack of self-feeding ability

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
<i>Biochemical Data, Medical Tests and Procedures</i>	
<i>Anthropometric Measurements</i>	• Weight loss of $\geq 5\%$ within 30 days, $\geq 7.5\%$ in 90 days, or $\geq 10\%$ in 180 days (adults) • Not gaining weight as expected; 5% weight loss in 6 months and/or a shift downward in growth percentiles, crossing two or more percentile channels on reference growth standard charts (pediatrics)
<i>Nutrition-Focused Physical Findings</i>	• Fever • Decreased senses, i.e., smell, taste, vision • Increased heart rate • Increased respiratory rate • Loss of subcutaneous fat and muscle stores • Change in way clothes fit • Changes in mental status or function (e.g., depression)
<i>Food/Nutrition-Related History</i>	Reports or observations of: • Normal or usual estimated intake in face of illness • Poor intake, change in eating habits, early satiety, skipped meals • Medications associated with weight loss, such as certain antidepressants
<i>Client History</i>	• Conditions associated with a diagnosis or treatment, e.g., AIDS/HIV, burns, chronic obstructive pulmonary disease, dysphagia, hip/long bone fracture, infection, surgery, trauma, hyperthyroidism (pre- or untreated), some types of cancer or metastatic disease (specify), substance abuse • Cancer chemotherapy

**If a synonym, or alternate word with the same meaning, for the term "unintended" is helpful or needed, an approved alternate is the word "involuntary."*

Unintended* Weight Loss (NC-3.2)

References

1. Collins N. Protein-energy malnutrition and involuntary weight loss: nutritional and pharmacologic strategies to enhance wound healing. *Expert Opin Pharmacother*. 2003;7:1121-1140.
2. Splett PL, Roth-Yousey LL, Vogelzang JL. Medical nutrition therapy for the prevention and treatment of unintentional weight loss in residential healthcare facilities. *J Am Diet Assoc*. 2003;103:352-362.
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Updated: 2013 Edition

*If a synonym, or alternate word with the same meaning, for the term "unintended" is helpful or needed, an approved alternate is the word "involuntary."

Overweight/Obesity (NC-3.3)

Definition

Increased adiposity compared to established reference standards or recommendations, ranging from overweight to morbid obesity.

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Decreased energy needs
- Disordered eating pattern
- Excessive energy intake
- Food- and nutrition-related knowledge deficit
- Not ready for diet/lifestyle change
- Physical inactivity
- Increased psychological/life stress

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
<i>Biochemical Data, Medical Tests and Procedures</i>	• ↓ Measured resting metabolic rate (RMR) less than expected and/or estimated
<i>Anthropometric Measurements</i>	• BMI more than normative standard for age and sex: • Overweight: 25 to 29.9 (adults), 85th to 94th percentiles (pediatrics) • Obese Class I: 30 to 34.9 (adults) • Obese Class II: 35 to 39.9 (adults) • Obese Class III: 40+* (adults) • Obese > 95th percentile (pediatrics) • Waist circumference more than normative standard for age and sex • Increased skinfold thickness • Body fat percentage >25% for men and >32% for women • Weight for height more than normative standard for age and sex
<i>Nutrition-Focused Physical Findings</i>	• Increased body adiposity
<i>Food/Nutrition-Related History</i>	Reports or observations of: • Overconsumption of high-fat and/or energy-dense food or beverage • Large portions of food (portion size more than twice than recommended) • Estimated excessive energy intake • Infrequent, low-duration and/or low-intensity physical activity, factors affecting physical activity access • Large amounts of sedentary activities, e.g., TV watching, reading, computer use in both leisure and work/school • Uncertainty regarding nutrition-related recommendations • Inability to apply nutrition-related recommendations

Arrows used with laboratory values: ↑ represents above reference standard and ↓ represents below reference standard.

*If a synonym for the term "Obese Class III" is helpful or needed, an approved alternate is "morbid obesity."

Overweight/Obesity (NC-3.3)

<i>Food/Nutrition-Related History, cont'd</i>	Reports or observations of: • Unwillingness or disinterest in applying nutrition-related recommendations • Inability to lose a significant amount of excess weight through conventional weight loss intervention • Medications that impact RMR, e.g., midazolam, propranolol, glipizide
<i>Client History</i>	• Conditions associated with a diagnosis or treatment, e.g., hypothyroidism, metabolic syndrome, eating disorder not otherwise specified, depression • Physical disability or limitation • History of familial obesity • History of childhood obesity • History of physical, sexual, or emotional abuse

References

1. Academy of Nutrition and Dietetics. Nutrition Care Manual. Available at: www.nutritioncaremanual.org. Accessed January 26, 2012
2. Academy of Nutrition and Dietetics. Pediatric Nutrition Care Manual. Available at: <http://peds.nutritioncaremanual.org>. Accessed January 26, 2012.
3. Crawford S. Promoting dietary change. *Can J Cardiol*. 1995;11(suppl A):14A-15A.
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9. Position of the American Dietetic Association: Total diet approach to communicating food and nutrition information. *J Am Diet Assoc*. 2007;107:1224-1232.
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11. Position of the American Dietetic Association: Nutrition intervention in the treatment of eating disorders. *J Am Diet Assoc*. 2011;111:1236-1241.
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Updated: 2013 Edition

Unintended* Weight Gain (NC-3.4)

Definition

Weight gain more than that which is desired or planned.

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Illness causing unexpected weight gain because of head trauma, immobility, paralysis or related condition
- Chronic use of medications known to cause weight gain, such as use of certain antidepressants, antipsychotics, corticosteroids, certain HIV medications
- Condition leading to excessive fluid weight gains

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
<i>Biochemical Data, Medical Tests and Procedures</i>	• ↓ Serum albumin, hyponatremia, ↑ fasting serum lipid levels, ↑ fasting glucose levels, fluctuating hormone levels
<i>Anthropometric Measurements</i>	• Increased weight, any increase in weight more than planned or desired (pediatrics and adults) • Grams/day > than planned or desired (pediatrics) • Weight gain of > 5% within 30 days, > 7.5% in 90 days, or > 10% in 180 days (adults)
<i>Nutrition-Focused Physical Findings</i>	• Fat accumulation, excessive subcutaneous fat stores, noticeable change in body fat distribution • Extreme hunger with or without palpitations, tremor, and sweating • Edema • Shortness of breath • Muscle weakness • Fatigue
<i>Food/Nutrition-Related History</i>	Reports or observations of: • Estimated intake inconsistent with estimated or measured energy needs • Changes in recent estimated food intake level • Fluid administration more than requirements • Use of alcohol, narcotics • Medications associated with increased appetite • Physical inactivity or change in physical activity level
<i>Client History</i>	• Conditions associated with a diagnosis or treatment of asthma, psychiatric illnesses, rheumatic conditions, Cushing's syndrome, obesity, Prader-Willi syndrome, hypothyroidism

Arrows used with laboratory values: ↑ represents above reference standard and ↓ represents below reference standard.

*If a synonym, or alternate word with the same meaning, for the term "unintended" is helpful or needed, an approved alternate is the word "involuntary."

Unintended* Weight Gain (NC-3.4)

References

1. Position of the American Dietetic Association and American Society for Nutrition: Obesity, reproduction, and pregnancy outcomes. *J Am Diet Assoc.* 2009;109:918-927.
2. Position of the American Dietetic Association: Weight management. *J Am Diet Assoc.* 2009;109:330-346.

Updated: 2013 Edition

*If a synonym, or alternate word with the same meaning, for the term “unintended” is helpful or needed, an approved alternate is the word “involuntary.”

Suboptimal Growth Rate (NC-3.5)

Definition

Rate of growth or growth velocity slower than expected, or weight gain that is suboptimal in comparison with goal or reference standard.

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence of or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems.

- Physiological impetus for increased nutrient needs (e.g., critical illness or trauma; pregnancy; metabolic illness, e.g., type 1 diabetes; malabsorption)
- Decreased ability to consume sufficient energy
- Lack of or limited access to food
- Psychological causes, such as depression or disordered eating pattern
- Limited food acceptance
- Food and nutrition-related knowledge deficit
- Unsupported beliefs/attitudes about food, nutrition, and nutrition-related topics
- Small for gestational age, intrauterine growth restriction/retardation, lack of appropriate weight gain, hyperemesis gravidarum

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
<i>Biochemical Data, Medical Tests and Procedures</i>	• Positive urine ketones, ↑ fasting (or postprandial) glucose level • Fluctuating hormone levels during pregnancy • Zinc deficiency • Iron deficiency
<i>Anthropometric Measurements</i>	• Weight-for-age decrease in 2 or more percentile channels • Weight-gain velocity less than expected, based on established reference standard and/or guideline • Length- or height-for-age decrease in 2 or more percentile channels • Length- or height-gain velocity less than expected, based on established reference standard and/or guideline
<i>Nutrition-Focused Physical Findings</i>	• Decreased muscle mass, muscle wasting (gluteal and temporal) • Hunger • Decreased fat mass
<i>Food/Nutrition-Related History</i>	Reports or observations of: • Estimated energy intake inconsistent with estimated or measured needs. • Restricted fluids decreasing ability to meet nutritional needs • Difficulty breastfeeding, e.g., poor latch • Limited food acceptance, e.g., not progressing to foods as expected or recommended

Arrows used with laboratory values: ↑ represents above reference standard and ↓ represents below reference standard.

Suboptimal Growth Rate (NC-3.5)

<i>Food/Nutrition-Related History.</i> <i>cont'd</i>	Reports or observations of: • Medications associated with decreased appetite or weight loss • Use of alcohol or narcotics during pregnancy • Increase in physical activity levels • Normal or usual intake in presence of illness • Poor intake, change in eating habits, early satiety, or skipped meals
<i>Client History</i>	• Conditions associated with a diagnosis or treatment impacting growth, including AIDS/HIV, burns, pulmonary disease, dysphagia, long bone fracture, infection, surgery, trauma, hyperthyroid, hypothyroid, substance abuse, some types of cancer or metastatic disease. • Food insecurity

References

1. Academy of Nutrition and Dietetics. Pediatric Nutrition Care Manual. Available at: <http://peds.nutritioncaremanual.org>. Accessed January 26, 2012.
2. Assessment of nutritional status. In: Kleinman R, ed. *Pediatric Nutrition Handbook*. 6th ed. Elk Grove Village, IL: American Academy of Pediatrics; 2009:559-576, 733-782.
3. Health Canada. Prenatal Guidelines Nutrition Guidelines for Health Professionals: Gestational Weight Gain, 2010. Available at: <http://www.hc-sc.gc.ca/fn-an/nutrition/prenatal/index-eng.php>. Accessed January 27, 2012.
4. Institute of Medicine, Weight Gain During Pregnancy: Reexamining the Guidelines, Available at: <http://www.iom.edu/~media/Files/Report%20Files/2009/Weight-Gain-During-Pregnancy-Reexamining-the-Guidelines/Report%20Brief%20-%20Weight%20Gain%20During%20Pregnancy.pdf>. Accessed January 27, 2012.

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Excessive Growth Rate (NC-3.6)

Definition

Rate of growth or growth velocity greater than expected, or weight gain that is higher in comparison with goal or reference standard.

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence of or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems.

- Physiological change resulting in decreased energy needs
- Excessive energy intake
- Frequent intake of energy-dense foods
- Food and nutrition-related knowledge deficit
- Physical inactivity

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
<i>Biochemical Data, Medical Tests and Procedures</i>	
<i>Anthropometric Measurements</i>	Weight gain greater than reference standard • Weight gain velocity greater than expected, based on reference standard and/or guidelines • Weight-for-length or BMI-for-age increase greater than expected
<i>Nutrition-Focused Physical Findings</i>	
<i>Food/Nutrition-Related History</i>	Reports or observations of: • Estimated energy intake inconsistent with estimated or measured needs • Medications associated with increased appetite or weight gain • Decrease in physical activity
<i>Client History</i>	• Conditions associated with a diagnosis or treatment impacting growth, e.g., Prader-Willi syndrome, Down syndrome, spina bifida, and neurological conditions that impact satiety

References

1. Academy of Nutrition and Dietetics. Pediatric Nutrition Care Manual. Available at: <http://peds.nutritioncaremanual.org>. Accessed January 26, 2012.
2. Assessment of nutritional status. In: Kleinman R, ed. *Pediatric Nutrition Handbook*. 6th ed. Elk Grove Village, IL: American Academy of Pediatrics; 2009:559-576, 733-782.
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4. Institute of Medicine, Weight Gain During Pregnancy: Reexamining the Guidelines, Available at: <http://www.iom.edu/~media/Files/Report%20Files/2009/Weight-Gain-During-Pregnancy-Reexamining-the-Guidelines/Report%20Brief%20-%20Weight%20Gain%20During%20Pregnancy.pdf>. Accessed January 27, 2012.

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Food- and Nutrition-Related Knowledge Deficit (NB-1.1)

Definition

Incomplete or inaccurate knowledge about food, nutrition, or nutrition-related information and guidelines.

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Unsupported beliefs/attitudes about food, nutrition, and nutrition-related topics
- Lack of prior nutrition-related education
- Lack of understanding of infant/child cues to indicate hunger
- Cultural beliefs that affect ability to learn/apply information
- Impaired cognitive ability, including learning disabilities, neurological or sensory impairment, and/or dementia
- Prior exposure to incorrect information
- Unwilling or disinterested in learning/applying information
- Uncertainty how to apply nutrition information

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
<i>Biochemical Data, Medical Tests and Procedures</i>	
<i>Anthropometric Measurements</i>	
<i>Nutrition-Focused Physical Findings</i>	
<i>Food/Nutrition-Related History</i>	Reports or observations of: • Verbalizes inaccurate or incomplete information • Provides inaccurate or incomplete written response to questionnaire/written tool or is unable to read written tool • No prior knowledge of need for food- and nutrition-related recommendations • No prior education provided on how to apply food and nutrition related information • Demonstrates inability to apply food- and nutrition-related information, e.g., select food based on nutrition therapy or prepare infant feeding as instructed • Relates concerns about previous attempts to learn information • Verbalizes unwillingness or disinterest in learning information
<i>Client History</i>	• Conditions associated with a diagnosis or treatment • New medical diagnosis or change in existing diagnosis or condition • Ethnic or cultural related issues impacting application of information

Food- and Nutrition-Related Knowledge Deficit (NB-1.1)

References

1. Crawford S. Promoting dietary change. *Can J Cardiol*. 1995;11(suppl A):14A-15A.
2. Kumanyika SK, Van Horn L, Bowen D, Perri MG, Rolls BJ, Czajkowski SM, Schron E. Maintenance of dietary behavior change. *Health Psychol*. 2000;19(1 suppl):S42-S56.
3. Position of the American Dietetic Association: Weight management. *J Am Diet Assoc*. 2009;109:330-346.
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7. US Preventive Services Task Force. Behavioral counseling in primary care to promote a healthy diet. *Am J Prev Med*. 2003;24:93-100.

Updated: 2013 Edition

Unsupported Beliefs/Attitudes About Food or Nutrition-Related Topics (NB-1.2)

Use with caution: Be sensitive to patient/client concerns.

Definition

Beliefs/attitudes or practices about food, nutrition, and nutrition-related topics that are incompatible with sound nutrition principles, nutrition care, or disease/condition (excluding disordered eating patterns and eating disorders).

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Disbelief in science-based food and nutrition information
- Lack of prior exposure to accurate nutrition-related information
- Eating behavior serves a purpose other than nourishment (e.g., pica)
- Desire for a cure for a chronic disease through the use of alternative therapy

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
Biochemical Data, Medical Tests and Procedures	
Anthropometric Measurements	
Nutrition-Focused Physical Findings	
Food/Nutrition-Related History	Reports or observations of: • Food faddism • Estimated intake that reflects an imbalance of nutrients/food groups • Avoidance of foods/food groups (e.g., sugar, wheat, cooked foods) • Intake of nonfood items • Intake of complementary and alternative medicine products and dietary supplements that may be unsupported for health
Client History	• Conditions associated with a diagnosis or treatment, e.g., obesity, diabetes, cancer, cardiovascular disease, mental illness • Pica • Food fetish

Diagnosis

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Unsupported Beliefs/Attitudes About Food or Nutrition-Related Topics (NB-1.2)

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Updated: 2013 Edition

Not Ready for Diet/Lifestyle Change (NB-1.3)

Definition

Lack of perceived value of nutrition-related behavior change compared to costs (consequences or effort required to make changes); conflict with personal value system; preceding event, condition or cause to behavior change.

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Unsupported beliefs/attitudes about food, nutrition, and nutrition-related topics
- Impaired cognitive ability, including learning disabilities, neurological or sensory impairment, and/or dementia
- Lack of social support for implementing changes
- Denial of need to change
- Perception that time, interpersonal, or financial constraints prevent changes
- Unwilling or disinterested in learning/applying information
- Lack of self-efficacy for making change or demoralization from previous failures at change

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
Biochemical Data, Medical Tests and Procedures	
Anthropometric Measurements	
Nutrition-Focused Physical Findings	• Negative body language, e.g., frowning, lack of eye contact, defensive posture, lack of focus, fidgeting (Note: body language varies by culture.)
Food/Nutrition-Related History	Reports or observations of: • Denial of need for food- and nutrition-related changes • Inability to understand required changes • Failure to keep appointments/schedule follow-up appointments or engage in counseling • Previous failures to effectively change target behavior • Defensiveness, hostility, or resistance to change • Lack of efficacy to make change or to overcome barriers to change • Factors affecting physical activity access
Client History	

References

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2. Greene GW, Rossi SR, Rossi JS, Velicer WF, Fava JS, Prochaska JO. Dietary applications of the Stages of Change Model. *J Am Diet Assoc.* 1999;99:673-678.
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Updated: 2008 Edition

Self-Monitoring Deficit (NB-1.4)

Definition

Lack of data recording to track personal progress.

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Food- and nutrition-related knowledge deficit concerning self-monitoring
- Lack of social support for implementing changes
- Lack of value for behavior change or competing values
- Perception that lack of resources (e.g., time, financial, or interpersonal) prevent self-monitoring
- Cultural practices that affect the ability to track personal progress
- Impaired cognitive ability, including learning disabilities, neurological or sensory impairment, and/or dementia
- Prior exposure to incompatible information
- Not ready for diet/lifestyle change
- Unwilling or disinterested in tracking progress
- Lack of focus and attention to detail, difficulty with time management and/or organization

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
<i>Biochemical Data, Medical Tests and Procedures</i>	• Recorded data inconsistent with biochemical data, e.g., estimated dietary intake is not consistent with biochemical data
<i>Anthropometric Measurements</i>	
<i>Nutrition-Focused Physical Findings</i>	
<i>Food/Nutrition-Related History</i>	Reports or observations of: • Incomplete self-monitoring records, e.g., glucose, food, fluid intake, weight, physical activity, ostomy output records • Estimated food intake data inconsistent with weight status or growth pattern data • Embarrassment or anger regarding need for self-monitoring • Uncertainty of how to complete monitoring records • Uncertainty regarding changes that could/should be made in response to data in self-monitoring records • No self-management equipment, e.g., no blood glucose monitor, pedometer • Verbalizes inaccurate or incomplete knowledge • Cultural or religious practices that affect intake
<i>Client History</i>	• Diagnoses associated with self-monitoring, e.g., diabetes mellitus, obesity, new ostomy • New medical diagnosis or change in existing diagnosis or condition • Lack of social and/or familial support

Self-Monitoring Deficit (NB-1.4)

References

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Updated: 2013 Edition

Disordered Eating Pattern (NB-1.5)

Definition

Beliefs, attitudes, thoughts, and behaviors related to food, eating, and weight management, including classic eating disorders as well as less severe, similar conditions that negatively impact health.

Note: May not be an appropriate nutrition diagnosis for individuals with Limited food acceptance NI-2.9.

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Familial, societal, biological/genetic, and/or environmental-related obsessive desire to be thin
- Weight regulation/preoccupation significantly influences self-esteem

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
Biochemical Data, Medical Tests and Procedures	• ↓ Cholesterol, abnormal lipid profiles, hypoglycemia, hypokalemia (anorexia nervosa [AN]) • Hypokalemia and hypochloremic alkalosis (bulimia nervosa [BN]) • Hyponatremia, hypothyroid, elevated BUN (AN) • Urine positive for ketones (AN)
Anthropometric Measurements	• BMI < 17.5, arrested growth and development, failure to gain weight during period of expected growth, weight less than 85% of expected (AN) • BMI > 29 (eating disorder not otherwise specified [EDNOS]) • Significant weight fluctuation (BN)
Nutrition-Focused Physical Findings	• Severely depleted adipose and somatic protein stores (AN) • Lanugo hair formation on face and trunk, brittle listless hair, cyanosis of hands and feet, and dry skin (AN) • Normal or excess adipose and normal somatic protein stores (BN, EDNOS) • Damaged tooth enamel (BN) • Enlarged parotid glands (BN) • Peripheral edema (BN) • Skeletal muscle loss (AN) • Low body temperature • Inability to concentrate (AN) • Positive Russell's Sign (BN) callous on back of hand from self-induced vomiting • Bradycardia (heart rate < 60 beats/min), hypotension (systolic < 90 mm HG), and orthostatic hypotension (AN) • Self-induced vomiting, diarrhea, bloating, constipation, and flatulence (BN); always cold (AN) • Muscle weakness, fatigue, dehydration (AN, BN) • Denial of hunger (AN)

Arrows used with laboratory values: ↑ represents above reference standard and ↓ represents below reference standard.

Disordered Eating Pattern (NB-1.5)

<i>Food/Nutrition-Related History</i>	Reports or observations of: • Avoidance of food or energy-containing beverages (AN, BN) • Avoidance of social events at which food is served • Fear of foods or dysfunctional thoughts regarding food or food experiences (AN, BN) • Food and weight preoccupation (AN, BN) • Knowledgeable about current diet fad (AN, BN, EDNOS) • Fasting (AN, BN) • Estimated intake of larger quantity of food in a defined time period, a sense of lack of control over eating (BN, EDNOS) • Excessive physical activity (AN, BN, EDNOS) • Eating much more rapidly than normal, until feeling uncomfortably full, consuming large amounts of food when not feeling physically hungry; eating alone because of embarrassment, feeling very guilty after overeating (EDNOS) • Eats in private (AN, BN) • Irrational thoughts about food's affect on the body (AN, BN, EDNOS) • Pattern of chronic dieting • Excessive reliance on nutrition terming and preoccupation with nutrient content of foods • Inflexibility with food selection • Misuse of laxatives, enemas, diuretics, stimulants, and/or metabolic enhancers (AN, BN) • Excessive use of condiments and food mixing
<i>Client History</i>	• Diagnosis, e.g., anorexia nervosa, bulimia nervosa, binge eating, eating disorder not otherwise specified, amenorrhea • History of mood and anxiety disorders (e.g., depression, obsessive/compulsive disorder [OCD]), personality disorders, substance abuse disorders • Family history of eating disorder, depression, OCD, anxiety disorders (AN, BN) • Irritability, depression (AN, BN) • Anemia • Leukopenia • Cardiac arrhythmias, bradycardia (AN, BN)

Diagnosis

References

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Disordered Eating Pattern (NB-1.5)

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Updated: 2011 Edition

Limited Adherence to Nutrition-Related Recommendations (NB-1.6)

Definition

Lack of nutrition-related changes as per intervention agreed on by client or population.

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Lack of social support for implementing changes
- Lack of value for behavior change or competing values
- Lack of confidence in ability to change
- Perception that lack of resources (e.g., time, financial, or interpersonal) prevent changes
- Previous lack of success in making health-related changes
- Food and nutrition-related knowledge deficit concerning how to make nutrition-related changes
- Unwilling or disinterested in applying/learning information
- Unsupported beliefs or attitudes about food or nutrition-related topics

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
<i>Biochemical Data, Medical Tests and Procedures</i>	• Expected laboratory outcomes are not achieved
<i>Anthropometric Measurements</i>	• Expected anthropometric outcomes are not achieved
<i>Nutrition-Focused Physical Findings</i>	• Negative body language, e.g., frowning, lack of eye contact, fidgeting, defensive posture, crying (Note: body language varies by culture)
<i>Food/Nutrition-Related History</i>	Reports or observations of: • Expected food/nutrition-related outcomes are not achieved • Inability to recall changes agreed upon • Failure to complete any agreed upon homework • Lack of compliance or inconsistent compliance with plan • Failure to keep appointments or schedule follow-up appointments • Lack of appreciation of the importance of making recommended nutrition-related changes • Uncertainty as to how to consistently apply food/nutrition information • Verbalizes frustration with attempts to apply food/nutrition information • Verbalizes previous failures to effectively change target behavior • Presence of a lack of self-efficacy or confidence to make changes • Notes internal and/or external barriers to change
<i>Client History</i>	• Lack of social and/or familial support

Limited Adherence to Nutrition-Related Recommendations (NB-1.6)

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1. Anderson ES, Winett RA, Wojcik JR. Self-regulation, self-efficacy, outcome expectations, and social support: Social cognitive theory and nutrition behavior. *Ann Behav Med.* 2007;34(3):304-312.
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6. US Preventive Services Task Force. Behavioral counseling in primary care to promote a healthy diet. *Am J Prev Med.* 2003;24:93-100.

Updated: 2013 Edition

Undesirable Food Choices (NB-1.7)

Definition

Food and/or beverage choices that are inconsistent with dietary reference intake standards (e.g., Dietary Reference Intakes), national food guidelines (e.g., US Dietary Guidelines, MyPlate), diet quality index standards (e.g., Healthy Eating Index) or as defined in the nutrition prescription.

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Lack of prior exposure to accurate nutrition-related information
- Cultural practices that affect the ability to learn/apply information
- Impaired cognitive ability, including learning disabilities, neurological or sensory impairment, and/or dementia
- High level of fatigue or other side effect of medical, surgical, or radiological therapy
- Lack of or limited access to recommended foods
- Perception that lack of resources (e.g., time, financial, or interpersonal) prevent selection of food choices consistent with recommendations
- Food allergies and aversions impeding food choices consistent with guidelines
- Lacks motivation and/or readiness to apply or support systems change
- Unwilling or disinterested in learning/applying information
- Psychological causes such as depression and disordered eating

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
Biochemical Data, Medical Tests and Procedures	• ↑ lipid panel
Anthropometric Measurements	
Nutrition-Focused Physical Findings	• Findings consistent with vitamin/mineral deficiency or excess
Food/Nutrition-Related History	Reports or observations of: • Estimated intake inconsistent with dietary reference intake standards (e.g., DRIs), national food guidelines (e.g., US Dietary Guidelines, MyPlate), diet quality index standards (e.g., Healthy Eating Index), or nutrition prescription • Inaccurate or incomplete understanding of the guidelines • Inability to apply guideline information • Inability to select (e.g., access), or unwillingness or disinterest in selecting, food consistent with the guidelines
Client History	• Conditions associated with a diagnosis or treatment, e.g., mental illness

Arrows used with laboratory values: ↑ represents above reference standard and ↓ represents below reference standard.

References

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Undesirable Food Choices (NB-1.7)

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Updated: 2013 Edition

Physical Inactivity (NB-2.1)

Definition

Low level of activity or sedentary behavior to the extent that it reduces energy expenditure and impacts health.

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Unsupported beliefs/attitudes about physical activity
- Injury, lifestyle change, condition (e.g., advanced stages of cardiovascular disease, obesity, kidney disease), physical disability or limitation that reduces physical activity or activities of daily living
- Food and nutrition-related knowledge deficit concerning health benefits of physical activity
- Lack of prior exposure to accurate nutrition-related information
- Lack of role models, e.g., for children
- Lack of social support for implementing changes
- Lack of or limited access to safe exercise environment and/or equipment
- Lack of value for behavior change or competing values
- Time constraints
- Financial constraints that may prevent sufficient level of activity (e.g., cost of equipment or shoes or club membership to gain access)

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
<i>Biochemical Data, Medical Tests and Procedures</i>	
<i>Anthropometric Measurements</i>	• Obesity: BMI > 30 (adults), BMI > 95th percentile (pediatrics > 3 years)
<i>Nutrition-Focused Physical Findings</i>	• Excessive subcutaneous fat and low muscle mass
<i>Food/Nutrition-Related History</i>	Reports or observations of: • Infrequent, low-duration and/or low-intensity physical activity • Large amounts of sedentary activities, e.g., TV watching, reading, computer use in both leisure and work/school • Low level of NEAT (non-exercise activity thermogenesis) expended by physical activities other than planned exercise, e.g., sitting, standing, walking, fidgeting • Low cardiorespiratory fitness and/or low muscle strength • Medications that cause somnolence and decreased cognition • Factors affecting physical activity access
<i>Client History</i>	• Medical diagnoses that may be associated with or result in decreased activity, e.g., arthritis, chronic fatigue syndrome, morbid obesity, knee surgery • Psychological diagnosis, e.g., depression, anxiety disorders

Physical Inactivity (NB-2.1)

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Updated: 2008 Edition

Excessive Physical Activity (NB-2.2)

Definition

Involuntary or voluntary physical activity or movement that interferes with energy needs, growth, or exceeds that which is necessary to achieve optimal health.

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Disordered eating
- Irrational beliefs/attitudes about food, nutrition, and fitness
- “Addictive” behaviors/personality

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
<i>Biochemical Data, Medical Tests and Procedures</i>	• ↑ Liver enzymes, e.g., LDH, AST • Altered micronutrient status, e.g., ↓ serum ferritin, zinc, and insulin-like growth factor-binding protein • ↑ Hematocrit • Possibly ↑ cortisol levels
<i>Anthropometric Measurements</i>	• Weight loss, arrested growth and development, failure to gain weight during period of expected growth (related usually to disordered eating)
<i>Nutrition-Focused Physical Findings</i>	• Depleted adipose and somatic protein stores (related usually to disordered eating) • Chronic muscle soreness
<i>Food/Nutrition-Related History</i>	Reports or observations of: • Continued/repeated high levels of exercise exceeding levels necessary to improve health and/or athletic performance • Exercise daily without rest/rehabilitation days • Exercise while injured/sick • Forsaking family, job, social responsibilities to exercise • Overtraining
<i>Client History</i>	• Conditions associated with a diagnosis or treatment, e.g., anorexia nervosa, bulimia nervosa, binge eating, eating disorder not otherwise specified, amenorrhea, stress fractures • Chronic fatigue • Evidence of addictive, obsessive, or compulsive tendencies • Suppressed immune function • Frequent and/or prolonged injuries and/or illnesses

Arrows used with laboratory values: ↑ represents above reference standard and ↓ represents below reference standard.

Excessive Physical Activity (NB-2.2)

References

1. Aissa-Benhaddad A, Bouix D, Khaled S, Micallef JP, Mercier J, Bringer J, Brun JF. Early hemorheologic aspects of overtraining in elite athletes. *Clin Hemorheol Microcirc*. 1999;20:117-125.
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8. Position of the American Dietetic Association: Nutrition intervention in the treatment of eating disorders. *J Am Diet Assoc*. 2011;111:1236-1241.
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11. Urhausen A, Kindermann W. Diagnosis of overtraining: what tools do we have. *Sports Med*. 2002;32:95-102.

Updated: 2009 Edition

Inability to Manage Self-Care (NB-2.3)

Definition

Lack of capacity or unwillingness to implement methods to support healthful food- and nutrition-related behavior.

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Food- and nutrition-related knowledge deficit concerning self-care
- Lack of social support for implementing changes
- Lack of developmental readiness to perform self-management tasks, e.g., pediatrics
- Lack of value for behavior change or competing values
- Perception that lack of resources (e.g., time, financial, or interpersonal) prevent self-care
- Cultural practices that affect ability to manage self-care
- Impaired cognitive ability, including learning disabilities, neurological or sensory impairment, and/or dementia
- Prior exposure to incompatible information
- Not ready for diet/lifestyle change
- Unwilling or disinterested in learning/applying information
- Lack of or limited access to self-management tools or decision guides

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
<i>Biochemical Data, Medical Tests and Procedures</i>	
<i>Anthropometric Measurements</i>	
<i>Nutrition-Focused Physical Findings</i>	
<i>Food/Nutrition-Related History</i>	Reports or observations of: • Inability to interpret data or self-management tools • Embarrassment or anger regarding need for self-monitoring • Uncertainty regarding changes could/should be made in response to data in self-monitoring records
<i>Client History</i>	• Diagnoses that are associated with self-management, e.g., diabetes mellitus, obesity, cardiovascular disease, renal or liver disease • Conditions associated with a diagnosis or treatment, e.g., cognitive or emotional impairment • New medical diagnosis or change in existing diagnosis or condition

Inability to Manage Self-Care (NB-2.3)

References

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Updated: 2013 Edition

Impaired Ability to Prepare Foods/Meals (NB-2.4)

Definition

Cognitive or physical impairment that prevents preparation of foods/fluids.

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Impaired cognitive ability, including learning disabilities, neurological or sensory impairment, and/or dementia
- Loss of mental or cognitive ability, e.g., dementia
- Physical disability
- High level of fatigue or other side effect of therapy

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
Biochemical Data, Medical Tests and Procedures	
Anthropometric Measurements	
Nutrition-Focused Physical Findings	
Food/Nutrition-Related History	Reports or observations of: • Decreased overall estimated intake • Excessive consumption of convenience foods, pre-prepared meals, and foods prepared away from home resulting in an inability to adhere to nutrition prescription • Uncertainty regarding appropriate foods to prepare based on nutrition prescription • Inability to purchase and transport foods to one's home
Client History	• Conditions associated with a diagnosis or treatment, e.g., cognitive impairment, cerebral palsy, paraplegia, vision problems, rigorous therapy regimen, recent surgery

References

1. Andren E, Grimby G. Activity limitations in personal, domestic and vocational tasks: a study of adults with inborn and early acquired mobility disorders. *Disabil Rehabil.* 2004;26:262-271.
2. Andren E, Grimby G. Dependence in daily activities and life satisfaction in adult subjects with cerebral palsy or spina bifida: a follow-up study. *Disabil Rehabil.* 2004;26:528-536.
3. Fortin S, Godbout L, Braun CM. Cognitive structure of executive deficits in frontally lesioned head trauma patients performing activities of daily living. *Cortex.* 2003;39:273-291.
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5. Position of the American Dietetic Association: Providing nutrition services for people with developmental disabilities and special health care needs. *J Am Diet Assoc.* 2010;110: 296-307.
6. Position of the American Dietetic Association: Food insecurity in the United States. *J Am Diet Assoc.* 2006;106:446-458.
7. Position of the American Dietetic Association: Addressing world hunger, malnutrition, and food insecurity. *J Am Diet Assoc.* 2003;103: 1046-1057.
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Updated: 2009 Edition

Poor Nutrition Quality of Life (NQOL) (NB-2.5)

Definition

Diminished patient/client perception of quality of life in response to nutrition problems and recommendations.

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Food and nutrition knowledge-related deficit
- Not ready for diet/lifestyle change
- Negative impact of current or previous medical nutrition therapy (MNT)
- Food or activity behavior-related difficulty
- Poor self-efficacy
- Altered body image
- Food insecurity
- Lack of social support for implementing changes

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
Biochemical Data, Medical Tests and Procedures	
Anthropometric Measurements	
Nutrition-Focused Physical Findings	
Food/Nutrition-Related History	Reports or observations of: • Unfavorable NQOL rating • Unfavorable ratings on measure of QOL, such as SF-36 (multipurpose health survey form with 36 questions) or EORTC QLQ-C30 (quality of life tool developed for patient/clients with cancer) • Food insecurity/unwillingness to use community services that are available • Frustration or dissatisfaction with MNT recommendations • Frustration over lack of control • Inaccurate or incomplete information related to MNT recommendations • Inability to change food- or activity-related behavior • Concerns about previous attempts to learn information • MNT recommendations affecting socialization • Unwillingness or disinterest in learning information
Client History	• New medical diagnosis or change in existing diagnosis or condition • Recent other lifestyle or life changes, e.g., quit smoking, initiated exercise, work change, home relocation • Lack of social and familial support • Ethnic and cultural related issues

Poor Nutrition Quality of Life (NQOL) (NB-2.5)

References

1. Aaronson NK, Ahmedzai S, Bullinger M. The EORTC core quality of life questionnaire: interim results of an international field study. In: Osoba D, ed. *Effect of Cancer on Quality of Life*. Boca Raton, FL: CRC Press; 1991:185-203.
2. Barr JT, Schumacher GE. The need for a nutrition-related quality-of-life measure. *J Am Diet Assoc*. 2003;103:177-180.
3. Barr JT, Schumacher GE. Using focus groups to determine what constitutes quality of life in clients receiving medical nutrition therapy: first steps in the development of a nutrition quality-of-life survey. *J Am Diet Assoc*. 2003;103:844-851.
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5. Position of the American Dietetic Association on food insecurity in the United States. *J Am Diet Assoc*. 2010;110:1368-1377.

Updated: 2008 Edition

Self-Feeding Difficulty (NB-2.6)

Definition

Impaired actions to place food or beverages in mouth.

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Physiological difficulty causing inability to physically grasp cups and utensils, support and/or control head and neck, coordinate hand movement to mouth, close lips (or any other suckling issue), bend elbow or wrist, sit with hips square and back straight
- Limited physical strength or range of motion
- Lack of or limited access to foods and/or adaptive eating devices conducive for self-feeding
- Limited vision
- Impaired cognitive ability, including learning disabilities, neurological or sensory impairment, and/or dementia
- Reluctance or avoidance of self-feeding

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
<i>Biochemical Data, Medical Tests and Procedures</i>	
<i>Anthropometric Measurements</i>	• Weight loss
<i>Nutrition-Focused Physical Findings</i>	• Dry mucous membranes, hoarse or wet voice, tongue extrusion • Poor lip closure, drooling • Shortness of breath
<i>Food/Nutrition-Related History</i>	Reports or observations of: • Being provided with foods that may not be conducive to self-feeding, e.g., peas, broth-type soups • Dropping of cups, utensils • Emotional distress, anxiety, or frustration surrounding mealtimes • Failure to recognize foods • Forgets to eat • Less than optimal use of food • Refusal to eat or chew • Dropping of food from utensil (splashing and spilling of food) on repeated attempts to feed • Lack of strength or stamina to lift utensils and/or cup • Utensil biting • Absence of recommended adaptive eating devices

Self-Feeding Difficulty (NB-2.6)

<i>Client History</i>	• Conditions associated with a diagnosis or treatment, e.g., neurological disorders, Parkinson's, Alzheimer's, Tardive dyskinesia, multiple sclerosis, stroke, paralysis, developmental delay • Physical limitations, e.g., fractured arms, traction, contractures • Surgery requiring recumbent position • Dementia/organic brain syndrome • Dysphagia • Tremors
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References

1. Consultant Dietitians in Healthcare Facilities. *Dining Skills Supplement: Practical Interventions for Caregivers of Eating Disabled Older Adults*. Pensacola, FL: American Dietetic Association; 1992.
2. Morley JE. Anorexia of aging: physiological and pathologic. *Am J Clin Nutr*. 1997;66:760-773.
3. Position of the American Dietetic Association: Providing nutrition services for people with developmental disabilities and special health care needs. *J Am Diet Assoc*. 2010;110: 296-307.
4. Sandman P, Norberg A, Adolfsson R, Eriksson S, Nystrom L. Prevalence and characteristics of persons with dependency on feeding at institutions. *Scand J Caring Sci*. 1990;4:121-127.
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6. Vellas B, Fitten LJ, eds. *Research and Practice in Alzheimer's Disease*. New York, NY: Springer Publishing Company; 1998.

Updated: 2009 Edition

Intake of Unsafe Food (NB-3.1)

Definition

Intake of food and/or fluids intentionally or unintentionally contaminated with toxins, poisonous products, infectious agents, microbial agents, additives, allergens, and/or agents of bioterrorism.

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Food and nutrition-related knowledge deficit concerning potentially unsafe food
- Lack of knowledge about proper food/feeding, (infant and enteral formula, breastmilk*) storage, and preparation
- Exposure to contaminated water or food, e.g., community outbreak of illness documented by surveillance and/or response agency
- Mental illness, confusion, or altered awareness
- Lack of or limited access to food storage equipment/facilities, e.g., refrigerator
- Lack of or limited access to safe food supply, e.g., inadequate markets with safe, uncontaminated food

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
<i>Biochemical Data, Medical Tests and Procedures</i>	• Positive stool culture for infectious causes, such as listeria, salmonella, hepatitis A, E. coli, cyclospora • Toxicology reports for drugs, medicinals, poisons in blood or food samples
<i>Anthropometric Measurements</i>	
<i>Nutrition-Focused Physical Findings</i>	• Evidence of dehydration, e.g., dry mucous membranes, damaged tissues • Diarrhea, cramping, bloating, fever, nausea, vomiting, vision problems, chills, dizziness, headache
<i>Food/Nutrition-Related History</i>	Reports or observations of: • Fish suspected to contain mercury (pregnant and lactating women) • Nonfood items (pregnant and lactating women) • Raw eggs, unpasteurized milk products, soft cheeses, undercooked meats (infants, children, immunocompromised persons, pregnant and lactating women, and elderly) • Wild plants, berries, mushrooms • Unsafely stored and prepared foods or products (enteral and infant formula, breastmilk) • Mislabelled or unlabeled foods • Verbalizes inaccurate or incomplete knowledge
<i>Client History</i>	• Conditions associated with a diagnosis or treatment, e.g., foodborne illness such as bacterial, viral, or parasitic infection, mental illness, dementia • Poisoning by drugs, medicinals, and biological substances • Poisoning from poisonous food stuffs and poisonous plants • Cardiac, neurologic, respiratory changes

*If a synonym for the term "breastmilk" is helpful or needed, an approved alternate is "human milk."

Intake of Unsafe Food (NB-3.1)

References

1. Centers for Disease Control and Prevention. Diagnosis and Management of Foodborne Illnesses: A Primer for Physicians and Other Health Care Professionals. Available at: www.cdc.gov/mmwr/preview/mmwrhtml/rr5304a1.htm. Accessed July 2, 2004.
2. Partnership for Food Safety Education. Available at: <http://www.fightbac.org>. Accessed January 26, 2012.
3. Position of the American Dietetic Association: Food and water safety. *J Am Diet Assoc.* 2009;109: 1449-1460.

Updated: 2013 Edition

Limited Access to Food and/or Water (NB-3.2)

Definition

Diminished ability to acquire a sufficient quantity and variety of healthful food and/or potable water based on dietary reference intake standards (e.g., Dietary Reference Intakes), national food guidelines (e.g., US Dietary Guidelines, MyPlate) or as defined in the nutrition prescription.

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Caregiver intentionally or unintentionally not providing access to food and/or water, e.g., unmet needs for food or eating assistance, excess of poor nutritional quality food, abuse/neglect
- Community and geographical constraints for shopping and transportation
- Food and nutrition-related knowledge deficit concerning sufficient quantity or variety of culturally appropriate healthful food and/or water
- Lack of financial resources or lack of access to financial resources to purchase a sufficient quantity or variety of culturally appropriate healthful foods and/or water
- Lack of food planning, purchasing, and preparation skills
- Limited, absent, or lack of participation in community supplemental food or other programs, e.g., food pantries, emergency kitchens, or shelters
- Failure to participate in federal food programs, e.g., WIC, National School Breakfast/Lunch Program, food stamps
- Schools lacking nutrition/wellness policies or application of policies ensuring convenient, appetizing, competitively priced culturally appropriate healthful foods at meals, snacks, and school-sponsored activities.
- Physical or psychological limitations that diminish ability to shop, e.g., walking, sight, mental/emotional health
- Limitation to food because of concerns about weight or aging

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
<i>Biochemical Data, Medical Tests and Procedures</i>	• Indicators of macronutrient or vitamin/mineral status as indicated by biochemical findings • Evidence of dehydration, e.g., dry mucous membranes, poor skin turgor
<i>Anthropometric Measurements</i>	• Growth failure, based on reference growth standards, e.g., National Center for Health Statistics (NCHS) • Underweight: BMI < 18.5 (adults) • Unintentional weight loss: adults, of > 10% in 6 months, > 5% in 1 month; any unintentional weight loss in children • Overweight/obesity: BMI > 25 (adults), > 95 percentile (pediatrics)
<i>Nutrition-Focused Physical Findings</i>	• Findings consistent with vitamin/mineral deficiency • Hunger, thirst

Limited Access to Food and/or Water (NB-3.2)

<i>Food/Nutrition-Related History</i>	Reports or observations of: • Food faddism or unsupported beliefs and attitudes of parent or caregiver • Belief that aging can be slowed by dietary limitations and extreme exercise • Estimated inadequate intake of food and/or specific nutrients • Limited supply of food and/or water in home • Limited variety of foods • Lack of resources for food and/or water • Lack of transportation or other community constraints limiting availability of food and/or water • Lack of knowledge or skills on how to use food • Lack of knowledge or skills on how to apply and/or participate in food and/or water assistance programs • Behaviors consistent with food insecurity (e.g., skipping meals, buying low-cost food items, changes in eating patterns, rituals, or customs)
<i>Client History</i>	• Malnutrition, vitamin/mineral deficiency • Illness or physical disability • Conditions associated with a diagnosis or treatment, e.g., mental illness, dementia • Lack of suitable support systems

References

1. Institute of Medicine. *Dietary Reference Intakes for Water, Potassium, Sodium, Chloride, and Sulfate*. Washington, DC: National Academies Press; 2002.
2. Position of the American Dietetic Association: Food insecurity and hunger in the United States. *J Am Diet Assoc*. 2006;106:446-458.
3. Position of the American Dietetic Association: Addressing world hunger, malnutrition, and food insecurity. *J Am Diet Assoc*. 2003;103:1046-1057.
4. US Department of Agriculture and Health and Human Services. Dietary Guidelines for Americans, 2010. Available at: <http://www.cnpp.usda.gov/dietaryguidelines.htm>. Accessed: January 24, 2012.
5. US Department of Agriculture Human Nutrition Information Service. MyPlate. 2011. Available at: <http://www.choosemyplate.gov>. Accessed January 24, 2012.

Updated: 2013 Edition

Limited Access to Nutrition-Related Supplies (NB-3.3)

Definition

Diminished ability to acquire nutrition-related supplies based on identified needs.

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Caregiver intentionally or unintentionally not providing access to nutrition-related supplies, e.g., unmet needs, abuse/neglect
- Community and geographical constraints for shopping and transportation to obtain nutrition-related supplies
- Food and nutrition-related knowledge deficit concerning nutrition-related supplies
- Lack of financial resources or lack of access to financial resources to purchase nutrition-related supplies
- Limited, absent, or failure to participate in community or other programs that provide access to nutrition-related supplies
- Physical or psychological limitations that diminish ability to shop, e.g., walking, sight, mental/emotional health

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
<i>Biochemical Data, Medical Tests and Procedures</i>	• Abnormal biochemical findings consistent with vitamin/mineral deficiency
<i>Anthropometric Measurements</i>	• Growth failure, based on reference growth standards, e.g. National Center for Health Statistics (NCHS) • Underweight: BMI <18.5 (adults) • Unintentional weight loss: adults, of > 10% in 6 months, > 5% in 1 month; any unintentional weight loss in children
<i>Nutrition-Focused Physical Findings</i>	• Findings consistent with vitamin/mineral deficiency • Hunger, thirst • Evidence of dehydration, e.g., dry mucous membranes, poor skin turgor
<i>Food/Nutrition-Related History</i>	Reports or observations of: • Food faddism or unsupported beliefs and attitudes of parent or caregiver • Limited supply of nutrition-related supplies (e.g., glucose testing strips, meter, assistive eating devices, assistive cooking devices) in home • Transportation or other community constraints limiting availability of nutrition-related supplies • Lack of knowledge or skills on how to use nutrition-related supplies • Lack of knowledge or skills on how to apply and/or participate in nutrition-related supply assistance programs

Limited Access to Nutrition-Related Supplies (NB-3.3)

<i>Client History</i>	• Malnutrition, vitamin/mineral deficiency • Illness or physical disability • Conditions associated with a diagnosis or treatment, e.g., mental illness, dementia • Lack of suitable support systems • Resource constraints for obtaining nutrition-related supplies
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References

1. Position of the American Dietetic Association: Food insecurity in the United States. *J Am Diet Assoc.* 2010;110:1368-1377.
2. Position of the American Dietetic Association: Addressing world hunger, malnutrition, and food insecurity. *J Am Diet Assoc.* 2003;103:1046-1057.

Created: 2011 Edition

No Nutrition Diagnosis At This Time (NO-1.1)

Definition

Absence of a current nutrition problem warranting a nutrition intervention. This determination results from a nutrition assessment.

Note: This nutrition diagnostic term is not appropriate if additional information for the nutrition assessment is needed or pending.

Etiology (Cause/Contributing Risk Factors)

Factors gathered during the nutrition assessment process that contribute to the existence or the maintenance of pathophysiological, psychosocial, situational, developmental, cultural, and/or environmental problems:

- Not applicable

Signs/Symptoms (Defining Characteristics)

A typical cluster of subjective and objective signs and symptoms gathered during the nutrition assessment process that provide evidence that a problem exists; quantify the problem and describe its severity.

Nutrition Assessment Category	Potential Indicators of This Nutrition Diagnosis (one or more must be present)
Biochemical Data, Medical Tests and Procedures	Not applicable
Anthropometric Measurements	Not applicable
Nutrition-Focused Physical Findings	Not applicable
Food/Nutrition-Related History	Not applicable
Client History	• Conditions associated with a diagnosis or treatment, e.g., palliative/end-of-life care

References

1. Writing Group of the Nutrition Care Process/Standardized Language Committee. Nutrition Care Process part II: Using the International Dietetics and Nutrition Terminology to document the nutrition care process. *J Am Diet Assoc.* 2008;108:1287-1293.

Created: 2013 Edition

Nutrition Intervention Terminology

Each term has an Academy unique identifier, a five-digit number (e.g., 99999) following the alpha-numeric IDNT code. Neither should be visible in nutrition documentation. The Academy unique identifier is for data tracking purposes in electronic records.

Nutrition Prescription

NP-1.1

10794

The patient/client's individualized recommended dietary intake of energy and/or selected foods or nutrients based on current reference standards and dietary guidelines and the patient/client's health condition and nutrition diagnosis (*specify*).

FOOD AND/OR NUTRIENT DELIVERY

Individualized approach for food/nutrient provision.

ND

Meals and Snacks (1)

Regular eating episode (meal); food served between regular meals (snack).

☐ General/healthful diet	ND-1.1	10489
☐ Composition of meals/snacks	ND-1.2	
☐ Texture-modified diet (1)		10829
☐ Energy-modified diet (2)		10830
☐ Protein-modified diet (3)		10831
☐ Carbohydrate-modified diet (4)		10832
☐ Fat-modified diet (5)		10833
☐ Fiber-modified diet (6)		10834
☐ Fluid-modified diet (7)		10835
☐ Diets modified for specific foods or ingredients (8)		10836
☐ Vitamin-modified diet (9)		10837
☐ Mineral-modified diet (10)		10838
☐ Schedule of food/fluids	ND-1.3	10815
☐ Specific foods/beverages or groups	ND-1.4	10492
☐ Other	ND-1.5	10493
(specify) _____		

Enteral and Parenteral Nutrition (2)

Nutrition provided through the GI tract via tube, catheter, or stoma (enteral) or intravenously (centrally or peripherally) (parenteral).

Enteral Nutrition (2.1)

Nutrition provided through the GI tract.

☐ Composition	ND-2.1.1	10503
☐ Concentration	ND-2.1.2	10502
☐ Rate	ND-2.1.3	10500
☐ Volume	ND-2.1.4	10501
☐ Schedule	ND-2.1.5	10504
☐ Route	ND-2.1.6	10792
☐ Insert enteral feeding tube	ND-2.1.7	10497
☐ Site care	ND-2.1.8	10498
☐ Feeding tube flush	ND-2.1.9	10499

Parenteral Nutrition/IV Fluids (2.2)

Nutrition and fluids provided intravenously.

☐ Composition	ND-2.2.1	10511
☐ Concentration	ND-2.2.2	10510
☐ Rate	ND-2.2.3	10509
☐ Schedule	ND-2.2.4	10512
☐ Route	ND-2.2.5	10793
☐ Site care	ND-2.2.6	10507
☐ IV fluids	ND-2.2.7	10508

Supplements (3)

Medical Food Supplements (3.1)

Commercial or prepared foods or beverages that supplement energy, protein, carbohydrate, fiber, fat intake.

☐ Commercial beverage	ND-3.1.1	10515
☐ Commercial food	ND-3.1.2	10516
☐ Modified beverage	ND-3.1.3	10517
☐ Modified food	ND-3.1.4	10518
☐ Purpose	ND-3.1.5	10519
(specify) _____		

Vitamin and Mineral Supplements (3.2)

Supplemental vitamins or minerals.

☐ Multivitamin/mineral		ND-3.2.1	10521
☐ Multi-trace elements		ND-3.2.2	10522
☐ Vitamin		ND-3.2.3	
☐ A (1)	10524	☐ Niacin (8)	10531
☐ C (2)	10525	☐ Folate (9)	10532
☐ D (3)	10526	☐ B6 (10)	10533
☐ E (4)	10527	☐ B12 (11)	10534
☐ K (5)	10528	☐ Pantothenic acid (12)	10535
☐ Thiamin (6)	10529	☐ Biotin (13)	10536
☐ Riboflavin (7)	10530		
☐ Mineral		ND-3.2.4	
☐ Calcium (1)	10539	☐ Fluoride (10)	10548
☐ Chloride (2)	10540	☐ Copper (11)	10549
☐ Iron (3)	10541	☐ Iodine (12)	10550
☐ Magnesium (4)	10542	☐ Selenium (13)	10551
☐ Potassium (5)	10543	☐ Manganese (14)	10552
☐ Phosphorus (6)	10544	☐ Chromium (15)	10553
☐ Sodium (7)	10545	☐ Molybdenum (16)	10554
☐ Zinc (8)	10546	☐ Boron (17)	10555
☐ Sulfate (9)	10547	☐ Cobalt (18)	10556

Bioactive Substance Management (3.3)

Addition or change in provision of bioactive substances

☐ Plant stanol esters	ND-3.3.1	10559
☐ Plant sterol esters	ND-3.3.2	10816
☐ Soy protein	ND-3.3.3	10561
☐ Psyllium	ND-3.3.4	10817
☐ β -glucan	ND-3.3.5	10563
☐ Food additives (specify)	ND-3.3.6	10564
☐ Alcohol	ND-3.3.7	10565
☐ Caffeine	ND-3.3.8	10566
☐ Other (specify)	ND-3.3.9	10567

Feeding Assistance (4)

Accommodation or assistance in eating.

☐ Adaptive eating device	ND-4.1	10808
☐ Feeding position	ND-4.2	10570
☐ Meal set-up	ND-4.3	10571
☐ Mouth care	ND-4.4	10572
☐ Menu selection assistance	ND-4.5	10809
☐ Other	ND-4.6	10573
(specify) _____		

Feeding Environment (5)

Adjustment of the factors where food is served that impact food consumption.

☐ Lighting	ND-5.1	10575
☐ Odors	ND-5.2	10576
☐ Distractions	ND-5.3	10577
☐ Table height	ND-5.4	10578
☐ Table service	ND-5.5	10849
☐ Room temperature	ND-5.6	10580
☐ Meal service	ND-5.7	10810
☐ Meal location	ND-5.8	10811
☐ Other	ND-5.9	10581
(specify) _____		

Nutrition Intervention Terminology, cont'd

Nutrition-Related Medication Management (6)

Modification of a medication or complementary/alternative medicine to optimize patient/client nutritional or health status.

- | | | |
|---|--------|-------|
| ☐ Prescription medications | ND-6.1 | 10839 |
| ☐ OTC medication | ND-6.2 | 10584 |
| ☐ Nutrition-related complementary/alternative medicine | ND-6.3 | 10799 |

NUTRITION EDUCATION

E

Formal process to instruct or train patients/clients in a skill or to impart knowledge to help patients/clients voluntarily manage or modify food, nutrition and physical activity choices and behavior to maintain or improve health.

Nutrition Education—Content (1)

Instruction or training intended to lead to nutrition-related knowledge.

- | | | |
|---|-------|-------|
| ☐ Purpose of the nutrition education | E-1.1 | 10588 |
| ☐ Priority modifications | E-1.2 | 10589 |
| ☐ Survival information | E-1.3 | 10590 |
| ☐ Nutrition relationship to health/disease | E-1.4 | 10591 |
| ☐ Recommended modifications | E-1.5 | 10592 |
| ☐ Other or related topics | E-1.6 | 10593 |
| ☐ Other | E-1.7 | 10594 |
- (specify) _____

Nutrition Education—Application (2)

Instruction or training leading to nutrition-related result interpretation or skills.

- | | | |
|--|-------|-------|
| ☐ Result interpretation | E-2.1 | 10596 |
| ☐ Skill development | E-2.2 | 10597 |
| ☐ Other | E-2.3 | 10598 |
- (specify) _____

NUTRITION COUNSELING

C

A supportive process, characterized by a collaborative counselor–patient/client relationship to establish food, nutrition and physical activity priorities, goals, and individualized action plans that acknowledge and foster responsibility for self-care to treat an existing condition and promote health.

Theoretical Basis/Approach (1)

The theories or models used to design and implement an intervention.

- | | | |
|---|-------|-------|
| ☐ Cognitive-Behavioral Theory | C-1.1 | 10601 |
| ☐ Health Belief Model | C-1.2 | 10602 |
| ☐ Social Learning Theory | C-1.3 | 10603 |
| ☐ Transtheoretical Model/ Stages of Change | C-1.4 | 10604 |
| ☐ Other | C-1.5 | 10605 |
- (specify) _____

Strategies (2)

Selectively applied evidence-based methods or plans of action designed to achieve a particular goal.

- | | | |
|---|--------|-------|
| ☐ Motivational interviewing | C-2.1 | 10607 |
| ☐ Goal setting | C-2.2 | 10608 |
| ☐ Self-monitoring | C-2.3 | 10609 |
| ☐ Problem solving | C-2.4 | 10610 |
| ☐ Social support | C-2.5 | 10611 |
| ☐ Stress management | C-2.6 | 10612 |
| ☐ Stimulus control | C-2.7 | 10613 |
| ☐ Cognitive restructuring | C-2.8 | 10614 |
| ☐ Relapse prevention | C-2.9 | 10615 |
| ☐ Rewards/contingency management | C-2.10 | 10616 |
| ☐ Other | C-2.11 | 10617 |
- (specify) _____

COORDINATION OF NUTRITION CARE

RC

Consultation with, referral to, or coordination of nutrition care with other providers, institutions, or agencies that can assist in treating or managing nutrition-related problems.

Collaboration and Referral of Nutrition Care (1)

Facilitating services with other professionals, institutions, or agencies during nutrition care.

- | | | |
|---|--------|-------|
| ☐ Team meeting | RC-1.1 | 10620 |
| ☐ Referral to RD with different expertise | RC-1.2 | 10621 |
| ☐ Collaboration with other nutrition professionals | RC-1.3 | 10622 |
| ☐ Collaboration with other providers | RC-1.4 | 10623 |
| ☐ Referral to other providers | RC-1.5 | 10624 |
| ☐ Referral to community agencies/programs | RC-1.6 | 10625 |
- (specify) _____

Discharge and Transfer of Nutrition Care to New Setting or Provider (2)

Discharge planning and transfer of nutrition care from one level or location of care to another.

- | | | |
|---|--------|-------|
| ☐ Discharge and transfer to other providers | RC-2.1 | 10813 |
| ☐ Discharge and transfer to community agencies/programs | RC-2.2 | 10814 |
| ☐ Discharge and transfer to another nutrition professional | RC-2.3 | 10627 |

Nutrition Intervention Terms and Definitions

Term	Term Number	Definition	Pages
DOMAIN: FOOD AND/OR NUTRIENT DELIVERY	ND	Individualized approach for food/nutrient provision.	
<i>Class: Meals and Snacks (1)</i>	ND-1	Meals are defined as regular eating episodes that may include a variety of foods consisting of grains and/or starches, meat and/or meat alternatives, fruits and vegetables, and milk or milk products. A snack is defined as food served between regular meals	372-373
<i>Class: Enteral and Parenteral Nutrition (2)</i>	ND-2	Enteral nutrition is defined as nutrition provided through the gastrointestinal (GI) tract via tube, catheter, or stoma that delivers nutrients distal to the oral cavity. Parenteral nutrition is defined as the administration of nutrients intravenously, centrally (delivered into a large-diameter vein, usually the superior vena cava adjacent to the right atrium) or peripherally (delivered into a peripheral vein, usually of the hand or forearm).	
Enteral Nutrition	ND-2.1	Nutrition provided through the gastrointestinal (GI) tract via tube, catheter, or stoma that delivers nutrients distal to the oral cavity.	374-375
Parenteral Nutrition/ IV Fluids	ND-2.2	Administration of nutrients and fluids intravenously, centrally (delivered into a large-diameter vein, usually the superior vena cava adjacent to the right atrium) or peripherally (delivered into a peripheral vein, usually of the hand or forearm).	376-377
<i>Class: Supplements (3)</i>	ND-3	Foods or nutrients that are not intended as a sole (only) item or a meal or diet, but that are intended to provide additional nutrients.	
Medical Food Supplements	ND-3.1	Commercial or prepared foods or beverages intended to supplement energy, protein, carbohydrate, fiber, and/or fat intake that may also contribute to vitamin and mineral intake.	378-379
Vitamin and Mineral Supplements	ND-3.2	A product that is intended to supplement vitamin or mineral intake.	380-381
Bioactive Substance Management	ND-3.3	Addition or change in provision of bioactive substances (e.g., plant stanol and sterol esters, psyllium, food additives, other bioactive substances).	382
<i>Class: Feeding Assistance (4)</i>	ND-4	Accommodation or assistance in eating designed to restore the patient/client's ability to eat independently, support adequate nutrient intake, and reduce the incidence of unplanned weight loss and dehydration.	383-384

Term	Term Number	Definition	Pages
<i>Class: Feeding Environment (5)</i>	ND-5	Adjustment of the physical environment, temperature, convenience, and attractiveness of the location where food is served that impacts food consumption.	385-386
<i>Class: Nutrition-Related Medication Management (6)</i>	ND-6	Modification of a drug or complementary/alternative medicine to optimize patient/client nutritional or health status.	387
DOMAIN: NUTRITION EDUCATION	E	Formal process to instruct or train patients/clients in a skill or to impart knowledge to help patients/clients voluntarily manage or modify food, nutrition and physical activity choices and behavior to maintain or improve health.	
<i>Class: Nutrition Education–Content (1)</i>	E-1	Instruction or training intended to lead to nutrition-related knowledge. <i>Note: This reference sheet only refers to patient/client nutrition education. Please use Nutrition Counseling (C) for documentation of the Theoretical Basis/Approach (C-1) and Strategies (C-2) used for patient/client behavior change.</i>	388-389
<i>Class: Nutrition Education–Application (2)</i>	E-2	Instruction or training intended to lead to nutrition-related result interpretation or skills. <i>Note: This reference sheet only refers to patient/client nutrition education. Please use Nutrition Counseling (C) for documentation of the Theoretical Basis/Approach (C-1) and Strategies (C-2) used for patient/client behavior change.</i>	390-391
DOMAIN: NUTRITION COUNSELING	C	A supportive process, characterized by a collaborative counselor–patient/client relationship to establish food, nutrition and physical activity priorities, goals, and individualized action plans that acknowledge and foster responsibility for self-care to treat an existing condition and promote health.	
<i>Class: Theoretical Basis/Approach (1)</i>	C-1	The theories or models used to design and implement an intervention. Theories and theoretical models consist of principles, constructs, and variables, which offer systematic explanations of the human behavior change process. Behavior change theories and models provide a research-based rationale for designing and tailoring nutrition interventions to achieve the desired effect. A theoretical framework for curriculum and treatment protocols, it guides determination of: (1) what information patients/clients need at different points in the behavior change process, (2) what tools and strategies may be best applied to facilitate behavior change, and (3) outcome measures to assess effectiveness in interventions or components of interventions.	392-402

Term	Term Number	Definition	Pages
<i>Class: Strategies (2)</i>	C-2	An evidence-based method or plan of action designed to achieve a particular goal. Application of behavior change theories in nutrition practice has provided practitioners with a collection of evidence-based strategies to promote behavior change. Some strategies target change in motivation and intention to change, and others target behavior change. Food and nutrition professionals selectively apply strategies based on patient/client goals and objectives, and their personal counseling philosophy and skill.	403-410
DOMAIN: COORDINATION OF NUTRITION CARE	RC	Consultation with, referral to, or coordination of nutrition care with other providers, institutions, or agencies that can assist in treating or managing nutrition-related problems.	
<i>Class: Collaboration and Referral of Nutrition Care (1)</i>	RC-1	Facilitating services or interventions with other professionals, institutions, or agencies on behalf of the patient/client prior to discharge from nutrition care.	411-412
<i>Class: Discharge and Transfer of Nutrition Care to New Setting or Provider (2)</i>	RC-2	Discharge planning and transfer of nutrition care from one level or location of care to another.	413-414

Nutrition Prescription (NP-1.1)

Definition

The patient/client's recommended dietary intake of energy and/or selected foods or nutrients based on current reference standards and dietary guidelines and the patient/client's health condition and nutrition diagnosis

Purpose

To communicate the nutrition professional's diet/nutrition recommendation based on a nutrition assessment

Indicators

- Recommended regular diet
- Recommended modified diet
 - Recommended energy/nutrient modification
 - Calorie modification (specify, e.g., calories/day, calories/kg/day)
 - Recommended carbohydrate modification
 - Carbohydrate controlled diet (specify, e.g., distribution)
 - Amount (specify, e.g., grams/day, grams/kg/min, percent of calories)
 - Other (specify, e.g., no concentrated sweets)
 - Recommended protein level (specify, e.g., grams/day, grams/kg/day, percent of calories)
 - Recommended fat level (specify, e.g., grams/day, grams/kg/day, percent of calories)
 - Fat restricted diet (specify, e.g., grams/day)
 - Therapeutic lifestyle change diet
 - Recommended saturated fat level (specify, e.g., grams/day, percent of calories)
 - Recommended unsaturated fat level (specify, e.g., grams/day, percent of calories)
 - Recommended cholesterol intake (specify, e.g., mg/day)
- Recommended vitamin intake

• Vitamin A (specify form, µg or RE, frequency) • Vitamin C (mg/ day, frequency) • Vitamin D (specify form, µg or IU, frequency) • Vitamin E (specify form, mg or IU, frequency) • Vitamin K (µg, frequency) • Thiamin (mg, frequency) • Riboflavin (mg, frequency) • Multivitamin (yes/no, specify dose, frequency)	• Niacin (specify form, mg, frequency) • Vitamin B6 (specify form, mg, frequency) • Folate (specify form, µg, frequency) • Vitamin B12 (µg, frequency) • Pantothenic acid (mg, frequency) • Biotin (µg, frequency)
---	---
- Recommended mineral intake

• Calcium (specify form, mg, frequency) • Copper (µg or mg, frequency) • Fluoride (mg, frequency) • Iodine (µg, frequency) • Iron (specify form, mg, frequency) • Magnesium (mg, frequency) • Phosphorus (mg, frequency) • Sulfate (g or mmol, frequency) • Manganese (mg, frequency) • Multi-mineral (yes/no, specify dose, frequency) • Multi-trace element (yes/no, specify dose, frequency)	• Molybdenum (µg, frequency) • Boron (mg, frequency) • Cobalt (µg, frequency) • Selenium (specify form, µg, frequency) • Zinc (mg, frequency) • Potassium (specify form, g or mg, frequency) • Sodium (mg or g, frequency) • Chloride (mg, frequency) • Chromium (specify form, µg, frequency)
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Nutrition Prescription (NP-1.1)

- Recommended fluid level (specify, e.g., oz or mL/day, mL/kg/day, mL per calories/kcal/kJ expended, mL/m²/day, mL output)
- Recommended fiber level (specify, e.g., type, grams/day, grams/1,000 calories/kcal/kJ per day)
- Recommended level of bioactive substances (specify, e.g., substance, amount)
- Recommended enteral nutrition order (specify, e.g., formula, rate/schedule)
 - Tube feeding modulars (specify, e.g., carbohydrate, protein, fat, fiber)
- Recommended parenteral nutrition order (specify, e.g., solution, rate, access)
- Recommended liquid diet
 - Clear liquid
 - Full liquid
- Recommended texture modification (specify, e.g., mechanical soft, puree)
- Recommended liquid consistency modification (specify, e.g., thin, nectar, honey, pudding)
- Recommended food intake
 - Grain group intake (specify, e.g., servings, exchanges, amounts)
 - Fruit and vegetable intake (specify, e.g., servings, exchanges, amounts)
 - Meat, poultry, fish, eggs, beans, nut intake (specify, e.g., servings, exchanges, amounts)
 - Milk and milk product intake (specify, e.g., servings, exchanges, amounts)
 - Fat foods (specify, e.g., type, servings, exchanges, amounts)

Note: The nutrition prescription can be used as a comparative standard for nutrition assessment and nutrition monitoring and evaluation.

References

The following are some suggested references; other references may be appropriate.

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Nutrition Prescription (NP-1.1)

References, cont'd

12. Gartner LM, Greer FR, American Academy of Pediatrics Committee on Nutrition. Prevention of rickets and vitamin D deficiency: new guidelines for vitamin D intake. *Pediatrics*. 2003;111:908-10.
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14. Institute of Medicine, Food and Nutrition Board. *Dietary Reference Intakes for Calcium, Phosphorus, Magnesium, Vitamin D, and Fluoride*. Washington, DC: National Academies Press; 1997.
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Meals and Snacks (ND-1)

Definition

Meals are defined as regular eating episodes that may include a variety of foods consisting of grains and/or starches, meat and/or meat alternatives, fruits and vegetables, and milk or milk products. A snack is defined as food served between regular meals.

Details of Intervention

A typical intervention might be further described with the following details. RDs/food and nutrition professionals recommend, implement, or order nutrition interventions and the action(s) may be to initiate, modify or discontinue a nutrition intervention(s):

- General/healthful diet
- Composition of meals/snacks
 - Texture-modified diet
 - Energy-modified diet
 - Protein-modified diet
 - Carbohydrate-modified diet
 - Fat-modified diet
 - Fiber-modified diet
 - Fluid-modified diet
 - Diets modified for specific foods or ingredients
 - Vitamin-modified diet
 - Mineral-modified diet
- Schedule of food/fluids (e.g., timing of foods/fluids, number of meals)
- Specific food/beverages or groups
- Other, specify

Typically Used with the Following

Nutrition Diagnostic Terminology Used in PES Statements	Common Examples (not intended to be inclusive)
<i>Nutrition Diagnoses</i>	• Increased energy expenditure (NI-1.1) • Excessive fat intake (NI-5.6.2) • Excessive carbohydrate intake (NI-5.8.2) • Inconsistent carbohydrate intake (NI-5.8.4)
<i>Etiology</i>	• Lack of access to healthful food choices, e.g., food provided by caregiver • Physiological causes, e.g., increased energy needs due to increased activity level or metabolic change, malabsorption • Psychological causes, e.g., disordered eating • Difficulty chewing, swallowing, extreme weakness

Meals and Snacks (ND-1)

<i>Signs and Symptoms</i>	Biochemical Data, Medical Tests and Procedures • Serum cholesterol level • Hemoglobin A1C results Physical Assessment • Weight change • Dental caries • Diarrhea in response to carbohydrate feeding Food/Nutrition History • Cultural or religious practices that do not support modified food/nutrition intake • Changes in physical activity • Intake of less than optimal foods Client History • Conditions associated with diagnosis or treatment, e.g., surgery, trauma, sepsis, diabetes mellitus, inborn errors of metabolism, digestive enzyme deficiency, obesity • Chronic use of medications that increase or decrease nutrient requirements or impair nutrient metabolism
----------------------------------	--

Other considerations (e.g., patient/client negotiation, patient/client needs and desires, and readiness to change)

- Compliance skills and abilities
- Economic concerns with purchasing special food items
- Willingness/ability to change behavior to comply with diet
- Availability/access to a qualified practitioner for follow-up and monitoring

References

1. Lacey K, Pritchett E. Nutrition Care Process and Model: ADA adopts road map to quality care and outcomes management. *J Am Diet Assoc.* 2003;103:1061-1071.

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Enteral Nutrition (ND-2.1)

Definition

Nutrition provided through the gastrointestinal (GI) tract via tube, catheter, or stoma that delivers nutrients distal to the oral cavity.

Details of Intervention

A typical intervention might be further described with the following details. RDs/food and nutrition professionals recommend, implement, or order nutrition interventions and the action(s) may be to initiate, modify or discontinue a nutrition intervention(s):

- Composition: formula name or description, special additives including supplemental fat, carbohydrate, or protein, fiber or other (specify)
- Concentration (e.g., calories/kcal/kJ per mL)
- Rate (e.g., mL/hour)
- Volume (e.g., mL/day, mL/feeding)
- Schedule (e.g., number of hours per 24 hours, continuous, intermittent, bolus)
- Route (e.g., nasoenteric, oroenteric, percutaneous, or surgical access with gastric, duodenal or jejunal placement)
- Insert enteral feeding tube
- Site care (e.g., change dressings and provide enteral feeding tube site care)
- Feeding tube flush (e.g., type, volume mL/flush, frequency)

Note: Related nutrition interventions, e.g., checking gastric residual volume or elevating the head of the bed are documented using Coordination of Nutrition Care

Typically Used with the Following

Nutrition Diagnostic Terminology Used in PES Statements	Common Examples (not intended to be inclusive)
<i>Nutrition Diagnoses</i>	• Swallowing difficulties (NC-1.1) • Altered GI function (NC-1.4) • Inadequate oral intake (NI-2.1) • Inadequate enteral nutrition infusion (NI-2.3)
<i>Etiology</i>	• Altered gastrointestinal tract function, inability to absorb nutrients • Inability to chew/swallow
<i>Signs and Symptoms</i>	Physical Assessment • Weight loss > 10% in 6 months, > 5% in 1 month • Obvious muscle wasting • Skin turgor (tenting, edema) • Growth failure • Insufficient maternal weight gain • BMI < 18.5 Food/Nutrition History • Intake < 75% of requirements (insufficient intake) • Existing or expected inadequate intake for 7 to 14 days Client History • Aspiration • Coma

Enteral Nutrition (ND-2.1)

Other considerations (e.g., patient/client negotiation, patient/client needs and desires, and readiness to change)

- End-of-life issues, ethical considerations, patient/client rights and family/caregiver issues
- Other nutrient intake (oral, parenteral, or enteral nutrition)
- Enteral formulary composition and product availability
- Availability/access to a qualified practitioner for follow-up and monitoring
- Economic constraints that limit availability of food/enteral products

References

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Updated: 2013 Edition

Parenteral Nutrition/IV Fluids (ND-2.2)

Definition

Administration of nutrients and fluids intravenously, centrally (delivered into a large-diameter vein, usually the superior vena cava adjacent to the right atrium) or peripherally (delivered into a peripheral vein, usually of the hand or forearm).

Details of Intervention

A typical intervention might be further described with the following details: RDs/food and nutrition professionals recommend, implement, or order nutrition interventions and the action(s) may be to initiate, modify or discontinue a nutrition intervention(s):

- Composition (formula or description)
- Concentration (e.g., percent, grams of solute per mL)
- Rate (e.g., mL/hour)
- Schedule (e.g., hours, timing, taper schedule)
- Route (e.g., peripheral, central, and/or type of catheter)
- Site care (e.g., change dressings and provide line care for parenteral access)
- IV fluids (e.g., type; amount mL/day, mL/hr, mL with medications)

Typically Used with the Following

Nutrition Diagnostic Terminology Used in PES Statements	Common Examples (not intended to be inclusive)
<i>Nutrition Diagnoses</i>	• Altered GI function (NC-1.4) • Inadequate parenteral nutrition infusion (NI-2.6) • Impaired nutrient utilization (NC-2.1)
<i>Etiology</i>	• Altered gastrointestinal tract function, inability to absorb nutrients • Decreased functional length of GI tract
<i>Signs and Symptoms</i>	Physical Assessment • Unintentional weight loss > 10% in 6 months, > 5% in 1 month • Obvious muscle wasting • Skin turgor (tenting, edema) • Growth failure • Insufficient maternal weight gain • BMI < 18.5 Food/Nutrition History • Intake < 75% of requirements (insufficient intake) • Existing or expected inadequate intake for 7 to 14 days Client History • Malabsorption, maldigestion • Emesis • Diffuse peritonitis, intestinal obstruction, paralytic ileus, intractable diarrhea or emesis, gastrointestinal ischemia, or perforated viscus, short-bowel syndrome

Parenteral Nutrition/IV Fluids (ND-2.2)

Other considerations (e.g., patient/client negotiation, patient/client needs and desires, and readiness to change)

- End-of-life issues, ethical considerations, patient/client rights and family/caregiver issues
- Other nutrient intake (oral, parenteral, or enteral nutrition)
- Parenteral formulary composition and product availability
- Availability/access to a qualified practitioner for follow-up and monitoring
- Economic constraints that limit availability of parenteral products

References

1. ASPEN Board of Directors and Standards Committee. Definition of terms, style, and conventions used in ASPEN guidelines and standards. *Nutr Clin Pract.* 2005;20:281-285.
2. ASPEN Board of Directors and the Clinical Guidelines Task Force. Guidelines for the use of parenteral and enteral nutrition in adult and pediatric patients. *J Parenter Enteral Nutr.* 2002;26:1SA-138SA.
3. McClave SA, Lowen CC, Kleber MJ, Nicholson JF, Jimmerson SC, McConnell JW, Jung LY. Are patients fed appropriately according to their caloric requirements? *J Parenter Enteral Nutr.* 1998;22:375-381.
4. Mirtallo J, Canada T, Johnson D, Kumpf V, Petersen C, Sacks G, Seres D, Guenter P. Task force for the revision of safe practices for parenteral nutrition. *J Parenter Enteral Nutr.* 2004;28:S39-S70.

Updated: 2013 Edition

Medical Food Supplements (ND-3.1)

Definition

Commercial or prepared foods or beverages intended to supplement energy, protein, carbohydrate, fiber, and/or fat intake that may also contribute to vitamin and mineral intake.

Details of Intervention

A typical intervention might be further described with the following details: RDs/food and nutrition professionals recommend, implement, or order nutrition interventions and the action(s) may be to initiate, modify or discontinue a nutrition intervention(s):

- Commercial (prepackaged) beverage
- Commercial (prepackaged) food
- Modified (prepared) beverage
- Modified (prepared) food
- Purpose (e.g., to supplement energy, protein, carbohydrate, fiber, and/or fat intake)

Typically Used with the Following

Nutrition Diagnostic Terminology Used in PES Statements	Common Examples (not intended to be inclusive)
<i>Nutrition Diagnoses</i>	• Inadequate oral intake (NI-2.1) • Inadequate fluid intake (NI-3.1) • Increased nutrient needs (NI-5.1)
<i>Etiology</i>	• Neurologic deficit (stroke) • Difficulty chewing or swallowing • Food allergies or intolerance • Altered GI function • Partial GI obstruction
<i>Signs and Symptoms</i>	Physical Examination Findings • Unintentional weight loss > 10% in 6 months or > 5% in 1 month • Obvious muscle wasting • Poor skin turgor (tenting or edema) Food/Nutrition History • Insufficient usual food/beverage intake Client History • Diagnosis consistent with elevated nutrient needs • Potential for repletion of nutritional status • Ability to feed self • Choking on foods, oral/facial trauma • Insufficient vitamin-mineral intake

Medical Food Supplements (ND-3.1)

Other considerations (e.g., patient/client negotiation, patient/client needs and desires, and readiness to change)

- Appetite sufficient to take medical food supplements
- System constraints that prevent meeting the client's preferences for specific flavors, textures, foods, and the timing of feedings
- Availability of feeding assistance
- Economic concerns and product/food availability

References

1. Milne AC, Avenell A, Potter J. Meta-analysis: protein and energy supplementation in older people. *Ann Intern Med.* 2006;144:37-48.

Updated: 2013 edition

Vitamin and Mineral Supplements (ND-3.2)

Definition

A product that is intended to supplement vitamin or mineral intake.

Details of Intervention

A typical intervention might be further described with the following details: RDs/food and nutrition professionals recommend, implement, or order nutrition interventions and the action(s) may be to initiate, modify or discontinue a nutrition intervention(s):

- Vitamin supplement:
 - Vitamin A (specify form, µg or RE, frequency)
 - Vitamin C (mg/ day, frequency)
 - Vitamin D (specify form, µg or IU, frequency)
 - Vitamin E (specify form, mg or IU, frequency)
 - Vitamin K (µg, frequency)
 - Thiamin (mg, frequency)
 - Riboflavin (mg, frequency)
 - Multivitamin (yes/no, specify dose, frequency)
 - Niacin (specify form, mg, frequency)
 - Vitamin B6 (specify form, mg, frequency)
 - Folate (specify form, µg, frequency)
 - Vitamin B12 (µg, frequency)
 - Pantothenic acid (mg, frequency)
 - Biotin (µg, frequency)
- Mineral supplement:
 - Calcium (specify form, mg, frequency)
 - Copper (µg or mg, frequency)
 - Fluoride (mg, frequency)
 - Iodine (µg, frequency)
 - Iron (specify form, mg, frequency)
 - Magnesium (mg, frequency)
 - Phosphorus (mg, frequency)
 - Sulfate (g or mmol, frequency)
 - Manganese (mg, frequency)
 - Multi-mineral (yes/no, specify dose, frequency)
 - Multi-trace element (yes/no, specify dose, frequency)
 - Molybdenum (µg, frequency)
 - Boron (mg, frequency)
 - Cobalt (µg, frequency)
 - Selenium (specify form, µg, frequency)
 - Zinc (mg, frequency)
 - Potassium (specify form, g or mg, frequency)
 - Sodium (mg or g, frequency)
 - Chloride (mg, frequency)
 - Chromium (specify form, µg, frequency)

Typically Used with the Following

Nutrition Diagnostic Terminology Used in PES Statements	Common Examples (not intended to be inclusive)
<i>Nutrition Diagnoses</i>	• Inadequate vitamin intake (NI-5.9.1) • Excessive vitamin intake (NI-5.9.2) • Inadequate mineral intake (NI-5.10.1) • Excessive mineral intake (NI-5.10.2) • Food–medication interaction (NC-2.3) • Food- and nutrition-related knowledge deficit (NB-1.1) • Undesirable food choices (NB-1.7)
<i>Etiology</i>	• Poor intake of nutrient dense foods that contain vitamins and minerals • Excessive use of vitamin and mineral supplements • Medical diagnosis consistent with altered vitamin and mineral requirements • Malabsorption of vitamins and minerals

Vitamin and Mineral Supplements (ND-3.2)

<i>Signs and Symptoms</i>	Physical Examination Findings • Cutaneous abnormalities consistent with vitamin and mineral deficiency or excess Food/Nutrition History • Nutrient intake analysis reveals vitamin and mineral intake more or less than recommended • Laboratory or radiologic indexes of vitamin-mineral depletion
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Other considerations (e.g., patient/client negotiation, patient/client needs and desires, and readiness to change)

- Emerging scientific evidence to support the use of vitamin and mineral supplements in specific populations
- Availability of a qualified practitioner with additional education/training in the use of vitamin and mineral supplements in practice
- Economic considerations and product availability

References

1. Federal Food, Drug and Cosmetic Act. US Code, Title 21, Chapter 9, Subchapter II, Section 321 (ff). 2000 Edition. Available at: http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=browse_usc&docid=Cite:+21USC321. Accessed April 26, 2005.
2. Position of the American Dietetic Association: Nutrient supplementation. *J Am Diet Assoc.* 2009;109:2073-2085.
3. Institute of Medicine. *Dietary Reference Intakes for Calcium and Vitamin D*. Washington, DC: National Academies Press; 2010.

Updated: 2013 Edition

Bioactive Substance Management (ND-3.3)

Definition

Addition or change in provision of bioactive substances (e.g., plant stanol and sterol esters, psyllium, food additives, other bioactive substances).

Details of Intervention

A typical intervention might be further described with the following details. RDs/food and nutrition professionals recommend, implement, or order nutrition interventions and the action(s) may be to initiate, modify or discontinue a nutrition intervention(s):

- Plant stanol esters (specify g, form, frequency)
- Plant sterol esters (specify g, form, frequency)
- Soy protein (specify g, form, frequency)
- Psyllium (specify g, form, frequency)
- β -glucan (specify g, form, frequency)
- Food additives (those thought to have an impact on a patient/client's health) (specify, e.g., amount, form, frequency)
- Alcohol (specify, oz/mL, form, frequency)
- Caffeine (specify, e.g., mg, oz/mL, form, frequency)
- Other substance (for which there is evidence of bioactivity) (specify, e.g., amount, form, frequency)

Typically Used with the Following

Nutrition Diagnostic Terminology Used in PES Statements	Common Examples (not intended to be inclusive)
<i>Nutrition Diagnoses</i>	• Suboptimal bioactive substance intake (NI-4.1) • Excessive bioactive substance intake (NI-4.2) • Excessive alcohol intake (NI-4.3) • Food–medication interaction (NC-2.3) • Food- and nutrition-related knowledge deficit (NB-1.1) • Undesirable food choices (NB-1.7)
<i>Etiology</i>	• Poor intake of bioactive substance-containing foods • Excessive use of bioactive substance supplements
<i>Signs and Symptoms</i>	Food/Nutrition History • Nutrient intake analysis reveals bioactive substance intake more or less than recommended • Intake reveals consumption of food additive to which the patient/client is sensitive or intolerant Client History • Medical diagnosis associated with increased bioactive substance need

Other considerations (e.g., patient/client negotiation, patient/client needs and desires, and readiness to change)

- Emerging scientific evidence to support the use of bioactive supplements in specific populations
- Availability of a qualified practitioner with additional education/training in the use of bioactive supplements in practice

References

1. Position of the American Dietetic Association: Functional foods. *J Am Diet Assoc.* 2009;109:735-746.

Updated: 2011 Edition

Feeding Assistance (ND-4)

Definition

Accommodation or assistance designed to restore the patient/client's ability to eat independently, support adequate nutrient intake, and reduce the incidence of unplanned weight loss and dehydration.

Details of Intervention

A typical intervention might be further described with the following details. RDs/food and nutrition professionals recommend, implement, or order nutrition interventions and the action(s) may be to initiate, modify or discontinue a nutrition intervention(s):

- Adaptive eating devices (equipment or utensils) (e.g., specify)
- Feeding position (e.g, specify patient/client position in relationship to eating or degree angle for enteral feeding)
- Meal set-up (e.g., specify actions to make food accessible for consumption)
- Mouth care (e.g. specify treatment to promote oral health and hygiene)
- Menu selection assistance (yes/no)
- Other (specify)

Typically Used with the Following

Nutrition Diagnostic Terminology Used in PES Statements	Common Examples (not intended to be inclusive)
<i>Nutrition Diagnoses</i>	• Inadequate energy intake (NI-1.2) • Inadequate oral intake (NI-2.1) • Inadequate enteral nutrition infusion (NI-2.3) • Unintended weight loss (NC-3.2)
<i>Etiology</i>	• Physical disability • Poor food/nutrient intake • Decreased memory/concentration problems
<i>Signs and Symptoms</i>	Physical Examination Findings • Dropping the utensils or food • Weight loss Client History • Cerebral palsy, stroke, dementia • Refusal to use prescribed adaptive eating devices, or follow prescribed positioning techniques

Other considerations (e.g., patient/client negotiation, patient/client needs and desires, and readiness to change)

- Acceptance of feeding assistance/feeding devices
- Poor environment to foster adequate intake
- Lack of individual to provide assistance at meal time
- Lack of training in methods of feeding assistance
- Lack of available physical therapy, occupational therapy, or speech therapy evaluations
- Ability to understand the reasoning behind the recommendations and then want to make personal changes

Feeding Assistance (ND-4)

References

1. Academy of Nutrition and Dietetics. Unintended weight loss in older adults evidence-based nutrition practice guideline. Available at: <http://www.andevidencelibrary.com/topic.cfm?cat=3651&library=EBG>. Accessed January 27, 2012.
2. Academy of Nutrition and Dietetics. Critical illness evidence-based nutrition guideline. Available at: http://www.andevidencelibrary.com/template.cfm?key=767&cms_preview=1. Accessed January 26, 2012.
3. Consultant Dietitians in Health Care Facilities. *Eating Matters: A Training Manual for Feeding Assistants*. Chicago, IL: Consultant Dietitians in Health Care Facilities, American Dietetic Association; 2003.
4. Niedert K, Dornier B, eds. *Nutrition Care of the Older Adult*. 2nd ed. Chicago, IL: Consultant Dietitians in Health Care Facilities, American Dietetic Association; 2004.
5. Position of the American Dietetic Association: Individualized nutrition approaches for older adults in health care communities. *J Am Diet Assoc*. 2010;110:1554-1563.
6. Position of the American Dietetic Association: Providing nutrition services for people with developmental disabilities and special health care needs. *J Am Diet Assoc*. 2010;110: 296-307.
7. Position of the American Dietetic Association: Oral health and nutrition. *J Am Diet Assoc*. 2007;107:1418-1428.
8. Robinson GE, Leif B, eds. *Nutrition Management and Restorative Dining for Older Adults: Practical Interventions for Caregivers*. Chicago, IL: Consultant Dietitians in Health Care Facilities, American Dietetic Association; 2001.
9. Russell C, ed. *Dining Skills: Practical Interventions for the Caregivers of Older Adults with Eating Problems*. Chicago, IL: Consultant Dietitians in Health Care Facilities, American Dietetic Association; 2001.
10. Simmons SF, Osterweil D, Schnelle JF. Improving food intake in nursing home residents with feeding assistance: a staffing analysis. *J Gerontol A Biol Sci Med Sci*. 2001;56:M790-M794.
11. Simmons SF, Schnelle JF. Individualized feeding assistance care for nursing home residents: staffing requirements to implement two interventions. *J Gerontol A Biol Sci Med Sci*. 2004;59:M966-M973.

Updated: 2013 Edition

Feeding Environment (ND-5)

Definition

Adjustment of the physical environment, temperature, convenience, and attractiveness of the location where food is served that impacts food consumption.

Details of Intervention

A typical intervention might be further described with the following details. RDs/food and nutrition professionals recommend, implement, or order nutrition interventions and the action(s) may be to initiate, modify or discontinue a nutrition intervention(s):

- Lighting (e.g., specify)
- Odors (e.g., specify, minimize or enhance)
- Distractions (e.g., specify, minimize)
- Table height (specify)
- Table service (e.g., plates, napkins)
- Room temperature
- Meal service (type of service, e.g., service at table, buffet)
- Meal location (specify)
- Other

Typically Used with the Following

Nutrition Diagnostic Terminology Used in PES Statements	Common Examples (not intended to be inclusive)
<i>Nutrition Diagnoses</i>	• Inadequate oral intake (NI-2.1) • Disordered eating pattern (NB-1.5) • Self-feeding difficulty (NB-2.6)
<i>Etiology</i>	• Dementia • Inability to stick to task/easily distracted by others
<i>Signs and Symptoms</i>	Food/Nutrition History • Changes in appetite attributed to mealtime surroundings • Easily distracted from eating • Food sanitation and safety issues • Available foods not of the patient's choosing • Decline in patient/client ability to eat independently Client History • Pacing, wandering, changes in affect

Other considerations (e.g., patient/client negotiation, patient/client needs and desires, and readiness to change)

- Resources available to improve/modify the feeding environment

Feeding Environment (ND-5)

References

1. Niedert K, Dornier B, eds. *Nutrition Care of the Older Adult*. 2nd ed. Chicago, IL: Consultant Dietitians in Health Care Facilities, American Dietetic Association; 2004.
2. Position of the American Dietetic Association: Individualized nutrition approaches for older adults in health care communities. *J Am Diet Assoc*. 2010;110:1554-1563.
3. Position of the American Dietetic Association: Providing nutrition services for people with developmental disabilities and special health care needs. *J Am Diet Assoc*. 2010;110: 296-307.
4. Robinson GE, Leif B, eds. *Nutrition Management and Restorative Dining for Older Adults: Practical Interventions for Caregivers*. Chicago, IL: Consultant Dietitians in Health Care Facilities, American Dietetic Association; 2001.
5. Russell C, ed. *Dining Skills: Practical Interventions for the Caregivers of Older Adults with Eating Problems*. Consultant Dietitians in Health Care Facilities. Chicago, IL: American Dietetic Association; 2001.

Updated: 2013 Edition

Nutrition-Related Medication Management (ND-6)

Definition

Modification of a drug or nutrition-related complementary/alternative medicine to optimize patient/client nutritional or health status.

Details of Intervention

A typical intervention might be further described with the following details. RDs/food and nutrition professionals recommend, implement, or order nutrition interventions and the action(s) may be to initiate, modify or discontinue a nutrition intervention(s):

- Prescription medication (e.g., insulin, appetite stimulants, digestive enzymes) dose, form, schedule, route
- Over-the-counter (OTC) medication (e.g., antacids, aspirin, laxatives) dose, form, schedule, route
- Nutrition-related complementary/alternative medicine (e.g., peppermint oil, probiotics), dose, form, schedule, route

Typically Used with the Following

Nutrition Diagnostic Terminology Used in PES Statements	Common Examples (not intended to be inclusive)
<i>Nutrition Diagnoses</i>	• Altered GI function (NC-1.4) • Impaired nutrient utilization (NC-2.1) • Altered nutrition-related laboratory values (NC-2.2) • Food–medication interaction (NC-2.3)
<i>Etiology</i>	• Insufficient appetite resulting in adequate nutrient intake • Frequent hypo- or hyperglycemia • Pancreatic insufficiency • Malabsorption of fat, protein, lactose, or other carbohydrates • Polypharmacy and medication abuse • Drug toxicity
<i>Signs and Symptoms</i>	Physical Examination Findings • Thin, wasted appearance Food/Nutrition History • Sufficient oral intake • Report of herbal use Client History • Diabetes with poorly controlled blood glucose

Other considerations (e.g., patient/client negotiation, patient/client needs and desires, and readiness to change)

- Availability/access to a clinical pharmacist
- Availability of a qualified practitioner with appropriate pharmacology training and/or education

References

1. Position of the American Dietetic Association: Integration of medical nutrition therapy and pharmacotherapy. *J Am Diet Assoc.* 2010;110:950-956.
2. Kris-Etherton P, Pearson T. Over-the-counter statin medications: emerging opportunities for RDs. *J Am Diet Assoc.* 2000;100:1126-1130.
3. Moyers B. Medications as adjunct therapy for weight loss: approved and off-label agents in use. *J Am Diet Assoc.* 2005;105:948-959.

Updated: 2013 Edition

Nutrition Education–Content (E-1)

Definition

Instruction or training intended to lead to nutrition-related knowledge.

Note: This reference sheet only refers to patient/client nutrition education. Please use Nutrition Counseling (C) for documentation of the Theoretical Basis/Approach (C-1) and Strategies (C-2) used for patient/client behavior change.

Details of Intervention

A typical intervention might be further described with the following details. RDs/food and nutrition professionals recommend, implement, or order nutrition interventions and the action(s) may be to initiate, modify or discontinue a nutrition intervention(s):

- Purpose (e.g., prevention, disease management) of the nutrition education
- Priority modifications (e.g., issue of most concern to patient/client's health and well-being)
- Survival information (minimum necessary nutrition modifications until patient/client can return for more nutrition education)
- Nutrition and physical activity relationship to health/disease
- Recommended modifications (e.g., explain multiple nutrition prescription recommendations)
- Other or related topics (e.g., saturated and *trans* fatty acid intake versus total fat intake, menu planning, food purchasing, physical activity recommendations)
- Other, specify

Typically Used with the Following

Nutrition Diagnostic Terminology Used in PES Statements	Common Examples (not intended to be inclusive)
<i>Nutrition Diagnoses</i>	• Food–medication interaction (NC-2.3) • Underweight (NC-3.1) • Overweight/obesity (NC-3.3) • Food- and nutrition-related knowledge deficit (NB-1.1) • Unsupported beliefs/attitudes about food- or nutrition-related topics (NB-1.2) • Self-monitoring deficit (NB-1.4) • Disordered eating pattern (NB-1.5) • Physical inactivity (NB-2.1) • Excessive physical activity (NB-2.2) • Altered nutrition-related laboratory values (NC-2.2) • Other: Any diagnoses related to inadequate, excessive, less-than-optimal, or inconsistent intake
<i>Etiology</i>	• Capacity for learning • Knowledge deficit related to newly diagnosed medical condition • Interest and/or motivation • Medical or surgical procedure requiring modified diet • Unable to distinguish legitimate from false information

Nutrition Education–Content (E-1)

<i>Signs and Symptoms</i>	Food/Nutrition History • Unable to explain purpose of the nutrition prescription or rationale for nutrition prescription in relationship to disease/health • Expresses need for additional information or clarification of education or additional time to learn information • Unable to select appropriate foods or supplements • Unable to choose appropriate timing, volume, or preparation/handling of foods • Uncertainty of physical activity, type and frequency Biochemical Data, Medical Tests and Procedures • Laboratory data indicating nutrition education warranted
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Other considerations (e.g., patient/client negotiation, patient/client needs and desires, and readiness to change)

- Met with several providers in one day and is unable or unwilling to receive more nutrition education at this time
- Profile reflects complicated situation warranting additional education/instruction
- Being discharged from the hospital
- Caregiver unavailable at time of nutrition education
- Baseline knowledge
- Learning style
- Other education and learning needs, e.g., new medication or other treatment administration

References

1. Position of the American Dietetic Association: Total diet approach to communicating food and nutrition information. *J Am Diet Assoc.* 2007;107:1224-1232.
2. Holli BB, Calabrese RJ, O'Sullivan-Maillet J. *Communication and Education Skills for Dietetics Professionals*. 4th ed. New York, NY: Lipincott Williams and Wilkins; 2003.
3. Sahyoun NR, Pratt CA, Anderson A. Evaluation of nutrition education interventions for older adults: a proposed framework. *J Am Diet Assoc.* 2004;104:58-69.
4. Contento I. The effectiveness of nutrition education and implications for nutrition education policy, programs, and research: a review of research. *J Nutr Educ.* 1995;27:279-283.
5. Medeiros LC, Butkus SN, Chipman H, Cox RH, Jones L, Little D. A logic model framework for community nutrition education. *J Nutr Educ Behav.* 2002;37:197-202.

Updated: 2013 Edition

Nutrition Education–Application (E-2)

Definition

Instruction or training intended to lead to nutrition-related result interpretation or skills.

Note: This reference sheet only refers to patient/client nutrition education. Please use Nutrition Counseling (C) for documentation of the Theoretical Basis/Approach (C-1) and Strategies (C-2) used for patient/client behavior change.

Details of Intervention

A typical intervention might be further described with the following details. RDs/food and nutrition professionals recommend, implement, or order nutrition interventions and the action(s) may be to initiate, modify or discontinue a nutrition intervention(s):

- Result interpretation (e.g., engage in training on medical or other results to coincide with nutrition prescription, such as, distribution of carbohydrates throughout the day based on blood glucose monitoring results, heart rate during physical activity)
- Skill development, e.g., glucometer use, home tube feeding and feeding pump training, cooking skills/preparation, physical activity equipment
- Other, specify

Typically Used with the Following

Nutrition Diagnostic Terminology Used in PES Statements	Common Examples (not intended to be inclusive)
<i>Nutrition Diagnoses</i>	• Food–medication interaction (NC-2.3) • Food- and nutrition-related knowledge deficit (NB-1.1) • Unsupported beliefs/attitudes about food- or nutrition-related topics (NB-1.2) • Self-monitoring deficit (NB-1.4) • Disordered eating pattern (NB-1.5) • Physical inactivity (NB-2.1) • Altered nutrition-related laboratory values (NC-2.2) • Other: Any diagnoses related to inadequate or excessive, less-than-optimal, or inconsistent intake
<i>Etiology</i>	• Deficient understanding of relevant nutrition-related topics • Exposure to incorrect food and nutrition information • Lack of skill in self-management techniques
<i>Signs and Symptoms</i>	Food/Nutrition History • Expresses desire for knowledge/information • Food and nutrient intake assessment indicates food choice incompatible with recommendations Biochemical Data, Medical Tests and Procedures • Laboratory data indicating nutrition education warranted

Other considerations (e.g., patient/client negotiation, patient/client needs and desires, and readiness to change)

- Profile reflects complicated situation warranting additional education/instruction
- Increased capacity and willingness to learn information
- Quality of life may be enhanced with in-depth nutrition education and understanding
- Baseline knowledge
- Lifestyle factors
- Education approaches that enhance knowledge/skill transfer

Nutrition Education–Application (E-2)

References

1. Position of the American Dietetic Association: Total diet approach to communicating food and nutrition information. *J Am Diet Assoc.* 2007;107:1224-1232.
2. Carmona RH. Improving health literacy: preventing obesity with education. *J Am Diet Assoc.* 2005;105:S9-S10.
3. Contento I. The effectiveness of nutrition education and implications for nutrition education policy, programs, and research: a review of research. *J Nutr Educ.* 1995;27:279-283.
4. Holli BB, Calabrese RJ, O'Sullivan-Maillet J. *Communication and Education Skills for Dietetics Professionals*. 4th ed. New York, NY: Lipincott Williams and Wilkins; 2003.
5. Holmes AL, Sanderson B, Maisiak R, Brown R, Bittner V. Dietitian services are associated with improved patient outcomes and the MEDFICTS dietary assessment questionnaire is a suitable outcome measure in cardiac rehabilitation. *J Am Diet Assoc.* 2005;105:1533-1540.
6. Medeiros LC, Butkus SN, Chipman H, Cox RH, Jones L, Little D. A logic model framework for community nutrition education. *J Nutr Educ Behav.* 2005;37:197-202.
7. Sahyoun NR, Pratt CA, Anderson A. Evaluation of nutrition education interventions for older adults: a proposed framework. *J Am Diet Assoc.* 2004;104:58-69.

Updated: 2013 Edition

Theoretical Basis/Approach (C-1)

Definition

The theories or models used to design and implement an intervention. Theories and theoretical models consist of principles, constructs, and variables, which offer systematic explanations of the human behavior change process. Behavior change theories and models provide a research-based rationale for designing and tailoring nutrition interventions to achieve the desired effect. A theoretical framework for curriculum and treatment protocols, it guides determination of: (1) what information patients/clients need at different points in the behavior change process, (2) what tools and strategies may be best applied to facilitate behavior change, and (3) outcome measures to assess effectiveness in interventions or components of interventions.

Application Guidance

One or more of the following theories or theoretical models may influence a practitioner's counseling style or approach. Practitioners are asked to identify those theories (C-1) that most influence the intervention being documented. An intervention might also incorporate tools and strategies derived from a variety of behavior change theories and models. The practitioner is also asked to indicate which strategies (C-2) they used in a particular intervention session.

Details of Intervention

A typical intervention might be further described with the following details. RDs/food and nutrition professionals recommend, implement, or order nutrition interventions and the action(s) may be to initiate, modify or discontinue a nutrition intervention(s):

The following theories and models have proven valuable in providing a theoretical framework for evidence-based individual and interpersonal level nutrition interventions. Other theories may be useful for community level interventions (e.g., Community Organization, Diffusion of Innovations, Communication Theory).

- Cognitive-Behavioral Theory
- Health Belief Model
- Social Learning Theory
- Transtheoretical Model/Stages of Change

Additional information regarding each of the above theories and models can be found within this reference sheet.

Theoretical Basis/Approach (C-1)

Typically Used with the Following

Nutrition Diagnostic Terminology Used in PES Statements	Common Examples (not intended to be inclusive)
<i>Nutrition Diagnoses</i>	• Overweight/obesity (NC-3.3) • Unsupported beliefs/attitudes about food or nutrition-related topics (NB-1.2) • Not ready for diet/lifestyle change (NB-1.3) • Self-monitoring deficit (NB-1.4) • Disordered eating pattern (NB-1.5) • Limited adherence to nutrition-related recommendations (NB-1.6) • Undesirable food choices (NB-1.7) • Physical inactivity (NB-2.1) • Excessive physical activity (NB-2.2) • Inability or lack of desire to manage self care (NB-2.3) • Poor nutrition quality of life (NB-2.5) • Other: Any diagnoses related to inadequate, excessive, less-than-optimal, or inconsistent intake
<i>Etiology</i>	• New medical diagnosis • Unsupported beliefs/attitudes about food, nutrition, and nutrition-related topics • Lack of value for behavior change, competing values • Cultural/religious practices that interfere with implementation of the nutrition prescription • Lack of efficacy to make changes or to overcome barriers to change • Lack of focus/attention to detail, difficulty with time management and/or organization • Perception that time, interpersonal, or financial constraints prevent change • Prior exposure to incorrect or incompatible information • Not ready for diet/lifestyle change • Lack of caretaker or social support for implementing changes • High level of fatigue or other side effect of medical condition

Theoretical Basis/Approach (C-1)

<i>Signs and Symptoms</i> (Defining Characteristics)	Food/Nutrition History • Frustration with MNT recommendations • Previous failures to effectively change target behavior • Defensiveness, hostility, or resistance to change • Sense of lack of control of eating • Inability to apply food- and nutrition-related information/guidelines • Inability to change food- and nutrition-related behavior • Absent or incomplete self-monitoring records • Inability to problem-solve/self-manage • Irrational thoughts about self and effects of food intake • Unrealistic expectations • Inflexibility with food selection • Evidence of excessive, inadequate, less-than-optimal, or inconsistent intake related to needs
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Other considerations (e.g., patient/client negotiation, patient/client needs and desires, and readiness to change)

- Lifestyle factors
- Language barrier
- Educational level
- Culture
- Socioeconomic status

References

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Theoretical Basis/Approach (C-1)

Cognitive-Behavioral Theory

Description

Cognitive-Behavioral Theory (CBT) is based on the assumption that all behavior is learned and is directly related to internal factors (e.g., thoughts and thinking patterns) and external factors (e.g., environmental stimulus and reinforcement) that are related to the problem behaviors. Application involves use of both cognitive and behavioral change strategies to effect behavior change.

Implication for Counseling Interventions

CBT, derived from an educational model, is based on the assumption that most emotional and behavioral reactions are learned and can be unlearned. The goal of CBT is to facilitate client identification of cognitions and behaviors that lead to less-than-optimal eating or exercise habits and replace these with more rational thoughts and actions.

The process is:

- Goal directed
- Process oriented
- Facilitated through a variety of problem-solving tools

Behavioral and cognitive techniques to modify eating and exercise habits are taught for continuous application by the patient/client. Practitioners implement Cognitive-Behavioral Theory by partnering with clients to study their current environment to:

- Identify determinants or antecedents to behavior that contribute to less than optimal eating/exercise
- Identify resultant behavior (e.g., overeating, vomiting)
- Analyze consequences of this behavior (cognitions, positive and negative reinforcers and punishments, e.g., decreased anxiety, feeling over full, losing or gaining weight)
- Make specific goals to modify the environment/cognitions to reduce target behaviors

Cognitive and behavioral strategies used to promote change in diet and physical activity may include:

- | | |
|---------------------|----------------------------------|
| • Goal setting | • Stimulus control |
| • Self-monitoring | • Cognitive restructuring |
| • Problem solving | • Relapse prevention |
| • Social support | • Rewards/contingency management |
| • Stress management | |

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Theoretical Basis/Approach (C-1)

Health Belief Model

Description

The Health Belief Model (HBM) is a psychological model that focuses on an individual's attitudes and beliefs to attempt to explain and predict health behaviors. The HBM is based on the assumption that an individual will be motivated to take health-related action if that person (1) feels that a negative health condition (e.g., diabetes) can be avoided or managed, (2) has a positive expectation that by taking a recommended action, he or she will avoid negative health consequences (e.g., good blood glucose control will preserve eye sight), and (3) believes he or she can successfully perform a recommended health action (e.g., I can use carbohydrate counting and control my diet. I can engage in regular physical activity).

Implication for Counseling Interventions

The Health Belief Model is particularly helpful to practitioners planning interventions targeted to individuals with clinical nutrition-related risk factors, such as diabetes, high blood cholesterol, and/or hypertension. The six major constructs of the model have been found to be important in impacting an individual's motivation to take health-related action. The following table provides definitions and application guidance for the key constructs of the theory. Motivational interviewing strategies may be appropriate to address perceived susceptibility, severity, benefits, and barriers. Behavioral strategies are most appropriate once the patient/client begins to take action to modify his or her diet and/or physical activity.

These six constructs are useful components in designing behavior change programs. It is important for the practitioner to understand the patient's perception of the health threat and potential benefits of treatment. According to the HBM, an asymptomatic diabetic may not be compliant with his or her treatment regiment if he or she does not:

- believe he or she has diabetes (susceptibility)
- believe diabetes will seriously impact his or her life (perceived seriousness)
- believe following the diabetic diet will decrease the negative effects of diabetes (perceived benefits)
- believe the effort to follow the diet is worth the benefit to be gained (perceived barriers)
- have stimulus to initiate action (cue to action)
- have confidence in their ability to achieve success (self-efficacy)

Theoretical Basis/Approach (C-1)

Health Belief Model

Construct	Definition	Strategies
<i>Perceived Susceptibility</i>	Client's belief or opinion of the personal threat a health condition represents for them; client opinion regarding whether they have the condition (e.g., diabetes or hypertension) or their chance of getting the disease or condition	- Educate on disease/condition risk factors - Tailor information to the client - Ask client if they think they are at risk or have the disease/condition - Guided discussions - Motivational interviewing (express empathy, open-ended questions, reflective listening, affirming, summarizing, and eliciting self-motivation statements)
<i>Perceived Severity</i>	Client's belief about the impact a particular health threat will have on them and their lifestyle	- Educate on consequences of the disease/condition; show graphs, statistics - Elicit client response - Discuss potential impact on client's lifestyle - Motivational interviewing
<i>Perceived Benefits and Barriers</i>	Client's belief regarding benefits they will derive from taking nutrition-related action; perceived benefits versus barriers—client's perception of whether benefits will outweigh the sacrifices and efforts involved in behavior change	- Clearly define benefits of nutrition therapy and physical activity - Role models, testimonials - Explore ambivalence and barriers - Imagine the future - Explore successes - Summarize and affirm the positive
<i>Cues to Action</i>	Internal or external triggers that motivate or stimulate action	- How-to education - Incentive programs - Link current symptoms to disease/condition - Discuss media information - Reminder phone calls/mailings - Social support
<i>Self-Efficacy</i>	Client confidence in their ability to successfully accomplish the necessary action	- Skill training/demonstration - Introduce alternatives and choices - Behavior contracting; small, incremental goals - Coaching, verbal reinforcement

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Theoretical Basis/Approach (C-1)

Social Learning Theory

Description

Social Learning Theory, also known as Social Cognitive Theory, provides a framework for understanding, predicting, and changing behavior. The theory identifies a dynamic, reciprocal relationship between environment, the person, and behavior. The person can be both an agent for change and a responder to change. It emphasizes the importance of observing and modeling behaviors, attitudes and emotional reactions of others. Determinants of behavior include goals, outcome expectations, and self-efficacy. Reinforcements increase or decrease the likelihood that the behavior will be repeated (1).

Implication for Counseling Interventions

Social Learning Theory is rich in concepts applicable to nutrition counseling. The following table provides definitions and application guidance for the key concepts of the theory.

Concept	Definition	Strategies
<i>Reciprocal Determinism</i>	A person's ability to change a behavior is influenced by characteristics within the person (e.g., beliefs), the environment, and the behavior itself (e.g., difficulty doing the behavior). All three interact to influence if the behavior change will happen.	• Consider multiple behavior change strategies targeting motivation, action, the individual and the environment: • Motivational interviewing • Social support • Stimulus control • Demonstration • Skill development training/coaching
<i>Behavioral Capability</i>	The knowledge and skills that are needed for a person to change behavior	• Comprehensive education • Demonstration • Skill development training/coaching
<i>Expectations</i>	For a person to do a behavior, they must believe that the behavior will result in outcomes important to them	• Motivational interviewing • Model positive outcomes of diet/exercise
<i>Self-Efficacy</i>	Confidence in ability to take action and persist in action	• Break task down to component parts • Demonstration/modeling • Skill development training/coaching • Reinforcement • Small, incremental goals/behavioral contracting
<i>Observational Learning</i>	When a person learns how to do a behavior by watching credible others do the same behavior	• Demonstrations • Role modeling • Group problem-solving sessions
<i>Reinforcement</i>	Response to a behavior that will either increase or decrease the likelihood that the behavior will be repeated	• Affirm accomplishments • Encourage self-reward/self-reinforcement • Incentives for process components of change (e.g., keeping a food diary or physical activity log)

Theoretical Basis/Approach (C-1)

Social Learning Theory

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1. Glanz K. Current theoretical bases for nutrition intervention and their uses. In Coulston AM, Rock CL, Monsen E. *Nutrition in the Prevention and Treatment of Disease*. San Diego, CA: Academy Press; 2001:83-93.
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Theoretical Basis/Approach (C-1)

Transtheoretical Model/Stages of Change

Definition

A theoretical model of intentional health behavior change that describes a sequence of cognitive (attitudes and intentions) and behavioral steps people take in successful behavior change. The model, developed by Prochaska and DiClemente, is composed of a core concept known as Stages of Change, a series of independent variables, the Processes of Change, and outcome measures including decision balance and self-efficacy. The model has been used to guide development of effective interventions for a variety of health behaviors.

Implication for Counseling Interventions

One of the defining characteristics of this model is that it describes behavior change not as a discrete event (e.g., today I am going to stop overeating), but as something that occurs in stages, over time. The five stages reflect an individual's attitudes, intentions and behavior related to change of a specific behavior and include the following:

- Precontemplation – no recognition of need for change; no intention to take action within the next 6 months
- Contemplation – recognition of need to change; intends to take action within the next 6 months
- Preparation – intends to take action in the next 30 days and has taken some behavioral steps in that direction
- Action – has made changes in target behavior for less than 6 months
- Maintenance – has changed target behavior for more than 6 months

Determination of a patient/client stage of change is relatively simple, involving a few questions regarding intentions and current diet. One of the appealing aspects of the theory is that the Process of Change construct describes cognitive and behavioral activities or strategies, which may be applied at various stages to move a person forward through the stages of change. This movement is not always linear, and patients can cycle in and out of various stages. The model has been used to effectively tailor interventions to the needs of clients at various stages. Knowing a patient/client's stage of change can help a practitioner determine:

- Whether intervention now is appropriate
- The type and content of intervention to use (motivational versus action oriented)
- Appropriate and timely questions about past efforts, pros and cons of change, obstacles, challenges and potential strategies
- The amount of time to spend with the patient

The following table provides guidance for applying stages and processes of change to the adoption of healthful diets.

This theoretical basis/approach has also been used with regard to physical activity.

Theoretical Basis/Approach (C-1)

Transtheoretical Model/Stages of Change

Table 3

General Guidelines for Applying Stages and Processes of Change to Adoption of Healthful Diets

State of Readiness	Key Strategies for Moving to Next Stage	Treatment Do's at This Stage	Treatment Don'ts at This Stage
Precontemplation	Increased information and awareness, emotional acceptance	• Provide personalized information. • Allow client to express emotions about his or her disease or about the need to make dietary changes.	• Do not assume client has knowledge or expect that providing information will automatically lead to behavior change. • Do not ignore client's emotional adjustment to the need for dietary change, which could override ability to process relevant information.
Contemplation	Increased confidence in one's ability to adopt recommended behaviors	• Discuss and resolve barriers to dietary change. • Encourage support networks. • Give positive feedback about a client's abilities. • Help to clarify ambivalence about adopting behavior and emphasize expected benefits.	• Do not ignore the potential impact of family members, and others, or client's ability to comply. • Do not be alarmed or critical of a client's ambivalence.
Preparation	Resolution of ambivalence, firm commitment, and specific action plan	• Encourage client to set specific, achievable goals (e.g., use 1% milk instead of whole milk). • Reinforce small changes that client may have already achieved.	• Do not recommend general behavior changes (e.g., "Eat less fat"). • Do not refer to small changes as "not good enough."
Action	Behavioral skill training and social support	• Refer to education program for self-management skills. • Provide self-help materials.	• Do not refer clients to information-only classes.
Maintenance	Problem-solving skills and social and environmental support	• Encourage client to anticipate and plan for potential difficulties (e.g., maintaining dietary changes on vacation). • Collect information about local resources (e.g., support groups, shopping guides). • Encourage client to "recycle" if he or she has a lapse or relapse. • Recommend more challenging dietary changes if client is motivated.	• Do not assume that initial action means permanent change. • Do not be discouraged or judgmental about a lapse or relapse.

Source: Kristal AR, Glanz K, Curry S, Patterson RE. How can stages of change be best used in dietary interventions? *J Am Diet Assoc.* 1999;99:683.

Prochaska recommends the following strategies, which target motivation, be used in the early stages of change: consciousness raising, dramatic relief (e.g., emotional arousal via role playing or personal testimonials), environmental reevaluation (e.g., empathy training and family interactions), social liberation (e.g., advocacy, empowerment) and self-reevaluation (e.g., value clarification, healthy role models, and imagery). These strategies are very consistent with motivational interviewing techniques. In the later stages of change, behavioral strategies are most appropriate.

Theoretical Basis/Approach (C-1)

Transtheoretical Model/Stages of Change

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1. Glanz K. Current theoretical bases for nutrition intervention and their uses. In Coulston AM, Rock CL, Monsen E. *Nutrition in the Prevention and Treatment of Disease*. San Diego, CA: Academy Press; 2001:83-93.
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Strategies (C-2)

Definition

An evidence-based method or plan of action designed to achieve a particular goal. Application of behavior change theories in nutrition practice has provided practitioners with a collection of evidence-based strategies to promote behavior change. Some strategies target change in motivation and intention to change, and others target behavior change. Food and nutrition professionals selectively apply strategies based on patient/client goals and objectives, and their personal counseling philosophy and skill.

Application Guidance

An intervention typically incorporates tools and strategies derived from a variety of behavior change theories and models. The practitioner is asked to indicate which Strategies (C-2) he or she used in a particular intervention session along with the Theories (C-1) that most influence the intervention being documented.

Details of Intervention

A typical intervention might be further described with the following details. RDs/food and nutrition professionals recommend, implement, or order nutrition interventions and the action(s) may be to initiate, modify or discontinue a nutrition intervention(s):

The following strategies have proven valuable in providing effective nutrition-related (e.g. nutrition therapy, physical activity) behavior change.

- Motivational interviewing
- Goal setting
- Self-monitoring
- Problem solving
- Social support
- Stress management
- Stimulus control
- Cognitive restructuring
- Relapse prevention
- Rewards/contingency management
- Other

Additional information regarding each of the above strategies can be found within this reference sheet.

Strategies (C-2)

Typically Used with the Following

Nutrition Diagnostic Terminology Used in PES Statements	Common Examples (not intended to be inclusive)
<i>Nutrition Diagnoses</i>	• Overweight/obesity (NC-3.3) • Unsupported beliefs/attitudes about food or nutrition-related topics (NB-1.2) • Not ready for diet/lifestyle change (NB-1.3) • Self-monitoring deficit (NB-1.4) • Disordered eating pattern (NB-1.5) • Limited adherence to nutrition-related recommendations (NB-1.6) • Undesirable food choices (NB-1.7) • Physical inactivity (NB-2.1) • Excessive physical activity (NB-2.2) • Inability or lack of desire to manage self care (NB-2.3) • Poor nutrition quality of life (NB-2.5) • Other: Any diagnoses related to inadequate, excessive, less-than-optimal, or inconsistent intake
<i>Etiology</i>	• New medical diagnosis • Unsupported beliefs/attitudes about food, nutrition, and nutrition-related topics • Lack of value for behavior change, competing values • Cultural/religious practices that interfere with implementation of the nutrition prescription • Lack of efficacy to make changes or to overcome barriers to change • Lack of focus/attention to detail, difficulty with time management and/or organization • Perception that time, interpersonal, or financial constraints prevent change • Prior exposure to incorrect or incompatible information • Not ready for diet/lifestyle change • Lack of caretaker or social support for implementing changes • High level of fatigue or other side effect of medical condition

Strategies (C-2)

<i>Signs and Symptoms (Defining Characteristics)</i>	Food/Nutrition History • Frustration with MNT recommendations • Previous failures to effectively change target behavior • Defensiveness, hostility, or resistance to change • Sense of lack of control of eating • Inability to apply food- and nutrition-related information/guidelines • Inability to change food- and nutrition-related behavior • Absent or incomplete self-monitoring records • Inability to problem-solve/self-manage • Irrational thoughts about self and effects of food intake • Unrealistic expectations • Inflexibility with food selection • Evidence of excessive, inadequate, less-than-optimal, or inconsistent intake related to needs
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Other considerations (e.g., patient/client negotiation, patient/client needs and desires, and readiness to change)

- Lifestyle factors
- Language barrier
- Educational level
- Culture
- Socioeconomic status

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Strategies (C-2)

Strategy descriptions and application guidance

Strategy	Description	Implementation Tips
Motivational Interviewing (MI)	A directive, client-centered counseling style for eliciting behavior change by helping clients to explore and resolve ambivalence (1). The approach involves selective response to client speech in a way that helps the client resolve ambivalence and move toward change. The four guiding principles that underlie this counseling approach include: • Express empathy • Develop discrepancy • Roll with resistance • Support self-efficacy The following specific practitioner behaviors are characteristic of the MI style (2): • Expressing acceptance and affirmation • Eliciting and selectively reinforcing the client's own self-motivational statements, expressions of problem recognition, concern, desire, intention to change, and ability to change • Monitoring the client's degree of readiness to change, and ensuring that jumping ahead of the client does not generate resistance • Affirming the client's freedom of choice and self-direction The source of motivation is presumed to reside within the client and the counselor encourages the client to explore ambivalence, motivation, and possibilities to change, so it is the client who chooses what to change, and determines the change plan and strategy. MI is an evidence-based counseling strategy which builds on Carl Roger's client-centered counseling model, Prochaska and DiClemente's transtheoretical model of change, Milton Rokeach's human values theory, and Daryl Bern's theory of self-perception.	Tone of counseling: • Partnership • Nonjudgmental • Empathetic/supportive/encouraging • Nonconfrontational • Quiet and eliciting The client does most of the talking and the counselor guides the client to explore and resolve ambivalence by: • Asking open-ended questions • Listening reflectively • Summarizing • Affirming • Eliciting self-motivational statements • Shared agenda setting/decision making • Allowing clients to interpret information • Rolling with resistance, rather than confronting • Building discrepancy • Eliciting "change talk" • Negotiating a change plan Motivational interviewing is best applied in situations when a patient is not ready, is unwilling, or is ambivalent about changing their diet or lifestyle. MI integrates well with the readiness to change model to move individuals from the early stages to the action stage of change. MI is a major paradigm change from the problem solving oriented counseling frequently employed by practitioners. MI is not a set of techniques that can be learned quickly, but a style or approach to counseling.

Strategies (C-2)

Strategy	Description	Implementation Tips
<i>Goal Setting</i>	A collaborative activity between the client and the practitioner in which the client decides from all potential activity recommendations what changes he or she will expend effort to implement.	• Appropriate for patients ready to make dietary and physical activity changes • Coach on goal setting skills • Document and track progress toward short-term and long-term goals • Probe client about pros and cons of proposed goals • Assist client in gaining the knowledge and skills necessary to succeed • Encourage strategies to build confidence (discuss realistic steps and start with easily achievable goals) • Aid clients in building a supportive environment • Celebrate successes
<i>Self-Monitoring</i>	A technique that involves keeping a detailed record of behaviors that influence diet and/or weight and may include: • What, when, how much eaten • Activities during eating • Emotions and cognitions related to meals/snacks • Frequency, duration, and intensity of exercise • Target nutrient content of foods consumed (i.e., calories/kcal/kJ, fat, fiber) • Event, thoughts about event, emotional response, behavioral response • Negative self-talk, replacement thoughts • Blood glucose, blood pressure Self-monitoring is associated with improved treatment outcomes.	• Provide rationale and instructions for self-monitoring • Review and identify patterns • Assist with problem solving and goal setting • Celebrate successes • The amount of feedback required typically diminishes as patient/client skill improves
<i>Problem solving</i>	Techniques that are taught to assist clients in identifying barriers to achieving goals, identifying and implementing solutions, and evaluating the effectiveness of the solutions (2).	Work collaboratively with client to: • Define the problem • Brainstorm solutions • Weigh pros/cons of potential solutions • Select/implement strategy • Evaluate outcomes • Adjust strategy

Strategies (C-2)

Strategy	Description	Implementation Tips
<i>Social Support</i>	Increased availability of social support for dietary and physical activity behavior change. Social support may be generated among an individual's family, church, school, co-workers, health club, or community.	A food and nutrition professional may assist a client by: • Establishing a collaborative relationship • Identifying family/community support • Assisting clients in developing assertiveness skills. • Utilize modeling, skill training, respondent and operant conditioning • Conducting education in a group • Encourage family involvement
<i>Stress Management</i>	Reaction to stress can cause some clients to lose their appetite and others to overeat. Food and nutrition professionals are particularly interested in management of stressful situations, which result in less-than-optimal eating behaviors.	Two approaches may be used to manage stress, one focuses on changing the environment and the other focuses on modifying the client's response to stress. Environmental-focused strategies may include: • Guidance on planning ahead • Use of time-management skills • Developing a support system • Building skills to prepare quick and healthful meals, incorporate exercise • Guidance on eating on the run Emotion-focused strategies may include: • Use of positive self-talk • Building assertiveness in expressing eating desires • Setting realistic goals • Learning to deal appropriately with emotion-driven eating cravings • Relaxation exercises
<i>Stimulus Control</i>	Identifying and modifying social or environmental cues or triggers to act, which encourage undesirable behaviors relevant to diet and exercise. In accordance with operant conditioning principles, attention is given to reinforcement and rewards.	Review of self-monitoring records with clients may help to identify triggers for undesirable eating. Assist client in identifying ways to modify the environment to eliminate triggers. This may include things such as: • Keeping food out of sight • Removing high sugar/high fat snacks from the house • Bringing lunch to work • Establishing a rule—no eating in the car • Help client establish criteria for rewards for desirable behavior • Ensure reward (reinforcement) received only if criteria met

Strategies (C-2)

Strategy	Description	Implementation Tips
<i>Cognitive Restructuring</i>	Techniques used to increase client awareness of their perceptions of themselves and their beliefs related to diet, weight, and weight loss expectations.	Self-monitoring and techniques such as the ABC Technique of Irrational Beliefs may help clients to become more aware of thoughts that interfere in their ability to meet behavioral goals. Help clients replace dysfunctional thoughts with more rationale ones: • Challenge shoulds, oughts, musts • Decatastrophize expected outcomes • Confront faulty self-perceptions • Decenter by envisioning other perspectives Coach clients on replacing negative self-talk with more positive, empowering, and affirming statements.
<i>Relapse Prevention</i>	Techniques used to help clients prepare to address high-risk situations for relapse with appropriate strategies and thinking. Incorporates both cognitive and behavioral strategies to enhance long-term behavior change outcomes.	Assist clients: • Assess if external circumstances are contributing to lapse, e.g., loss of job or support system • Identify high-risk situations for slips • Analyze reactions to slips • Acquire knowledge and skills necessary to address high-risk situations • Gain confidence in their ability to succeed in high-risk situations
<i>Rewards/Contingency Management</i>	A systematic process by which behaviors can be changed through the use of rewards for specific actions. Rewards may be derived from the client or the provider.	• Provide rewards for desired behaviors, e.g., attendance, diet progress, consistent self-monitoring, physical activity • Rewards can be monetary, prizes, parking space, gift certificates • Assist clients in determining rewards for achievement • Ensure rewards are not received if progress is not made

Strategies (C-2)

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Updated: 2013 Edition

Collaboration and Referral of Nutrition Care (RC-1)

Definition

Facilitating services or interventions with other professionals, institutions, or agencies on behalf of the patient/client prior to discharge from nutrition care.

Details of Intervention

A typical intervention might be further described with the following details. RDs/food and nutrition professionals recommend, implement, or order nutrition interventions and the action(s) may be to initiate, modify or discontinue a nutrition intervention(s):

- Team meeting (Holding a team meeting to develop a comprehensive plan of care)
- Referral to RD/nutrition professional with different expertise (A referral for care by other food and nutrition professionals who provide different expertise)
- Collaborate with other nutrition professionals (Collaboration by nutrition professional with other nutrition professionals)
- Collaborate with other providers (Collaboration with others such as the physician, dentist, physical therapist, social worker, occupational therapist, speech therapist, nurse, pharmacist, or other specialist dietitian)
- Referral to other provider (Refer to others such as the physician, dentist, physical therapist, social worker, occupational therapist, speech therapist, nurse, pharmacist, or other specialist dietitian/nutrition professional)
- Referral to community agencies/programs (Refer to an appropriate agency/program (e.g., home delivered meals), assistance programs for women, infants and children (e.g.WIC), food assistance programs (e.g., food pantry, soup kitchen, food stamps) housing assistance, shelters, rehabilitation, physical and mental disability programs, education training, and employment programs))

Typically Used with the Following

Nutrition Diagnostic Terminology Used in PES Statements	Common Examples (not intended to be inclusive)
<i>Nutrition Diagnoses</i>	• Inadequate oral intake (NI 2.1) • Altered nutrition-related laboratory values (NC-2.2) • Unintended weight loss (NC-3.2) • Excessive alcohol intake (NI-4.3) • Less than optimal intake of types of fats (NI-5.6.3) • Overweight/obesity (NC-3.3) • Physical inactivity (NB-2.1) • Food–medication interaction (NC-2.3) • Self-feeding difficulty (NB-2.6) • Limited access to food or water (NB-3.2)

Collaboration and Referral of Nutrition Care (RC-1)

<i>Etiology</i>	Physical Examination Findings • Physical disability with impaired feeding ability, other impairments related to activities of daily living • Growth and development issues Food/Nutrition History • Inadequate intake • Nutrient drug interactions Psychological/Social History • Transportation issues • Food acceptance issues • Developmental issues • Economic considerations impacting food/nutrient intake
<i>Signs and Symptoms</i>	Physical Examination Findings • Weight loss • Unacceptable growth rates compared to standard growth charts Food/Nutrition History • More than 10% weight loss in 6 months • Hyperglycemia and weight loss • Poor wound healing Client History • Inability to procure food • Anorexia nervosa • Lack of access to food sources • Lack of food preparation skills

Other considerations (e.g., patient/client negotiation, patient/client needs and desires, and readiness to change)

- Availability of services related to patient/client need (specialty dietitians, clinical pharmacists, speech pathologists, nurse practitioners, etc.)
- Anticipated duration of health care encounter/hospital or long-term care discharge
- Resources available for care
- Government medical programs (e.g., Medicare/Medicaid) insurance guidelines and restrictions
- Food assistance program (e.g., food stamp program) guidelines and regulations

References

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Updated: 2013 Edition

Discharge and Transfer of Nutrition Care to a New Setting or Provider (RC-2)

Definition

Discharge planning and transfer of nutrition care from one level or location of care to another.

Details of Intervention

A typical intervention might be further described with the following details. Food and nutrition professionals recommend, implement, or order nutrition interventions and the action(s) may be to initiate, modify or discontinue a nutrition intervention(s):

- Discharge and transfer to other providers: Refer to others such as the physician, dentist, physical therapist, social worker, occupational therapist, speech therapist, nurse, or pharmacist
- Discharge and transfer to community agencies/programs: Refer to a community agency/program (e.g., home delivered meals, assistance programs for women, infants and children [e.g., WIC], food assistance programs [e.g., food pantry, soup kitchen, food stamps], housing assistance, shelters, rehabilitation, physical and mental disability programs, education, training and employment programs)
- Discharge and transfer to another nutrition professional: Transfer of nutrition care to another food and nutrition professional

Typically Used with the Following

Nutrition Diagnostic Terminology Used in PES Statements	Common Examples (not intended to be inclusive)
<i>Nutrition Diagnoses</i>	• Inadequate oral intake (NI-2.1) • Imbalance of nutrients (NI-5.5) • Less than optimal intake of types of fats (NI-5.6.3) • Food–medication interaction (NC-2.3) • Underweight (NC-3.1) • Overweight/obesity (NC-3.3) • Impaired ability to prepare foods/meals (NB-2.4) • Self-feeding difficulty (NB-2.6)
<i>Etiology</i>	Food/Nutrition History • Long-term insufficient intake mandating home enteral or parenteral nutrition • Growth and development considerations requiring intervention in a new setting
<i>Signs and Symptoms</i>	Biochemical Data, Medical Tests and Procedures • Abnormal lab values Anthropometric Measurements • Less than optimal weight status • Continuing weight gain or loss Food/Nutrition History • Less than optimal dietary practices • Unsupported beliefs and attitudes Client History • Treatment failure • Readmission

Discharge and Transfer of Nutrition Care to a New Setting or Provider (RC-2)

Other considerations (e.g., patient/client negotiation, patient/client needs and desires, and readiness to change)

- Availability of discharge planning services, options for care
- Preferences for the level and location of care
- Resources available for care
- Government medical programs (e.g. Medicare/Medicaid), insurance guidelines and restrictions
- Health literacy
- Ability to implement treatment at home
- Food assistance program (e.g., food stamp program) guidelines and regulations

References

1. Baker EB, Wellman NS. Nutrition concerns for discharge planning for older adults: a need for multidisciplinary collaboration. *J Am Diet Assoc.* 2005;105:603-607.
2. Position of the American Dietetic Association. Nutrition across the spectrum of aging. *J Am Diet Assoc.* 2005;105: 616-633.

Updated: 2013 Edition

Nutrition Assessment and Monitoring and Evaluation Terminology

This is a combined list of Nutrition Assessment and Monitoring and Evaluation terms. Indicators that are shaded are used ONLY for nutrition assessment. The rest of the indicators are used for assessment and monitoring and evaluation. Each term has an Academy unique identifier, a five-digit number (e.g., 99999) following the alpha-numeric IDNT code. Neither should be visible in nutrition documentation. The Academy unique identifier is for data tracking purposes in electronic health records.

FOOD/NUTRITION-RELATED HISTORY (FH)

Food and nutrient intake, food and nutrient administration, medication and complementary/alternative medicine use, knowledge/beliefs/attitudes, behavior, food and supply availability, physical activity and function, nutrition-related patient/client-centered measures.

Food and Nutrient Intake (1)

Composition and adequacy of food and nutrient intake, meal and snack patterns, current and previous diets and/or food modifications, and eating environment.

Energy Intake (1.1)

Total energy intake from all sources including food, beverages, breastmilk/formula, supplements, and via enteral and parenteral routes.

Energy intake (1.1.1)

☐ Total energy intake FH-1.1.1.1 10005

Food and Beverage Intake (1.2)

Type, amount, and pattern of intake of foods and food groups, indices of diet quality, intake of fluids, breastmilk and infant formula

Fluid/beverage intake (1.2.1)

☐ Oral fluids FH-1.2.1.1 10008
☐ Food-derived fluids FH-1.2.1.2 10009
☐ Liquid meal replacement or supplement FH-1.2.1.3 10010

Food intake (1.2.2)

☐ Amount of food FH-1.2.2.1 10012
☐ Types of food/meals FH-1.2.2.2 10013
☐ Meal/snack pattern FH-1.2.2.3 10014
☐ Diet quality index FH-1.2.2.4 10015
☐ Food variety FH-1.2.2.5 10016

Breastmilk/infant formula intake (1.2.3)

☐ Breastmilk intake FH-1.2.3.1 10018
☐ Infant formula intake FH-1.2.3.2 10019

Enteral and Parenteral Nutrition Intake (1.3)

Specialized nutrition support intake from all sources, e.g., enteral and parenteral routes.

Enteral nutrition intake (1.3.1)

☐ Formula/solution FH-1.3.1.1 10022
☐ Feeding tube flush FH-1.3.1.2 10023

Parenteral nutrition intake (1.3.2)

☐ Formula/solution FH-1.3.2.1 10025
☐ IV fluids FH-1.3.2.2 10026

Bioactive Substance Intake (1.4)

Alcohol, plant stanol and sterol esters, soy protein, psyllium and β -glucan, and caffeine intake from all sources, e.g., food, beverages, supplements, and via enteral and parenteral routes.

Alcohol intake (1.4.1)

☐ Drink size/volume FH-1.4.1.1 10029
☐ Frequency FH-1.4.1.2 10030
☐ Pattern of alcohol consumption FH-1.4.1.3 10031

Bioactive substance intake (1.4.2)

☐ Plant stanol esters FH-1.4.2.1 10034
☐ Plant sterol esters FH-1.4.2.2 10035
☐ Soy protein FH-1.4.2.3 10037
☐ Psyllium FH-1.4.2.4 10037
☐ β -glucan FH-1.4.2.5 10037
☐ Food additives (specify) FH-1.4.2.6 10038
☐ Other (specify) FH-1.4.2.7 10039

Caffeine intake (1.4.3)

☐ Total caffeine FH-1.4.3.1 10041

Macronutrient Intake (1.5)

Fat and cholesterol, protein, carbohydrate, and fiber intake from all sources including food, beverages, supplements, and via enteral and parenteral routes.

Fat and cholesterol intake (1.5.1)

☐ Total fat FH-1.5.1.1 10044
☐ Saturated fat FH-1.5.1.2 10045
☐ Trans fatty acids FH-1.5.1.3 10046

Fat and cholesterol intake (1.5.1), cont'd

☐ Polyunsaturated fat FH-1.5.1.4 10047
☐ Monounsaturated fat FH-1.5.1.5 10048
☐ Omega-3 fatty acids FH-1.5.1.6 10049
☐ Dietary cholesterol FH-1.5.1.7 10050
☐ Essential fatty acids FH-1.5.1.8 10051

Protein intake (1.5.2)

☐ Total protein FH-1.5.2.1 10053
☐ High biological value protein FH-1.5.2.2 10054
☐ Casein FH-1.5.2.3 10055
☐ Whey FH-1.5.2.4 10056
☐ Amino acids FH-1.5.2.5 10057
☐ Essential amino acids FH-1.5.2.6 10058

Carbohydrate intake (1.5.3)

☐ Total carbohydrate FH-1.5.3.1 10060
☐ Sugar FH-1.5.3.2 10061
☐ Starch FH-1.5.3.3 10062
☐ Glycemic index FH-1.5.3.4 10063
☐ Glycemic load FH-1.5.3.5 10064
☐ Source of carbohydrate FH-1.5.3.6 10065
☐ Insulin-to-carbohydrate ratio FH-1.5.3.7 10066

Fiber intake (1.5.4)

☐ Total fiber FH-1.5.4.1 10068
☐ Soluble fiber FH-1.5.4.2 10069
☐ Insoluble fiber FH-1.5.4.3 10070

Micronutrient Intake (1.6)

Vitamin and mineral intake from all sources, e.g., food, beverages, supplements, and via enteral and parenteral routes.

Vitamin intake (1.6.1)

☐ A (1) 10073	☐ Niacin (8) 10080
☐ C (2) 10074	☐ Folate (9) 10081
☐ D (3) 10075	☐ B6 (10) 10082
☐ E (4) 10076	☐ B12 (11) 10083
☐ K (5) 10077	☐ Pantothenic acid (12) 10084
☐ Thiamin (6) 10078	☐ Biotin (13) 10085
☐ Riboflavin (7) 10079	☐ Multivitamin (14) 10086

Mineral/element intake (1.6.2)

☐ Calcium (1) 10089	☐ Copper (11) 10099
☐ Chloride (2) 10090	☐ Iodine (12) 10100
☐ Iron (3) 10091	☐ Selenium (13) 10101
☐ Magnesium (4) 10092	☐ Manganese (14) 10102
☐ Potassium (5) 10093	☐ Chromium (15) 10103
☐ Phosphorus (6) 10094	☐ Molybdenum (16) 10104
☐ Sodium (7) 10095	☐ Boron (17) 10105
☐ Zinc (8) 10096	☐ Cobalt (18) 10106
☐ Sulfate (9) 10097	☐ Multi-mineral (19) 10107
☐ Fluoride (10) 10098	☐ Multi-trace element (20) 10108

Food and Nutrient Administration (2)

Current and previous diets and/or food modifications, eating environment, and enteral and parenteral nutrition administration.

Diet History (2.1)

Description of food and drink regularly provided or consumed, past diets followed or prescribed and counseling received, and the eating environment.

Diet order (2.1.1)

☐ General, healthful diet FH-2.1.1.1 10113
☐ Modified diet FH-2.1.1.2 10114
☐ Enteral nutrition order FH-2.1.1.3 10115
☐ Parenteral nutrition order FH-2.1.1.4 10116

Diet experience (2.1.2)

☐ Previously prescribed diets FH-2.1.2.1 10118
☐ Previous diet/nutrition education/counseling FH-2.1.2.2 10119
☐ Self-selected diet/s followed FH-2.1.2.3 10120
☐ Dieting attempts FH-2.1.2.4 10121
☐ Food allergies FH-2.1.2.5 10805
☐ Food intolerance FH-2.1.2.6 10806

Nutrition Assessment and Monitoring and Evaluation Terminology, cont'd

Eating environment (2.1.3)

☐ Location	FH-2.1.3.1	10123
☐ Atmosphere	FH-2.1.3.2	10124
☐ Caregiver/companion	FH-2.1.3.3	10125
☐ Appropriate breastfeeding accommodations/facility	FH-2.1.3.4	10126
☐ Eats alone	FH-2.1.3.5	10127

Enteral and parenteral nutrition administration (2.1.4)

☐ Enteral access	FH-2.1.4.1	10129
☐ Parenteral access	FH-2.1.4.2	10130
☐ Body position, EN	FH-2.1.4.3	10804

Medication and Complementary/Alternative Medicine Use (3)

Prescription and over-the-counter medications, including herbal preparations and complementary/alternative medicine products used.

Medications (3.1)

☐ Prescription medication use	FH-3.1.1	10820
☐ OTC medication use	FH-3.1.2	10134
☐ Misuse of medication	FH-3.1.3	10135

Complementary/Alternative Medicine (3.2)

☐ Nutrition-related complementary/alternative medicine use	FH-3.2.1	10137
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Knowledge/Beliefs/Attitudes (4)

Understanding of nutrition-related concepts and conviction of the truth and feelings/emotions toward some nutrition-related statement or phenomenon, along with readiness to change nutrition-related behaviors.

Food and nutrition knowledge/skill (4.1)

☐ Area(s) and level of knowledge/skill	FH-4.1.1	10848
☐ Diagnosis specific or global nutrition-related knowledge score	FH-4.1.2	10143

Beliefs and attitudes (4.2)

☐ Conflict with personal/family value system	FH-4.2.1	10145
☐ Distorted body image	FH-4.2.2	10146
☐ End-of-life decisions	FH-4.2.3	10147
☐ Motivation	FH-4.2.4	10148
☐ Preoccupation with food/nutrients	FH-4.2.5	10149
☐ Preoccupation with weight	FH-4.2.6	10150
☐ Readiness to change nutrition-related behaviors	FH-4.2.7	10151
☐ Self-efficacy	FH-4.2.8	10152
☐ Self-talk/cognitions	FH-4.2.9	10153
☐ Unrealistic nutrition-related goals	FH-4.2.10	10154
☐ Unscientific beliefs/attitudes	FH-4.2.11	10155
☐ Food preferences	FH-4.2.12	10156
☐ Emotions	FH-4.2.13	10157

Behavior (5)

Patient/client activities and actions, which influence achievement of nutrition-related goals.

Adherence (5.1)

☐ Self-reported adherence score	FH-5.1.1	10160
☐ Nutrition visit attendance	FH-5.1.2	10161
☐ Ability to recall nutrition goals	FH-5.1.3	10162
☐ Self-monitoring at agreed upon rate	FH-5.1.4	10163
☐ Self-management as agreed upon	FH-5.1.5	10164

Avoidance behavior (5.2)

☐ Avoidance	FH-5.2.1	10166
☐ Restrictive eating	FH-5.2.2	10167
☐ Cause of avoidance behavior	FH-5.2.3	10168

Bingeing and purging behavior (5.3)

☐ Binge eating behavior	FH-5.3.1	10170
☐ Purging behavior	FH-5.3.2	10171

Mealtime behavior (5.4)

☐ Meal duration	FH-5.4.1	10173
☐ Percent of meal time spent eating	FH-5.4.2	10174
☐ Preference to drink rather than eat	FH-5.4.3	10175
☐ Refusal to eat/chew	FH-5.4.4	10176
☐ Spitting food out	FH-5.4.5	10177
☐ Rumination	FH-5.4.6	10178
☐ Patient/client/caregiver fatigue during feeding process resulting in inadequate intake	FH-5.4.7	10179

Mealtime behavior (5.4), cont'd

☐ Willingness to try new foods	FH-5.4.8	10180
☐ Limited number of accepted foods	FH-5.4.9	10181
☐ Rigid sensory preferences	FH-5.4.10	10182

Social network (5.5)

☐ Ability to build and utilize social network	FH-5.5.1	10184
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Factors Affecting Access to Food and Food/Nutrition-Related Supplies (6)

Factors that affect intake and availability of a sufficient quantity of safe, healthful food as well as food/nutrition-related supplies.

Food/nutrition program participation (6.1)

☐ Eligibility for government programs	FH-6.1.1	10187
☐ Participation in government programs	FH-6.1.2	10188
☐ Eligibility for community programs	FH-6.1.3	10189
☐ Participation in community programs	FH-6.1.4	10190

Safe food/meal availability (6.2)

☐ Availability of shopping facilities	FH-6.2.1	10192
☐ Procurement of safe food	FH-6.2.2	10800
☐ Appropriate meal preparation facilities	FH-6.2.3	10194
☐ Availability of safe food storage	FH-6.2.4	10195
☐ Appropriate storage technique	FH-6.2.5	10196
☐ Identification of safe food	FH-6.2.6	10801

Safe water availability (6.3)

☐ Availability of potable water	FH-6.3.1	10198
☐ Appropriate water decontamination	FH-6.3.2	10199

Food and nutrition-related supplies availability (6.4)

☐ Access to food and nutrition-related supplies	FH-6.4.1	10201
☐ Access to assistive eating devices	FH-6.4.2	10202
☐ Access to assistive food preparation devices	FH-6.4.3	10203

Physical Activity and Function (7)

Physical activity, cognitive and physical ability to engage in specific tasks, e.g., breastfeeding, self-feeding.

Breastfeeding (7.1)

☐ Initiation of breastfeeding	FH-7.1.1	10206
☐ Duration of breastfeeding	FH-7.1.2	10207
☐ Exclusive breastfeeding	FH-7.1.3	10208
☐ Breastfeeding problems	FH-7.1.4	10209

Nutrition-related ADLs and IADLs (7.2)

☐ Physical ability to complete tasks for meal preparation	FH-7.2.1	10211
☐ Physical ability to self-feed	FH-7.2.2	10212
☐ Ability to position self in relation to plate	FH-7.2.3	10213
☐ Receives assistance with intake	FH-7.2.4	10214
☐ Ability to use adaptive eating devices	FH-7.2.5	10215
☐ Cognitive ability to complete tasks for meal preparation	FH-7.2.6	10216
☐ Remembers to eat	FH-7.2.7	10139
☐ Recalls eating	FH-7.2.8	10218
☐ Mini Mental State Examination Score	FH-7.2.9	10219
☐ Nutrition-related activities of daily living (ADL) score	FH-7.2.10	10220
☐ Nutrition-related instrumental activities of daily living (IADL) score	FH-7.2.11	10221

Physical activity (7.3)

☐ Physical activity history	FH-7.3.1	10223
☐ Consistency	FH-7.3.2	10224
☐ Frequency	FH-7.3.3	10225
☐ Duration	FH-7.3.4	10226
☐ Intensity	FH-7.3.5	10227
☐ Type of physical activity	FH-7.3.6	10228
☐ Strength	FH-7.3.7	10229
☐ TV/screen time	FH-7.3.8	10230
☐ Other sedentary activity time	FH-7.3.9	10231
☐ Involuntary physical movement	FH-7.3.10	10232
☐ NEAT	FH-7.3.11	10233

Nutrition Assessment and Monitoring and Evaluation Terminology, cont'd

Factors affecting access to physical activity (7.4)

□ Neighborhood safety	FH-7.4.1	10822
□ Walkability of neighborhood	FH-7.4.2	10823
□ Proximity to parks/green space	FH-7.4.3	10824
□ Access to physical activity facilities/programs	FH-7.4.4	10825

Nutrition-Related Patient/Client-Centered Measures (8)

Patient/client's perception of his or her nutrition intervention and its impact on life.

Nutrition quality of life (8.1)

□ Nutrition quality of life responses	FH-8.1.1	10236
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ANTHROPOMETRIC MEASUREMENTS (AD)

Height, weight, body mass index (BMI), growth pattern indices/percentile ranks, and weight history.

Body composition/growth/weight history (1.1)

□ Height/length	AD-1.1.1	10239
□ Weight	AD-1.1.2	10240
□ Frame size	AD-1.1.3	10241
□ Weight change	AD-1.1.4	10242
□ Body mass index	AD-1.1.5	10243
□ Growth pattern indices/percentile ranks	AD-1.1.6	10244
□ Body compartment estimates	AD-1.1.7	10245

BIOCHEMICAL DATA, MEDICAL TESTS

AND PROCEDURES (BD)

Laboratory data, (e.g., electrolytes, glucose, and lipid panel) and tests (e.g., gastric emptying time, resting metabolic rate).

Acid-base balance (1.1)

□ Arterial pH	BD-1.1.1	10248
□ Arterial bicarbonate	BD-1.1.2	10249
□ Partial pressure of carbon dioxide in arterial blood, PaCO ₂	BD-1.1.3	10250
□ Partial pressure of oxygen in arterial blood, PaO ₂	BD-1.1.4	10251
□ Venous pH	BD-1.1.5	10252
□ Venous bicarbonate	BD-1.1.6	10253

Electrolyte and renal profile (1.2)

□ BUN	BD-1.2.1	10255
□ Creatinine	BD-1.2.2	10256
□ BUN:creatinine ratio	BD-1.2.3	10257
□ Glomerular filtration rate	BD-1.2.4	10258
□ Sodium	BD-1.2.5	10259
□ Chloride	BD-1.2.6	10260
□ Potassium	BD-1.2.7	10261
□ Magnesium	BD-1.2.8	10262
□ Calcium, serum	BD-1.2.9	10263
□ Calcium, ionized	BD-1.2.10	10264
□ Phosphorus	BD-1.2.11	10265
□ Serum osmolality	BD-1.2.12	10266
□ Parathyroid hormone	BD-1.2.13	10267

Essential fatty acid profile (1.3)

□ Triene:Tetraene ratio	BD-1.3.1	10269
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Gastrointestinal profile (1.4)

□ Alkaline phosphatase	BD-1.4.1	10271
□ Alanine aminotransferase, ALT	BD-1.4.2	10272
□ Aspartate aminotransferase, AST	BD-1.4.3	10273
□ Gamma glutamyl transferase, GGT	BD-1.4.4	10274
□ Gastric residual volume	BD-1.4.5	10275
□ Bilirubin, total	BD-1.4.6	10276
□ Ammonia, serum	BD-1.4.7	10277
□ Toxicology report, including alcohol	BD-1.4.8	10278
□ Prothrombin time, PT	BD-1.4.9	10279
□ Partial thromboplastin time, PTT	BD-1.4.10	10280
□ INR (ratio)	BD-1.4.11	10281
□ Fecal fat	BD-1.4.12	10282
□ Amylase	BD-1.4.13	10283
□ Lipase	BD-1.4.14	10284
□ Other digestive enzymes (specify)	BD-1.4.15	10285
□ D-xylose	BD-1.4.16	10286
□ Hydrogen breath test	BD-1.4.17	10287
□ Intestinal biopsy	BD-1.4.18	10288
□ Stool culture	BD-1.4.19	10289

Gastrointestinal profile (1.4), cont'd

□ Gastric emptying time	BD-1.4.20	10290
□ Small bowel transit time	BD-1.4.21	10291
□ Abdominal films	BD-1.4.22	10292
□ Swallow study	BD-1.4.23	10293

Glucose/endocrine profile (1.5)

□ Glucose, fasting	BD-1.5.1	10295
□ Glucose, casual	BD-1.5.2	10296
□ HgA1c	BD-1.5.3	10297
□ Preprandial capillary plasma glucose	BD-1.5.4	10298
□ Peak postprandial capillary plasma glucose	BD-1.5.5	10299
□ Glucose tolerance test	BD-1.5.6	10300
□ Cortisol level	BD-1.5.7	10301
□ IGF-binding protein	BD-1.5.8	10302
□ Thyroid function tests (TSH, T4, T3)	BD-1.5.9	10303
□ Pituitary hormone tests (GH, ACTH, LH, FSH)	BD-1.5.10	10826

Inflammatory profile (1.6)

□ C-reactive protein ¹	BD-1.6.1	10305
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Lipid profile (1.7)

□ Cholesterol, serum	BD-1.7.1	10307
□ Cholesterol, HDL	BD-1.7.2	10308
□ Cholesterol, LDL	BD-1.7.3	10309
□ Cholesterol, non-HDL	BD-1.7.4	10310
□ Total cholesterol:HDL cholesterol	BD-1.7.5	10311
□ LDL:HDL	BD-1.7.6	10312
□ Triglycerides, serum	BD-1.7.7	10313

Metabolic rate profile (1.8)

□ Resting metabolic rate, measured	BD-1.8.1	10315
□ Respiratory quotient, measured	BD-1.8.2	10316

Mineral profile (1.9)

□ Copper, serum or plasma	BD-1.9.1	10318
□ Iodine, urinary excretion	BD-1.9.2	10319
□ Zinc, serum or plasma	BD-1.9.3	10320
□ Boron, serum or plasma	BD-1.9.4	10841
□ Chromium, serum or urinary	BD-1.9.5	10842
□ Fluoride, plasma	BD-1.9.6	10843
□ Manganese, urinary, blood, plasma	BD-1.9.7	10844
□ Molybdenum, serum	BD-1.9.8	10845
□ Selenium, serum or urinary	BD-1.9.9	10846

Nutritional anemia profile (1.10)

□ Hemoglobin	BD-1.10.1	10323
□ Hematocrit	BD-1.10.2	10324
□ Mean corpuscular volume	BD-1.10.3	10325
□ Red blood cell folate	BD-1.10.4	10326
□ Red cell distribution width	BD-1.10.5	10327
□ B12, serum	BD-1.10.6	10328
□ Methylmalonic acid, serum	BD-1.10.7	10329
□ Folate, serum	BD-1.10.8	10330
□ Homocysteine, serum	BD-1.10.9	10331
□ Ferritin, serum	BD-1.10.10	10332
□ Iron, serum	BD-1.10.11	10333
□ Total iron-binding capacity	BD-1.10.12	10334
□ Transferrin saturation	BD-1.10.13	10335

Protein profile (1.11)

□ Albumin	BD-1.11.1	10337
□ Prealbumin	BD-1.11.2	10338
□ Transferrin	BD-1.11.3	10339
□ Phenylalanine, plasma	BD-1.11.4	10340
□ Tyrosine, plasma	BD-1.11.5	10341
□ Amino acid, other, specify	BD-1.11.6	10342
□ Antibody level, specify	BD-1.11.7	10343
□ Carbohydrate-deficient transferrin	BD 1.11.8	10847

Urine profile (1.12)

□ Urine color	BD-1.12.1	10345
□ Urine osmolality	BD 1.12.2	10346
□ Urine specific gravity	BD-1.12.3	10347
□ Urine test, specify	BD-1.12.4	10348
□ Urine volume	BD-1.12.5	10349

Nutrition Assessment and Monitoring and Evaluation Terminology, cont'd

Vitamin profile (1.13)

☐ Vitamin A, serum or plasma retinol	BD-1.13.1	10351
☐ Vitamin C, plasma or serum	BD-1.13.2	10352
☐ Vitamin D, 25-hydroxy	BD-1.13.3	10353
☐ Vitamin E, plasma alpha-tocopherol	BD-1.13.4	10354
☐ Thiamin, activity coefficient for erythrocyte transketolase activity	BD-1.13.5	10355
☐ Riboflavin, activity coefficient for erythrocyte glutathione reductase activity	BD-1.13.6	10356
☐ Niacin, urinary N ⁵ -methyl-nicotinamide concentration	BD-1.13.7	10357
☐ Vitamin B6, plasma or serum pyridoxal 5'-phosphate concentration	BD-1.13.8	10358
☐ Pantothenic acid, urinary pantothenate excretion, plasma	BD-1.13.9	10850
☐ Biotin, urinary 3-hydroxyisovaleric acid excretion or lymphocyte propionyl-CoA carboxylase in pregnancy, serum	BD-1.13.10	10851

NUTRITION-FOCUSED PHYSICAL FINDINGS (PD)

Findings from an evaluation of body systems, muscle and subcutaneous fat wasting, oral health, suck/swallow/breathe ability, appetite, and affect.

Nutrition-focused physical findings (1.1)

☐ Overall appearance (specify) _____	PD-1.1.1	10362
☐ Body language (specify) _____	PD-1.1.2	10363
☐ Cardiovascular-pulmonary (specify) _____	PD-1.1.3	10364
☐ Extremities, muscles and bones (specify) _____	PD-1.1.4	10365
☐ Digestive system (mouth to rectum) (specify) _____	PD-1.1.5	10366
☐ Head and eyes (specify) _____	PD-1.1.6	10367
☐ Nerves and cognition (specify) _____	PD-1.1.7	10368
☐ Skin (specify) _____	PD-1.1.8	10369
☐ Vital signs (specify) _____	PD-1.1.9	10370

CLIENT HISTORY (CH)

Current and past information related to personal, medical, family, and social history.

Personal History (1)

General patient/client information such as age, gender, race/ethnicity, language, education, and role in family.

Personal data (1.1)

☐ Age	CH-1.1.1	10374
☐ Gender	CH-1.1.2	10375
☐ Race/Ethnicity	CH-1.1.3	10376
☐ Language	CH-1.1.4	10377
☐ Literacy factors	CH-1.1.5	10378
☐ Education	CH-1.1.6	10379
☐ Role in family	CH-1.1.7	10380
☐ Tobacco use	CH-1.1.8	10381
☐ Physical disability	CH-1.1.9	10382
☐ Mobility	CH-1.1.10	10383

Patient/Client/Family Medical/Health History (2)

Patient/client or family disease states, conditions, and illnesses that may have nutritional impact.

Patient/client OR family nutrition-oriented medical/health history (2.1)

Specify issue(s) and whether it is patient/client history (P) or family history (F)

☐ Patient/client chief nutrition complaint (specify) _____	CH-2.1.1	10386
☐ Cardiovascular (specify) _____	CH-2.1.2	10387
☐ Endocrine/metabolism (specify) _____	CH-2.1.3	10388
☐ Excretory (specify) _____	CH-2.1.4	10389

Patient/client OR family nutrition-oriented medical/health history (2.1), cont'd

Specify issue(s) and whether it is patient/client history (P) or family history (F)

☐ Gastrointestinal (specify) _____	CH-2.1.5	10390
☐ Gynecological (specify) _____	CH-2.1.6	10391
☐ Hematology/oncology (specify) _____	CH-2.1.7	10392
☐ Immune (e.g., food allergies) (specify) _____	CH-2.1.8	10393
☐ Integumentary (specify) _____	CH-2.1.9	10394
☐ Musculoskeletal (specify) _____	CH-2.1.10	10395
☐ Neurological (specify) _____	CH-2.1.11	10396
☐ Psychological (specify) _____	CH-2.1.12	10397
☐ Respiratory (specify) _____	CH-2.1.13	10398
☐ Other (specify) _____	CH-2.1.14	10399

Treatments/therapy (2.2)

Documented medical or surgical treatments that may impact nutritional status of the patient

☐ Medical treatment/therapy (specify) _____	CH-2.2.1	10401
☐ Surgical treatment (specify) _____	CH-2.2.2	10402
☐ Palliative/end-of-life care (specify) _____	CH-2.2.3	10404

Social History (3)

Patient/client socioeconomic status, housing situation, medical care support and involvement in social groups.

Social history (3.1)

☐ Socioeconomic factors (specify) _____	CH-3.1.1	10407
☐ Living/housing situation (specify) _____	CH-3.1.2	10408
☐ Domestic issues (specify) _____	CH-3.1.3	10409
☐ Social and medical support (specify) _____	CH-3.1.4	10410
☐ Geographic location of home (specify) _____	CH-3.1.5	10411
☐ Occupation (specify) _____	CH-3.1.6	10412
☐ Religion (specify) _____	CH-3.1.7	10413
☐ History of recent crisis (specify) _____	CH-3.1.8	10414
☐ Daily stress level	CH-3.1.9	10415

COMPARATIVE STANDARDS (CS)

Energy Needs (1)

Estimated energy needs (1.1)

☐ Total energy estimated needs	CS-1.1.1	10419
☐ Method for estimating needs	CS-1.1.2	10420

Macronutrient Needs (2)

Estimated fat needs (2.1)

☐ Total fat estimated needs	CS-2.1.1	10423
☐ Type of fat needed	CS-2.1.2	10424
☐ Method for estimating needs	CS-2.1.3	10425

Estimated protein needs (2.2)

☐ Total protein estimated needs	CS-2.2.1	10427
☐ Type of protein needed	CS-2.2.2	10428
☐ Method for estimating needs	CS-2.2.3	10429

Nutrition Assessment and Monitoring and Evaluation Terminology, cont'd

Estimated carbohydrate needs (2.3)

☐ Total carbohydrate estimated needs	CS-2.3.1	10431
☐ Type of carbohydrate needed	CS-2.3.2	10432
☐ Method for estimating needs	CS-2.3.3	10433

Estimated fiber needs (2.4)

☐ Total fiber estimated needs	CS-2.4.1	10435
☐ Type of fiber needed	CS-2.4.2	10436
☐ Method for estimating needs	CS-2.4.3	10437

Fluid Needs (3)

Estimated fluid needs (3.1)

☐ Total fluid estimated needs	CS-3.1.1	10440
☐ Method for estimating needs	CS-3.1.2	10441

Micronutrient Needs (4)

Estimated vitamin needs (4.1)

☐ A (1)	10444	☐ Niacin (8)	10451
☐ C (2)	10445	☐ Folate (9)	10452
☐ D (3)	10446	☐ B6 (10)	10453
☐ E (4)	10447	☐ B12 (11)	10454
☐ K (5)	10448	☐ Pantothenic acid (12)	10455
☐ Thiamin (6)	10449	☐ Biotin (13)	10456
☐ Riboflavin (7)	10450	☐ Method for estimating needs (14)	10458

Estimated mineral needs (4.2)

☐ Calcium (1)	10460	☐ Copper (11)	10471
☐ Chloride (2)	10461	☐ Iodine (12)	10473
☐ Iron (3)	10462	☐ Selenium (13)	10474
☐ Magnesium (4)	10463	☐ Manganese (14)	10475
☐ Potassium (5)	10464	☐ Chromium (15)	10476
☐ Phosphorus (6)	10465	☐ Molybdenum (16)	10477
☐ Sodium (7)	10466	☐ Boron (17)	10478
☐ Zinc (8)	10467	☐ Cobalt (18)	10479
☐ Sulfate (9)	10469	☐ Method for estimating needs (19)	10480
☐ Fluoride (10)	10470		

Weight and Growth Recommendation (5)

Recommended body weight/body mass Index/growth (5.1)

☐ Ideal/reference body weight (IBW)	CS-5.1.1	10483
☐ Recommended body mass index (BMI)	CS-5.1.2	10484
☐ Desired growth pattern	CS-5.1.3	10485

Nutrition Diagnostic Terminology

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INTAKE

Defined as "actual problems related to intake of energy, nutrients, fluids, bioactive substances through oral diet or nutrition support"

Energy Balance (1)

Defined as "actual or estimated changes in energy (calorie/kcal/kJ) balance"

☐ Increased energy expenditure	NI-1.1	10633
☐ Inadequate energy intake	NI-1.2	10634
☐ Excessive energy intake	NI-1.3	10635
☐ Predicted suboptimal energy intake	NI-1.4	10636
☐ Predicted excessive energy intake	NI-1.5	10637

Oral or Nutrition Support Intake (2)

Defined as "actual or estimated food and beverage intake from oral diet or nutrition support compared with patient goal"

☐ Inadequate oral intake	NI-2.1	10639
☐ Excessive oral intake	NI-2.2	10640
☐ Inadequate enteral nutrition infusion	NI-2.3	10641
☐ Excessive enteral nutrition infusion	NI-2.4	10642
☐ Less than optimal enteral nutrition composition or modality	NI-2.5	10852
☐ Inadequate parenteral nutrition infusion	NI-2.6	10644
☐ Excessive parenteral nutrition infusion	NI-2.7	10645
☐ Less than optimal parenteral nutrition composition or modality	NI-2.8	10853
☐ Limited food acceptance	NI-2.9	10647

Fluid Intake (3)

Defined as "actual or estimated fluid intake compared with patient goal"

☐ Inadequate fluid intake	NI-3.1	10649
☐ Excessive fluid intake	NI-3.2	10650

Bioactive Substances (4)

Defined as "actual or observed intake of bioactive substances, including single or multiple functional food components, ingredients, dietary supplements, alcohol"

☐ Inadequate bioactive substance intake (specify) _____	NI-4.1	10652
☐ Excessive bioactive substance intake (specify) _____	NI-4.2	10653
☐ Excessive alcohol intake	NI-4.3	10654

Nutrient (5)

Defined as "actual or estimated intake of specific nutrient groups or single nutrients as compared with desired levels"

☐ Increased nutrient needs (specify) _____	NI-5.1	10656
☐ Malnutrition	NI-5.2	10657
☐ Inadequate protein-energy intake	NI-5.3	10658
☐ Decreased nutrient needs (specify) _____	NI-5.4	10659
☐ Imbalance of nutrients	NI-5.5	10660

Fat and Cholesterol (5.6)

☐ Inadequate fat intake	NI-5.6.1	10662
☐ Excessive fat intake	NI-5.6.2	10663
☐ Less than optimal intake of types of fats (specify) _____	NI-5.6.3	10854

Protein (5.7)

☐ Inadequate protein intake	NI-5.7.1	10666
☐ Excessive protein intake	NI-5.7.2	10667
☐ Less than optimal intake of types of proteins or amino acids (specify) _____	NI-5.7.3	10855

Carbohydrate and Fiber (5.8)

☐ Inadequate carbohydrate intake	NI-5.8.1	10670
☐ Excessive carbohydrate intake	NI-5.8.2	10671
☐ Less than optimal intake of types of carbohydrate (specify) _____	NI-5.8.3	10856
☐ Inconsistent carbohydrate intake	NI-5.8.4	10673
☐ Inadequate fiber intake	NI-5.8.5	10675
☐ Excessive fiber intake	NI-5.8.6	10676

Vitamin (5.9)

☐ Inadequate vitamin intake (specify)

☐ A (1)	10679
☐ C (2)	10680
☐ D (3)	10681
☐ E (4)	10682
☐ K (5)	10683
☐ Thiamin (6)	10684
☐ Riboflavin (7)	10685

☐ Excessive vitamin intake (specify)

☐ A (1)	10694
☐ C (2)	10695
☐ D (3)	10696
☐ E (4)	10697
☐ K (5)	10698
☐ Thiamin (6)	10699
☐ Riboflavin (7)	10700

NI-5.9.1

☐ Niacin (8)	10686
☐ Folate (9)	10687
☐ B6 (10)	10688
☐ B12 (11)	10689
☐ Pantothenic acid (12)	10690
☐ Biotin (13)	10691

NI-5.9.2

☐ Niacin (8)	10701
☐ Folate (9)	10702
☐ B6 (10)	10703
☐ B12 (11)	10704
☐ Pantothenic acid (12)	10705
☐ Biotin (13)	10706

Mineral (5.10)

☐ Inadequate mineral intake (specify)

☐ Calcium (1)	10710
☐ Chloride (2)	10711
☐ Iron (3)	10712
☐ Magnesium (4)	10713
☐ Potassium (5)	10714
☐ Phosphorus (6)	10715
☐ Sodium (7)	10716
☐ Zinc (8)	10717
☐ Sulfate (9)	10718

NI-5.10.1

☐ Fluoride (10)	10719
☐ Copper (11)	10720
☐ Iodine (12)	10721
☐ Selenium (13)	10722
☐ Manganese (14)	10723
☐ Chromium (15)	10724
☐ Molybdenum (16)	10725
☐ Boron (17)	10726
☐ Cobalt (18)	10727

☐ Excessive mineral intake (specify)

☐ Calcium (1)	10730
☐ Chloride (2)	10731
☐ Iron (3)	10732
☐ Magnesium (4)	10733
☐ Potassium (5)	10734
☐ Phosphorus (6)	10735
☐ Sodium (7)	10736
☐ Zinc (8)	10737
☐ Sulfate (9)	10738

NI-5.10.2

☐ Fluoride (10)	10739
☐ Copper (11)	10740
☐ Iodine (12)	10741
☐ Selenium (13)	10742
☐ Manganese (14)	10743
☐ Chromium (15)	10744
☐ Molybdenum (16)	10745
☐ Boron (17)	10746
☐ Cobalt (18)	10747

Multi-nutrient (5.11)

☐ Predicted suboptimal nutrient intake (specify) _____

NI-5.11.1 10750

☐ Predicted excessive nutrient intake (specify) _____

NI-5.11.2 10751

CLINICAL

Defined as "nutritional findings/problems identified that relate to medical or physical conditions"

NC

Functional (1)

Defined as "change in physical or mechanical functioning that interferes with or prevents desired nutritional consequences"

☐ Swallowing difficulty	NC-1.1	10754
☐ Biting/Chewing (masticatory) difficulty	NC-1.2	10755
☐ Breastfeeding difficulty	NC-1.3	10756
☐ Altered GI function	NC-1.4	10757

Biochemical (2)

Defined as "change in capacity to metabolize nutrients as a result of medications, surgery, or as indicated by altered lab values"

☐ Impaired nutrient utilization	NC-2.1	10759
☐ Altered nutrition-related laboratory values (specify) _____	NC-2.2	10760
☐ Food-medication interaction (specify) _____	NC-2.3	10761
☐ Predicted food-medication interaction (specify) _____	NC-2.4	10762

Nutrition Diagnostic Terminology

Weight (3)

Defined as "chronic weight or changed weight status when compared with usual or desired body weight"

☐ Underweight	NC-3.1	10764
☐ Unintended weight loss	NC-3.2	10765
☐ Overweight/obesity	NC-3.3	
☐ Overweight, adult or pediatric (1)		10767
☐ Obese, pediatric (2)		10768
☐ Obese, Class I (3)		10769
☐ Obese, Class II (4)		10818
☐ Obese, Class III (5)		10819
☐ Unintended weight gain	NC-3.4	10770
☐ Suboptimal growth rate	NC-3.5	10802
☐ Excessive growth rate	NC-3.6	10803

BEHAVIORAL-ENVIRONMENTAL

NB

Defined as "nutritional findings/problems identified that relate to knowledge, attitudes/beliefs, physical environment, access to food, or food safety"

Knowledge and Beliefs (1)

Defined as "actual knowledge and beliefs as related, observed, or documented"

☐ Food- and nutrition-related knowledge deficit	NB-1.1	10773
☐ Unsupported beliefs/attitudes about food- or nutrition-related topics (use with caution)	NB-1.2	10857
☐ Not ready for diet/lifestyle change	NB-1.3	10775
☐ Self-monitoring deficit	NB-1.4	10776
☐ Disordered eating pattern	NB-1.5	10777
☐ Limited adherence to nutrition-related recommendations	NB-1.6	10778
☐ Undesirable food choices	NB-1.7	10779

Physical Activity and Function (2)

Defined as "actual physical activity, self-care, and quality-of-life problems as reported, observed, or documented"

☐ Physical inactivity	NB-2.1	10782
☐ Excessive physical activity	NB-2.2	10783
☐ Inability to manage self-care	NB-2.3	10780
☐ Impaired ability to prepare foods/meals	NB-2.4	10785
☐ Poor nutrition quality of life	NB-2.5	10786
☐ Self-feeding difficulty	NB-2.6	10787

Food Safety and Access (3)

Defined as "actual problems with food safety or access to food, water, or nutrition-related supplies"

☐ Intake of unsafe food	NB-3.1	10789
☐ Limited access to food or water	NB-3.2	10790
☐ Limited access to nutrition-related supplies	NB-3.3	10791

OTHER

N0

Defined as "nutrition findings that are not classified as intake, clinical or behavioral-environmental problems."

Other (1)

☐ No nutrition diagnosis at this time	N0-1.1	10795
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Nutrition Intervention Terminology

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Nutrition Prescription

NP-1.1

10794

The patient/client's individualized recommended dietary intake of energy and/or selected foods or nutrients based on current reference standards and dietary guidelines and the patient/client's health condition and nutrition diagnosis (specify).

FOOD AND/OR NUTRIENT DELIVERY

ND

Individualized approach for food/nutrient provision.

Meals and Snacks (1)

Regular eating episode (meal); food served between regular meals (snack).

☐ General/healthful diet	ND-1.1	10489
☐ Composition of meals/snacks	ND-1.2	
☐ Texture-modified diet (1)		10829
☐ Energy-modified diet (2)		10830
☐ Protein-modified diet (3)		10831
☐ Carbohydrate-modified diet (4)		10832
☐ Fat-modified diet (5)		10833
☐ Fiber-modified diet (6)		10834
☐ Fluid-modified diet (7)		10835
☐ Diets modified for specific foods or ingredients (8)		10836
☐ Vitamin-modified diet (9)		10837
☐ Mineral-modified diet (10)		10838
☐ Schedule of food/fluids	ND-1.3	10815
☐ Specific foods/beverages or groups	ND-1.4	10492
☐ Other	ND-1.5	10493
(specify) _____		

Enteral and Parenteral Nutrition (2)

Nutrition provided through the GI tract via tube, catheter, or stoma (enteral) or intravenously (centrally or peripherally) (parenteral).

Enteral Nutrition (2.1)

Nutrition provided through the GI tract.

☐ Composition	ND-2.1.1	10503
☐ Concentration	ND-2.1.2	10502
☐ Rate	ND-2.1.3	10500
☐ Volume	ND-2.1.4	10501
☐ Schedule	ND-2.1.5	10504
☐ Route	ND-2.1.6	10792
☐ Insert enteral feeding tube	ND-2.1.7	10497
☐ Site care	ND-2.1.8	10498
☐ Feeding tube flush	ND-2.1.9	10499

Parenteral Nutrition/IV Fluids (2.2)

Nutrition and fluids provided intravenously.

☐ Composition	ND-2.2.1	10511
☐ Concentration	ND-2.2.2	10510
☐ Rate	ND-2.2.3	10509
☐ Schedule	ND-2.2.4	10512
☐ Route	ND-2.2.5	10793
☐ Site care	ND-2.2.6	10507
☐ IV fluids	ND-2.2.7	10508

Supplements (3)

Medical Food Supplements (3.1)

Commercial or prepared foods or beverages that supplement energy, protein, carbohydrate, fiber, fat intake.

☐ Commercial beverage	ND-3.1.1	10515
☐ Commercial food	ND-3.1.2	10516
☐ Modified beverage	ND-3.1.3	10517
☐ Modified food	ND-3.1.4	10518
☐ Purpose	ND-3.1.5	10519
(specify) _____		

Vitamin and Mineral Supplements (3.2)

Supplemental vitamins or minerals.

☐ Multivitamin/mineral		ND-3.2.1	10521
☐ Multi-trace elements		ND-3.2.2	10522
☐ Vitamin		ND-3.2.3	
☐ A (1)	10524	☐ Niacin (8)	10531
☐ C (2)	10525	☐ Folate (9)	10532
☐ D (3)	10526	☐ B6 (10)	10533
☐ E (4)	10527	☐ B12 (11)	10534
☐ K (5)	10528	☐ Pantothenic acid (12)	10535
☐ Thiamin (6)	10529	☐ Biotin (13)	10536
☐ Riboflavin (7)	10530		
☐ Mineral		ND-3.2.4	
☐ Calcium (1)	10539	☐ Fluoride (10)	10548
☐ Chloride (2)	10540	☐ Copper (11)	10549
☐ Iron (3)	10541	☐ Iodine (12)	10550
☐ Magnesium (4)	10542	☐ Selenium (13)	10551
☐ Potassium (5)	10543	☐ Manganese (14)	10552
☐ Phosphorus (6)	10544	☐ Chromium (15)	10553
☐ Sodium (7)	10545	☐ Molybdenum (16)	10554
☐ Zinc (8)	10546	☐ Boron (17)	10555
☐ Sulfate (9)	10547	☐ Cobalt (18)	10556

Bioactive Substance Management (3.3)

Addition or change in provision of bioactive substances.

☐ Plant stanol esters	ND-3.3.1	10559
☐ Plant sterol esters	ND-3.3.2	10816
☐ Soy protein	ND-3.3.3	10561
☐ Psyllium	ND-3.3.4	10817
☐ β -glucan	ND-3.3.5	10563
☐ Food additives (specify)	ND-3.3.6	10564
☐ Alcohol	ND-3.3.7	10565
☐ Caffeine	ND-3.3.8	10566
☐ Other (specify)	ND-3.3.9	10567

Feeding Assistance (4)

Accommodation or assistance in eating.

☐ Adaptive eating device	ND-4.1	10808
☐ Feeding position	ND-4.2	10570
☐ Meal set-up	ND-4.3	10571
☐ Mouth care	ND-4.4	10572
☐ Menu selection assistance	ND-4.5	10809
☐ Other	ND-4.6	10573
(specify) _____		

Feeding Environment (5)

Adjustment of the factors where food is served that impact food consumption.

☐ Lighting	ND-5.1	10575
☐ Odors	ND-5.2	10576
☐ Distractions	ND-5.3	10577
☐ Table height	ND-5.4	10578
☐ Table service	ND-5.5	10849
☐ Room temperature	ND-5.6	10580
☐ Meal service	ND-5.7	10810
☐ Meal location	ND-5.8	10811
☐ Other	ND-5.9	10581
(specify) _____		

Nutrition Intervention Terminology, cont'd

Nutrition-Related Medication Management (6)

Modification of a medication or complementary/alternative medicine to optimize patient/client nutritional or health status.

- | | | |
|---|--------|-------|
| ☐ Prescription medications | ND-6.1 | 10839 |
| ☐ OTC medication | ND-6.2 | 10584 |
| ☐ Nutrition-related complementary/alternative medicine | ND-6.3 | 10799 |

NUTRITION EDUCATION

E

Formal process to instruct or train patients/clients in a skill or to impart knowledge to help patients/clients voluntarily manage or modify food, nutrition and physical activity choices and behavior to maintain or improve health.

Nutrition Education—Content (1)

Instruction or training intended to lead to nutrition-related knowledge.

- | | | |
|---|-------|-------|
| ☐ Purpose of the nutrition education | E-1.1 | 10588 |
| ☐ Priority modifications | E-1.2 | 10589 |
| ☐ Survival information | E-1.3 | 10590 |
| ☐ Nutrition relationship to health/disease | E-1.4 | 10591 |
| ☐ Recommended modifications | E-1.5 | 10592 |
| ☐ Other or related topics | E-1.6 | 10593 |
| ☐ Other | E-1.7 | 10594 |
- (specify) _____

Nutrition Education—Application (2)

Instruction or training leading to nutrition-related result interpretation or skills.

- | | | |
|--|-------|-------|
| ☐ Result interpretation | E-2.1 | 10596 |
| ☐ Skill development | E-2.2 | 10597 |
| ☐ Other | E-2.3 | 10598 |
- (specify) _____

NUTRITION COUNSELING

C

A supportive process, characterized by a collaborative counselor–patient/client relationship to establish food, nutrition and physical activity priorities, goals, and individualized action plans that acknowledge and foster responsibility for self-care to treat an existing condition and promote health.

Theoretical Basis/Approach (1)

The theories or models used to design and implement an intervention.

- | | | |
|---|-------|-------|
| ☐ Cognitive-Behavioral Theory | C-1.1 | 10601 |
| ☐ Health Belief Model | C-1.2 | 10602 |
| ☐ Social Learning Theory | C-1.3 | 10603 |
| ☐ Transtheoretical Model/ Stages of Change | C-1.4 | 10604 |
| ☐ Other | C-1.5 | 10605 |
- (specify) _____

Strategies (2)

Selectively applied evidence-based methods or plans of action designed to achieve a particular goal.

- | | | |
|---|--------|-------|
| ☐ Motivational interviewing | C-2.1 | 10607 |
| ☐ Goal setting | C-2.2 | 10608 |
| ☐ Self-monitoring | C-2.3 | 10609 |
| ☐ Problem solving | C-2.4 | 10610 |
| ☐ Social support | C-2.5 | 10611 |
| ☐ Stress management | C-2.6 | 10612 |
| ☐ Stimulus control | C-2.7 | 10613 |
| ☐ Cognitive restructuring | C-2.8 | 10614 |
| ☐ Relapse prevention | C-2.9 | 10615 |
| ☐ Rewards/contingency management | C-2.10 | 10616 |
| ☐ Other | C-2.11 | 10617 |
- (specify) _____

COORDINATION OF NUTRITION CARE

RC

Consultation with, referral to, or coordination of nutrition care with other providers, institutions, or agencies that can assist in treating or managing nutrition-related problems.

Collaboration and Referral of Nutrition Care (1)

Facilitating services with other professionals, institutions, or agencies during nutrition care.

- | | | |
|---|--------|-------|
| ☐ Team meeting | RC-1.1 | 10620 |
| ☐ Referral to RD with different expertise | RC-1.2 | 10621 |
| ☐ Collaboration with other nutrition professionals | RC-1.3 | 10622 |
| ☐ Collaboration with other providers | RC-1.4 | 10623 |
| ☐ Referral to other providers | RC-1.5 | 10624 |
| ☐ Referral to community agencies/programs | RC-1.6 | 10625 |
- (specify) _____

Discharge and Transfer of Nutrition Care to New Setting or Provider (2)

Discharge planning and transfer of nutrition care from one level or location of care to another.

- | | | |
|---|--------|-------|
| ☐ Discharge and transfer to other providers | RC-2.1 | 10813 |
| ☐ Discharge and transfer to community agencies/programs | RC-2.2 | 10814 |
| ☐ Discharge and transfer to another nutrition professional | RC-2.3 | 10627 |

Bibliography and Resources

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Pocket Guide for the International Dietetics and Nutrition Terminology Reference Manual. 4th ed. Chicago, IL: Academy of Nutrition and Dietetics; 2013.

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Academy of Nutrition and Dietetics. *Electronic Health Record Toolkit* (download). Chicago, IL: Academy of Nutrition and Dietetics; 2012. Available at the EAL store: www.andevidencelibrary.com.

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Academy of Nutrition and Dietetics. *NCP In-depth: Sponsored Independent Learning Activity* (5 CPEUs or more). Chicago, IL: Academy of Nutrition and Dietetics; 2012. Available at the EAL store: www.andevidencelibrary.com.

Academy of Nutrition and Dietetics. *NCP Tutorial* (2 CPEUs). Available at www.eatright.org/ncp > Practitioners > The Next Level > NCP Tutorial or > Health Professionals > Resources for Health Practitioners > Nutrition Care Process > NCP Tutorial.

Journal Articles

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Mathieu J, Foust M, Ouellette P. Implementing nutrition diagnosis, step two in the Nutrition Care Process and Model: challenges and lessons learned in two health care facilities. *J Am Diet Assoc.* 2005;105:1636-1640.

Lacey K, Pritchett E. Nutrition Care Process and Model: ADA adopts road map to quality care and outcomes management. *J Am Diet Assoc.* 2003;103:1061-1072.

Web Resources

Nutrition Care Process and Model Resources: www.eatright.org/ncp > Health Professionals > Resources for Health Practitioners > Nutrition Care Process.

NCP Content Use/Licensing of the IDNT: www.eatright.org/ncp > NCP Content Use or > Health Professionals > Resources for Health Practitioners > Nutrition Care Process > NCP Content Use.

NCP Frequently Asked Questions: www.eatright.org/ncp > Frequently Asked Questions for the NCP or > Health Professionals > Resources for Health Practitioners > Nutrition Care Process > Frequently Asked Questions for the NCP.

Patient/Client Case Studies and Process Improvement Example: www.eatright.org/ncp, > Member NCP Resources > Practitioners > The Next Level > Cases, Tools, Training and Support Materials.

Evidence-Based Nutrition Practice Guidelines, available from the Academy of Nutrition and Dietetics Evidence Analysis Library, using the Store tab: www.andevidencelibrary.com.

Scope of Practice, Standards of Practice in Nutrition Care and Standards of Professional Performance, and the Standards of Practice in Nutrition Care Appendix: www.eatright.org/scope.

Feedback Form

Name: _____

Book: _____

Publication year: _____

Please provide feedback on the revisions you would suggest to the next edition of the *International Dietetics and Nutrition Terminology (IDNT) Reference Manual: Standardized Language for the Nutrition Care Process*, Fourth Edition. Please indicate whether each section should be included and identify what questions you would like answered in the next edition as well as additional materials that you would find helpful.

The following items should be included in the next edition:

Please Check

Nutrition Care Process Summary

YES	NO

Step 1: Nutrition Assessment *SNAPSHOT*

Introduction

Nutrition Assessment and Monitoring and Evaluation Terminology

Nutrition Assessment and Monitoring and Evaluation Terms/Definitions

Nutrition Assessment and Monitoring and Evaluation Reference Sheets

Step 2: Nutrition Diagnosis *SNAPSHOT*

Introduction

Terminology

Terms and Definitions

Reference Sheets

Step 3: Nutrition Intervention *SNAPSHOT*

Introduction

Terminology

Terms and Definitions

Reference Sheets

Step 4: Nutrition Monitoring and Evaluation *SNAPSHOT*

Introduction

Bibliography

Other

What questions would you like answered in the next edition?

What additional materials would be helpful in the next edition?

Please mail form or e-mail information to: Strategic Business Development and Research, Academy of Nutrition and Dietetics, Nutrition Care Process/Standardized Language Committee, 120 South Riverside Plaza, Suite 2000, Chicago, IL 60606-6995. ncpslpermissions@eatright.org

