

American Society for Parenteral and Enteral Nutrition (A.S.P.E.N.) Definition of Terms, Style, and Conventions Used in A.S.P.E.N. Board of Directors– Approved Documents

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The American Society for Parenteral and Enteral Nutrition (A.S.P.E.N.) is a professional society of physicians, nurses, dietitians, pharmacists, other allied health professionals, and researchers. A.S.P.E.N. envisions an environment in which every patient receives safe, efficacious, and high-quality patient care. A.S.P.E.N.'s mission is to improve patient care by advancing the science and practice of clinical nutrition and metabolism.

These definitions include many terms which were defined in the 1995¹, and 2005², and 2012³ definitions documents along with additional terms which were defined in the 2004 Safe Practices for Parenteral Nutrition⁴ document, the 2007 Statement on Parenteral Nutrition Standardization⁵, the 2009 Enteral Nutrition Practice Recommendations⁶, and the 2014 Parenteral Nutrition Safety Consensus Recommendations⁷. This Definition of Terms, Style and Conventions paper shall be used in conjunction with all A.S.P.E.N Board of Directors–approved documents including the following: Standards of Practice, Clinical Guidelines, Consensus Recommendations, Product Shortage Recommendations, Position Papers, and Special Reports. [See A.S.P.E.N. Documents Library at http://www.nutritioncare.org/Clinical_Practice_Library/]

A.S.P.E.N. Board of Directors–approved Documents (terms and definitions)

Standards

Standards are benchmarks representing a range of performance of competent care that should be provided to assure safe and efficacious nutrition care. Standards are documents that define the structure needed to provide competent care. They usually address professional responsibilities as they relate to patient assessment, education, care plan development, implementation, clinical monitoring, evaluation, and professional issues. A.S.P.E.N. publishes discipline-based (e.g., dietitian, nurse, pharmacist, or physician) and practice-based (e.g., adult hospitalized patients, pediatric hospitalized patients, home and alternate site care standards.) Standards are presented in the most generic terms possible. The details of specific tests, therapies, and protocols are left to the discretion of individual healthcare facilities. Each healthcare facility shall strive to provide the best nutrition support care that is possible given the resources of the organization. The standards aim to assure sound and efficient nutrition care for those in need of nutrition support therapy.

Clinical Guidelines

Clinical Guidelines are systematically developed statements to assist practitioner and patient decisions about appropriate nutrition care for specific clinical circumstances (Institute of Medicine). Clinical Guidelines define the role of specific diagnostic and treatment modalities in the diagnosis and management of patients. Clinical Guidelines contain recommendations that are based on evidence from a rigorous systematic review and evaluation of the published medical literature. These guidelines may include categories outlined by the National Guideline Clearinghouse™ such as screening, evaluation, assessment of therapeutic effectiveness, management, rehabilitation, risk assessment, technology assessment, or treatment relating either to a specific disease or condition or to a therapy. The A.S.P.E.N. Clinical Guidelines are being updated and published one topic at a time in order to ensure that we have up-to-date information for our members and the healthcare community. A.S.P.E.N. is currently using the GRADE system of guideline development and our guidelines include a paper explaining that system. (Committee on Standards for Developing Trustworthy Clinical Practice Guidelines, Institute of Medicine. *Clinical Practice Guidelines We Can Trust*. March 2011 Report Brief. *National Academy of Sciences, Washington, DC*)

Consensus Recommendations

These documents answer questions for which the level of evidence in the literature did not support any GRADE-level recommendations. These documents address questions about a nutrition practice topic using weaker supporting literature and expert opinion and consensus recommendations as well as identify areas for future research. These recommendations are not clinical guidelines as defined by A.S.P.E.N. The need to deliver practice information to clinicians, even when it is of a consensus nature from practice experts, remains an important role of A.S.P.E.N.

Position Papers

This is a document that presents the official opinion of A.S.P.E.N. on a particular topic. These papers include a comprehensive review of the literature supporting the position taken. These include the Ethics Position Paper and the Novel Nutrition Position Paper series.

Product Shortage Recommendations

These product shortage recommendations, developed by the Clinical Practice Committee Shortage Subcommittee and approved by the Board of Directors, help clinicians manage parenteral nutrition therapy during this time of product shortages. Product shortage recommendations have been published on the A.S.P.E.N. website for the last 5 years. These recommendations may also be printed in *NCP*, at the discretion of the Editor-in-Chief.

Special Reports

This is a catch-all category for documents that present A.S.P.E.N. generated clinical, research, or public policy information or findings that are important for A.S.P.E.N. constituents and do not fall into any of the other categories. A recent example is the A.S.P.E.N. Policy on Academic Misconduct, published in *NCP*. Upcoming documents, such as the Nutrition Screening and Assessment Survey and Malnutrition in Hospitalized Patients: Analysis of National Data, also fall into this category.

Definition of Terms

The following terms are used in A.S.P.E.N. documents approved by the Board of Directors:

Administer: The act of delivering substance(s) to an individual by a prescribed dosage and route.

Administration: The physical delivery of substance(s) to individuals.

Admixture: The result of combining 2 or more fluids.

Adolescent: 11 years to 21 years of age.⁸

Adverse Event: An adverse event is any undesirable experience associated with the use of a medical product in a patient. The adverse event is serious when the patient outcome is: death, life-threatening, hospitalization (initial or prolonged), disability or permanent damage, congenital anomaly / birth defect, required intervention to prevent permanent impairment or damage (devices) or other serious outcomes (important medical events).⁹

Alternate Site: Healthcare organizations including skilled nursing facilities (SNF), long-term acute care hospitals (LTACHs) or rehabilitation hospitals.¹⁰

Automated Compounding Device: A device that compounds parenteral preparations. When relating to parenteral nutrition, it transfers large-volume parenterals such as dextrose, amino acids, fat emulsion, and sterile water, as well as small-volume parenterals including electrolytes, minerals, vitamins, and non-nutrient medications to the final parenteral nutrition container. (adapted from Safe Practices for Parenteral Nutrition⁴)

Beyond-Use Date:

- (Parenteral): The date or time after which a compounded sterile preparation shall not be stored or transported. The date is determined from the date or time the preparation is compounded.¹¹ The point in time after which a compounded sterile preparation cannot be administered and is determined from the date and time the preparation is compounded.
- (Enteral): The date established by healthcare professionals recommended in the published literature or manufacturer-specific recommendations beyond which the facility-prepared product should not be used. This definition also includes closed enteral feeding systems that do not require facility preparation, but for which the manufacturer's expiration date is no longer valid once the product is spiked with an enteral administration set. (adapted from Enteral Nutrition Practice Recommendations⁶)

Birth Weight: First weight of the fetus or newborn obtained after birth.¹²

- Low Birth Weight: weight of less than 2500 g (up to and including 2499 g)
- Very Low Birth Weight: weight of less than 1500 g
- Extremely Low Birth Weight: weight of less than 1000 g

Body Weight: [see Weight]

Care Plan: A written plan based on data gathered during assessment that identifies care needs and treatment goals, describes the strategy for meeting those needs and goals, outlines the criteria for terminating any interventions, and documents progress toward meeting the plan's objectives.¹³

Central Line Associated Bloodstream Infection (CLABSI): A laboratory-confirmed bloodstream infection that develops in a patient with a central line in place for more than 2 calendar days before the onset of the infection, which is not related to infection at another site.¹⁴

Child: 12 months to 11 years of age.⁸

Closed Enteral System: A closed, ready-to-hang enteral container pre-filled with sterile, liquid formula by the manufacturer.^{6,15}

Compatibility: The ability to combine 2 or more products or components such that the physical integrity and stability of each product is not altered when combined. By contrast, incompatibility refers to the physical alteration of a product when combined with 1 or more other products as a result of concentration or temperature-dependent reactions (e.g., precipitation) that can alter activity or stability. Incompatibility refers to concentration-dependent precipitation or acid-base reactions that result in physical alteration of the product or products when combined together. (adapted from Safe Practices for Parenteral Nutrition⁴)

Computerized Provider Order Entry (CPOE): Entails the provider's (previously known as prescriber) use of computer assistance to directly enter medication orders from a computer or mobile device. The order is also documented or captured in a digital, structured, and computable format for use in improving safety and organization.¹⁶

DEHP: di (2-ethylhexyl) phthalate, a plasticizer used in various intravenous administration sets or plastic infusion bags.⁴

Diet: A prescribed allowance of food or nutrients provided via the oral route.

- **General, Regular or House Diet:** A full, well-balanced diet containing all of the essential nutrients needed for optimal growth, tissue repair, and normal functioning of the organs. Such a diet contains foods rich in proteins, carbohydrates, high-quality fats, minerals, and vitamins in proportions that meet the specific nutrient requirements of the individual (adapted from *Mosby's Medical Dictionary*, 8th ed. Regular diet.¹⁷
- **Therapeutic Diet:** A diet intervention ordered by a health care practitioner as part of the treatment for a disease or clinical condition manifesting an altered nutrition status, to eliminate, decrease, or increase certain substances in the diet (e.g., sodium, potassium).¹⁸

Dosing Weight: A patient-specific weight determined and used by the clinician to arrive at a specific nutrient or medication dose. Determination of dosing weight is dependent on institutional or professional preference; the dosing weight may be the actual, ideal, euvolemic, or adjusted body weight of the individual.

Drug-Drug Interaction: A modification of the effect of a drug when administered with another drug. The effect may be an increase or a decrease in the action of either substance, or it may be an adverse effect that is not normally associated with either drug. The particular interaction may be the result of a chemical-physical incompatibility of the two drugs or a change in the rate of absorption or the quantity absorbed in the body, the binding ability of either drug, or an alteration in the ability of receptor sites and cell membranes to bind either drug. Most adverse drug-drug interactions are either pharmacodynamic or pharmacokinetic in nature.¹⁹

Drug-Nutrient Interaction: An event that results from a physical, chemical, physiologic, or pathophysiologic relationship between a drug and nutrient status, nutrient(s), or food in general, which is clinically significant if drug response is altered or nutrition status is compromised. (adapted from An Approach to Evaluating Drug-nutrient Interactions²⁰)

Energy: Required to sustain the body's various functions by oxidation (primarily carbohydrates, fats, and amino acids), yielding the chemical energy needed to sustain metabolism, nerve transmission, respiration, circulation, and physical work. This term should be used in preference to calorie. *Calorie* should only be used in the quantification of *energy*. (adapted from Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein, and Amino Acids [Macronutrients])²¹

Enteral Access Device: Tube placed directly into the gastrointestinal tract for the delivery of nutrients and/or drugs.

Enteral Misconnection: An inadvertent connection between an enteral feeding system and a non-enteral system such as an intravascular line, peritoneal dialysis catheter, tracheostomy, medical gas tubing, etc.²²

Enteral Nutrition: Feeding provided through the gastrointestinal tract via a tube, catheter, or stoma that delivers nutrients distal to the oral cavity. Enteral nutrition to be used in preference to "enteral feeding".

Expiration Date:

- (Foods): "Generally, 'expiration' dates and 'use-by' dates are the last dates that the manufacturer *recommends* a food item be consumed to ensure peak quality and nutrient retention. However, there is no regulation requiring that manufacturers mark their product with such dates.
The one exception to these general rules is infant formula. The Food and Drug Administration (FDA) requires manufacturers mark infant formula with a 'use-by' date. Additionally, the FDA prohibits the sale of infant formula after the use-by date."²³
- (Drugs): Identifies the time during which the drug product may be expected to meet the requirements of the compendial monograph, provided it is kept under the prescribed storage conditions; limits the time during which the article may be dispensed or used. Where an expiration date is stated only in terms of the month and year, it is a representation that the intended expiration date is the last day of the stated month. (adapted from United States Pharmacopeia. General Notices and Requirements²⁴)

Formulation: A defined list of ingredients (or components) for the preparation of an enteral formula or parenteral nutrition admixture. (adapted from Pharmaceutical formulation. Saunders Comprehensive Veterinary Dictionary²⁵)

Geriatric: An adult 65 years of age or greater.²⁶

Hang Time (for enteral nutrition): The length of time an enteral preparation or product is considered safe for administration to the patient beginning with the time the preparation or product has been compounded, reconstituted, warmed, decanted, or has had the original package seal broken. (adapted from Enteral Nutrition Practice Recommendations⁶)

Indicators: Prospectively-determined measures used as normative standards within a performance improvement process.

Infant: Birth to 12 months of age.⁸

Intravenous Fat Emulsion: An intravenous oil-in-water emulsion of oils(s), egg phosphatides, and glycerin. The term should be used in preference to lipids.⁴

Macronutrient: Nutrients that are required in relatively large amounts as compared to other nutrients, and can be metabolized to produce energy (carbohydrates, proteins, fats).

Malnutrition: An acute, subacute or chronic state of nutrition, in which a combination of varying degrees of overnutrition or undernutrition with or without inflammatory activity have led to a change in body composition and diminished function. (adapted from Soeters PB, et al. A rational approach to nutritional assessment. *Clin Nutr* 2008; 27:706–716.²⁷) The 3 etiology-based nutrition diagnoses in adults in clinical practice settings are:

- Starvation-related malnutrition: chronic starvation without inflammation (e.g., anorexia nervosa)
- Chronic disease-related malnutrition; inflammation is chronic and of mild to moderate degree (e.g., organ failure, pancreatic cancer, rheumatoid arthritis or sarcopenic obesity) and
- Acute disease or injury-related malnutrition: inflammation is acute and of severe degree (e.g., major infection burns, trauma or closed head injury).²⁸

Medical Food: "...a food which is formulated to be consumed or administered enterally under the supervision of a physician and which is intended for the specific dietary management of a disease or condition for which distinctive nutritional requirements, based on recognized scientific principles, are established by medical evaluation"²⁹ as defined in section 5(b) of the Orphan Drug Act (21 U.S.C. 360ee (b) (3)).

Medical Nutrition Therapy:

- Two phases of (a) assessment of the nutrition status of the patient or client, and (b) treatment which includes diet therapy, counseling, or use of specialized nutrition supplements. The services of qualified health professionals are provided in a variety of settings, including inpatient and outpatient services (e.g., consultations provided in a home, office, school, ambulatory or institutional setting). (adapted from Identifying Patients at Risk: ADA's Definitions for Nutrition Screening and Nutrition Assessment³⁰)
- (Pertaining to reimbursement of services) Nutrition diagnostic, therapeutic, and counseling services provided by a registered dietitian or nutrition professional for the purpose of managing diabetes or a renal disease. (adapted from Medicare Program; Revisions to Payment Policies and Five-year Review of and Adjustments to other Relative Value Units under the Physician Fee Schedule Calendar for Year 2002³¹)

Micronutrient: Nutrients present and required in the body in minute quantities as compared to macronutrients (e.g., vitamins, trace elements).

Minimum Data Set: Part of the federally mandated process for clinical assessment of all residents in Medicare- or Medicaid-certified nursing homes. This process provides a comprehensive assessment of each resident's functional capabilities and helps nursing home staff identify health problems. Resident Assessment Protocols are part of this process, and provide the foundation upon which a resident's individual care plan is formulated.³²

Modular Enteral Feeding: Formulation created by combination of separate nutrient sources such as carbohydrate, fat and protein or by modification of existing formulations.

Multi-Chamber Bag: A container designed to promote extended stability of a parenteral nutrition admixture by separating some components (e.g., intravenous fat emulsion) from the rest of the components. It consists of 2 or more chambers separated by a seal or tubing that is clamped. Prior to administration, the seal or clamp is opened to allow the contents of the chambers to mix. (adapted from Safe Practices for Parenteral Nutrition⁴)

Neonate: An infant during the first 4 weeks (28 days) of life.^{33,34}

Nutrient: Protein, carbohydrate, lipid, vitamins, minerals, or water.

Nutrition: The sum of processes by which one takes in and utilizes nutrients.

- Nutrition vs. Nutritional:
 - Nutrition: Of or relating to the state of nutrition or things related to the field of nutrition. Can be used as a compound structure with terms such as nutrition support, nutrition nurse, nutrition team, nutrition program, etc.
 - Nutritional: Usually that which has nutrient value, such as nutritional cereal, nutritional meal, and so on.

Nutrition Assessment: A comprehensive approach to defining the nutrition state that uses a combination of the following: medical, nutrition, and medication histories; physical examination; anthropometric measurements; and laboratory data.

Nutritionally-at-Risk Neonates: Neonates should be considered at nutrition risk if they have any of the following:

- Low birth weight (less than 2500 g) even in the absence of gastrointestinal, pulmonary, or cardiac disorders.³⁵
- Birth weight greater than 2 standard deviations below the mean (approximately the 3rd percentile) for gestational age on fetal weight curves.

Nutritionally-at-Risk Children: Children should be considered at nutrition risk if they have any of the following:

- A weight for length or weight for height or sex less than the 10th percentile or greater than the 95th percentile.³¹
- Body mass index for age or sex less than 5th percentile or greater than the 85th percentile.³⁶
- Increased metabolic requirements.³⁰
- Impaired ability to ingest or tolerate oral feedings.³⁰

- Documented inadequate provision of or tolerance of nutrients.³²
- Inadequate weight gain or a significant decrease in usual growth percentile.³²

Nutritionally-at-Risk Adults: Adults should be considered at nutrition risk if they have any of the following:

- Involuntary loss of 10% or more of usual body weight within 6 months, or involuntary loss of greater than or 5% or more of usual body weight in 1 month.^{37,38}
- Involuntary loss or gain of 10 pounds within 6 months.³⁸
- Body mass index less than 18.5 kg/m² or greater than 25 kg/m².³⁹
- Chronic disease.³²
- Increased metabolic requirements.³²
- Altered diets or diet schedules.³²
- Inadequate nutrition intake, including not receiving food or nutrition products for greater than 7 days.⁴⁰

Nutrition Care: Interventions, monitoring, and evaluation designed to facilitate appropriate nutrient intake based upon the integration of information from the nutrition assessment.

Nutrition Care Plan: A formal statement of the nutrition goals and interventions prescribed for an individual using the data obtained from a nutrition assessment. The plan should include statements of nutrition goals and monitoring/evaluation parameters, the most appropriate route of administration of nutrition therapy, method of nutrition access, anticipated duration of therapy, and training and counseling goals and methods. (adapted from Joint Commission Comprehensive Accreditation and Certification Manual⁴¹)

Nutrition Screening: A process to identify an individual who may be malnourished or at risk for malnutrition to determine if a comprehensive nutrition assessment is indicated.

Nutrition Status: State of the body in relation to the consumption and utilization of nutrients.⁴²

Nutrition Support Process: The assessment, diagnosis, ordering, preparation, distribution, administration, and monitoring of nutrition support therapy.

Nutrition Support Team (or Service): An interdisciplinary group which may include physicians, nurses, dietitians, pharmacists, and/or other healthcare professionals with expertise in nutrition who manage the provision of nutrition support therapy. [When first used in a document, the expression “Nutrition Support Team (also referred to as Nutrition Support Service)” will be used.]

Nutrition Support Specialist: A healthcare professional with specialized training and/or experience in nutrition support therapy. The specialized training may include independent or formalized education endeavors. Specialists may be recognized with specialty certification.

Nutrition Support or Nutrition Support Therapy: Parenteral and/or enteral nutrition.

Nutrition Therapy: A component of medical treatment that includes oral, enteral, and parenteral nutrition.

Open Enteral System: A feeding system in which the clinician/patient/caregiver is required to decant formula into the enteral container. (adapted from Enteral Nutrition Practice Recommendations⁶)

Oral Nutrition: Nutrients taken by mouth.

Oral Nutrition Supplement: A manufactured liquid, reconstitutable powder, and/or solid product that contains a combination of carbohydrates, proteins, fats, fiber, vitamins, and minerals intended to supplement a portion of a patient's nutrition intake.

Osmolality: The measured osmotic concentration of a liquid expressed in osmoles or milliosmoles per kilogram of solvent (Osmol per kg or mOsmol per kg, respectively). Osmolality is a measure of the osmotic pressure exerted by a liquid across a semipermeable membrane. (adapted from USP <785> Osmolality and Osmolarity⁴³)

Osmolarity: The theoretical, calculated osmotic concentration of a liquid expressed in osmoles or mOsmol per liter of a solution; used in clinical practice because it expresses osmoles as a function of volume. Osmolarity cannot be measured, only calculated. (adapted from USP <785> Osmolality and Osmolarity⁴³)

Outcome: The measured result of the performance of a system or process.

Parenteral Nutrition: The intravenous administration of nutrients. (Parenteral nutrition to be used in preference to "parenteral feeding".)

- Central: Parenteral nutrition delivered into a large-diameter vein, usually the superior vena cava adjacent to the right atrium.
- Peripheral: Parenteral nutrition delivered into a small-diameter peripheral vein, usually of the hand or forearm.⁴

Pediatrics: A healthcare specialty that includes the growth, development, and health of the child and therefore begins in the period before birth when conception is apparent. It continues through childhood and adolescence when the growth and developmental processes are generally completed. The responsibility of pediatrics therefore may begin during pregnancy and usually terminates by 21 years of age.⁴⁴

Pharmacodynamics: The study of the biological effects resulting from the interaction between drugs and biological systems.⁴⁵

Pharmacokinetics: The study of the absorption, distribution, metabolism, and elimination of drugs in patients.⁴⁶

Preterm birth/infant: Babies born alive before 37 weeks gestation.⁴⁷ There are sub-categories of preterm birth, based on gestational age:

- Extremely preterm (less than 28 weeks)
- Very preterm (28 to less than 32 weeks)
- Moderate to late preterm (32 to less than 37 weeks)

Preparation: A food, drug, or dietary supplement (or mixtures thereof) compounded in a licensed pharmacy or other healthcare-related facility pursuant to the order of a licensed prescriber. (adapted from USP <797> Pharmaceutical Compounding—Sterile Preparations¹¹)

Product: A commercially-manufactured food, drug, or dietary supplement. Drug products are accompanied by full prescribing information, which is commonly known as the Food Drug Administration-approved manufacturer’s labeling or product package insert. (adapted from USP <797> Pharmaceutical Compounding—Sterile Preparations¹¹)

Sentinel Event: An unexpected occurrence involving death or serious physical or psychological injury, or the risk thereof. Serious injury specifically includes loss of limb or function. The phrase “or the risk thereof” includes any process variation for which a recurrence would carry a significant chance of a serious adverse outcome.⁴⁸

Stability: The extent to which a product retains, within specified limits and throughout its period of storage and use (i.e., its shelf-life), the same properties and characteristics that it possessed at the time of its preparation.⁴⁹

Standardized, Commercially-Available Parenteral Nutrition Product: A standardized parenteral nutrition formulation available from a manufacturer and requiring fewer compounding steps before administration. Examples of these products are concentrated amino acids (with or without electrolytes), concentrated dextrose and with or without IV fat emulsions in multi-chamber bags.⁵ The term “premixed” should be avoided as these products require activation and mixing prior to administration.

Standardized Parenteral Nutrition Formulation: An organization-specific parenteral nutrition formulation intended to meet the daily maintenance requirements of a specific patient population (e.g., age-specific, stress-specific, or disease state–specific) and differentiated by route of administration (central vs. peripheral vein).⁵

Total Nutrient Admixture: A parenteral nutrition formulation containing intravenous fat emulsion as well as the other components of parenteral nutrition (dextrose, amino acids, vitamins, minerals, water, and other additives) in a single container.⁴

Transitional Nutrition: Progression from one mode of nutrition to another.

Use-By Date: (see Expiration Date; Beyond-use Date)

Vascular Access Device: Catheter placed directly into the arterial or venous system for infusion therapy and/or phlebotomy. (adapted from Safe Practices for Parenteral Nutrition⁴)

Weight / Body Weight: Actual, measured body weight of an individual. The use of other body weights must be defined by the author(s). (see Dosing Weight)

Style, Symbols, and Abbreviations

The following style, symbols, and abbreviations lists are used in all A.S.P.E.N. documents and publications to (1) promote consistency among the A.S.P.E.N. Standards and Clinical Guidelines documents and publications; and (2) promote consistency with national recommendations regarding patient safety including those produced by The Joint Commission and the Institute for Safe Medication Practices (ISMP) (Tables 1 through 6).

Style Convention

1. The units of the International System of Units (SI) [e.g., metric system] and those units recognized for use with the SI are preferred to express the values of quantities. Equivalent values in other units may be used only when deemed necessary for the intended audience, e.g., kcal instead of joule. (adapted from International System of Units (SI) rules and style conventions⁵⁰)
2. Place a space between the numerical value and unit symbols (e.g., 25 mg, never 25mg).^{50,51}
3. Do not use trailing zeros for integers (e.g., 5 mg, never 5.0 mg).^{51,52} Exception: A “trailing zero” may be used only where required to demonstrate the level of precision of the value being reported, such as for laboratory results, imaging studies that report size of lesions, or catheter/tube sizes.⁵²
4. Always use leading zeros for numerical values less than 1 (e.g., 0.3, never .3).^{51,52} Exception: certain statistical values such as α levels or P values, should be reported without the use of 0 before the decimal marker.⁵²
5. Unit symbols are unaltered in the plural (e.g., 175 cm, never 175 cms).⁵⁰
6. Unit symbols are not followed by a period unless at the end of a sentence (e.g., 175 cm, never 175 cm.).^{50,51}
7. Information is not mixed with unit symbols or names (e.g., “the water content is 20 mL/kg” never “20 mL H₂O/kg” or “20 mL of water/kg”).⁵⁰
8. Express drug products by generic name (use lowercase letters) as the primary drug nomenclature, ensuring that each matches Food and Drug Administration (FDA) or United States Pharmacopeia (USP)-approved nomenclature. Do not abbreviate drug names.⁵¹ Do not use slang or stem names (e.g., “intravenous fat emulsion” is preferred to “lipids”).
9. Do not use proprietary, commercial trade names unless both of the following criteria are met: 1) Use of the trade name is essential for the reader to distinguish among similar products for clinical or research purposes, and 2) Specific evidence is provided to document or contrast the use of one product vs. another similar product. If a trade name is used, begin the trade name with a capital letter and include the appropriate legal symbol (e.g., ©, ®, or ™).
10. Use only standard abbreviations; use of nonstandard abbreviations can be confusing to readers. Avoid abbreviations in the title of the manuscript. The spelled-out abbreviation followed by the abbreviation in parenthesis should be used on first mention unless the abbreviation is a standard unit of measurement.⁵³
11. Express vitamins by generic drug name when referring to administration for therapeutic intent. Familiar names (letters and numbers) may be used when referring to substances found in food and *in vivo*.⁵⁴

Table 1: Acceptable symbols (units of measure)^a

Symbol	Name	Symbol	Name
kcal	Kilocalorie	Eq	Gram-equivalent weight
g	Gram	mEq	Milliequivalent
kg	Kilogram	mol	Gram-molecular weight
mg	Milligram	mmol	Millimole
mcg ^b	Microgram ^b	Osm or Osmol	Osmole
ng	Nanogram	mOsm or mOsmol	Milliosmole
pg	Picogram	s	Second
L	Liter	min	Minute
dL	Deciliter	h	Hour
mL	Milliliter	d	Day
m	Meter	mo	Month
dm	Decimeter	wk	Week ⁵⁵
cm	Centimeter	y	Year
mm	Millimeter	°C	Degree Celsius

^a All symbols from National Institute of Standards and Technology⁵⁰ or USP⁵⁸ except when specified.

^b The µg symbol is acceptable in the scientific literature; however, ISMP⁵¹ and The Joint Commission⁵² recommend that mcg be used to avoid confusion with mg.

Table 2: Acceptable symbol prefixes⁵⁸

Symbol	Name and factor	Symbol	Name and factor
G	giga; 10 ⁹	d	deci; 10 ⁻¹
M	mega; 10 ⁶	c	centi; 10 ⁻²
k	kilo; 10 ³	m	milli; 10 ⁻³
h	hecto; 10 ²	µ (mc ^a)	micro; 10 ⁻⁶
da	deka; 10 ¹	n	nano; 10 ⁻⁹

^aThe mu (µ) symbol is acceptable in the scientific literature; however, ISMP⁵¹ and The Joint Commission⁵² recommend that µ not be used as µg (e.g., mcg should be used to avoid confusion with mg. See Table 4).

Table 3: Acceptable statistical symbols and abbreviations⁵⁶

Symbol	Name	Symbol	Name
Σ	Sum	n	Size of a subsample
\wedge	Hat, used above a parameter to denote an estimate	N	Total sample size
ANOVA	Analysis of variance	OR	Odds ratio
α	Alpha, probability of Type I error	<i>P</i>	Statistical probability
β	Beta, probability of Type II error; or population regression coefficient	X^2	Chi-square test or statistic
CI	Confidence interval	<i>r</i>	Bivariate correlation coefficient
CV	Coefficient of variation	<i>R</i>	Multivariate correlation coefficient
Δ	Delta, change	RR	Relative risk
δ	Delta, true sampling error	ρ	Rho, population coefficient
ϵ	Epsilon, true experimental error	SD	Standard deviation of a sample
H_0	Null hypothesis	SE	Standard error
H_1	Alternate hypothesis; specify whether 1 or 2 sided	SEM	Standard error of the mean
HR	Hazards ration	<i>t</i>	Student t; specify α level
κ	Kappa statistic	<i>U</i>	Mann-Whitney <i>U</i> (Wilcoxon) statistic
μ	Population mean	<i>z</i>	<i>z</i> score

Table 4: Non-acceptable symbols^{51,52}

Symbol	Intended Meaning	Misinterpretation	Correction
cc	Cubic centimeter	Misread as “U” or “4” Note: cm ³ is SI nomenclature	mL for fluid volumes or cm ³ for solid volumes
U or u	Unit	Mistaken as the number 0 or 4	Spell out “unit”
μ g	Microgram	Confusion with mg	mcg
IU	International Unit	Confusion with IV	Spell out International Unit (or Unit as appropriate) [note: “IU” may be used in printed tables if horizontal space is an issue. “IU” should never be used in patient-care area clinical documents]
SC, SQ, or sub q	Subcutaneous	SC mistaken as SL (sublingual); SQ mistaken as “5 every;” the “q” in “sub q” has been mistaken as “every”	Use “subcut” or “subcutaneously”

SS	Sliding scale or ½ (apothecary)	Mistaken as the number “55”	Spell out “sliding scale,” use “one-half” or “½”
SSI	Sliding scale insuliin	Mistaken as Strong Solution of Iodine (Lugol’s)	Spell out “sliding scale (insulin)”
SSRI	Sliding scale regular insulin	Mistaken as selective-serotonin reuptake inhibitor	Spell out “sliding scale (insulin)”
>	Greater than	Mistaken as or confused with <	Spell out greater than
<	Less than	Mistaken as or confused with >	Spell out less than

Table 5: Acceptable abbreviations

Note: The full term which an abbreviation represents shall precede its first use in the text. This table only includes abbreviations common to nutrition support therapies. This table is not all-inclusive of medical abbreviations. For other sources of medical abbreviations see: “Medical Abbreviations and Eponyms”, “Stedman’s Medical Abbreviations, Acronyms and Symbols”, and/or online sources such as <http://www.medilexicon.com/>

Term	Intended Meaning	Term	Intended Meaning
A.S.P.E.N.	American Society for Parenteral and Enteral Nutrition	IVFE	Intravenous fat emulsion
ACD	Automated compounding device	LBM	Lean body mass
AGA	Appropriate for gestational age	LBW	Low birth weight
AI	Adequate intake	LGA	Large for gestational age
BCNSP	Board certified nutrition support pharmacist	ND	Nasoduodenal
BEE	Basal energy expenditure	NG	Nasogastric
BMI	Body mass index	NJ	Nasojejunal
BMR	Basal metabolic rate	NRI	Nutritional risk index
BUD	Beyond use date	ONS	Oral nutrition supplement
CLABSI	Central line-associated bloodstream infection	PCM	Protein-calorie malnutrition
CNSC	Certified nutrition support clinician	PEG	Percutaneous endoscopic gastrostomy
CPN	Central parenteral nutrition	ONS	Oral nutrition supplement
CQI	Continuous quality improvement	ORS	Oral rehydration
CPOE	Computerized prescriber order entry	PEGJ	Percutaneous endoscopic gastrojejunostomy
CRBSI	Catheter-related bloodstream infection	PEJ	Percutaneous endoscopic jejunostomy
DRI	Dietary reference intake	PICC	Peripherally inserted central catheter

EAR	Estimated average requirement	PINI	Prognostic inflammatory and nutritional index
EER	Estimated energy requirement	PN	Parenteral nutrition
EJ	External jugular	PNI	Prognostic nutrition index
ELBW	Extremely low birth weight	PPN	Peripheral parenteral nutrition
EN	Enteral nutrition	RDA	Recommended dietary allowance
FDA	Food and Drug Administration	REE	Resting energy expenditure
FFA	Free fatty acids	RMR	Resting metabolic rate
FFM	Fat free mass	RNI	Recommended nutrient intake
FTT	Failure to thrive	RQ	Respiratory quotient
GI	Gastrointestinal	SDA	Specific dynamic action
GRADE	Grading of Recommendations Assessment, Development and Evaluation	SGA	Small for gestational age, or Subjective global assessment
HM	Human milk	SVC	Superior vena cava
HEN	Home enteral nutrition	TEE	Total energy expenditure
HPN	Home parenteral nutrition	TNA	Total nutrient admixture
IJ	Internal jugular	UL	Tolerable upper intake level
IBW	Ideal body weight	USP	United States Pharmacopeia
IDPN	Intradialytic parenteral nutrition	VLBW	Very low birth weight
IUGR	Intrauterine growth restriction		

Table 6: Unacceptable terms and abbreviations

Abbreviations and terms in this table shall not be used in A.S.P.E.N. Board of Directors-approved documents.

Symbol/ Term	Intended Meaning	Misinterpretation	Correction
ASPEN	American Society for Parenteral and Enteral Nutrition	Aspen, a city in Colorado; Aspen publishers	A.S.P.E.N.
HA, HAL	Hyperalimentation	Antiquated term for parenteral nutrition; unclear as to “hyper” amount of nutrients or hypertonic solutions	PN, CPN, or PPN
HAS	Hyperalimentation solution	[See HA, HAL]	PN, CPN, or PPN
MVI	Multivitamin	M.V.I. is a registered trademark for “Multi-Vitamin Infusion”	Spell out use
NCP	Nutrition Care Plan vs. Academy of Nutrition and Dietetics “Nutrition Care Process” vs. <i>Nutrition in Clinical</i>	Unclear as to which term	Spell out use

	<i>Practice</i> (A.S.P.E.N. journal)		
NST	Nutrition Support Team vs. Nutrition Support Therapy	Unclear as to which term	Spell out use
PEN	Parenteral/enteral nutrition	Combination term unclear when meaning one or the other therapy	PN or EN
Premixed	Industry/manufacturer-prepared parenteral nutrition products with fixed ratios of amino acids, dextrose, with/without fat emulsions and with/without electrolytes	Confusion that product is ready to administer to patient	Standardized, commercially-available parenteral nutrition product
SNS	Specialized Nutrition Support	This term is no longer to be used in A.S.P.E.N. documents	Nutrition Support or Nutrition Support Therapy
TJC	The Joint Commission	"Officially, The Joint Commission does not use this abbreviation. There have been some exceptions, e.g., the social media realm where character space limitations exist." ^a	Spell out full title
TPN	Total parenteral nutrition	Unclear as to total nutrients in formulation or totally by parenteral route	PN, CPN, or PPN

^a Frank Barancyk, October 6, 2009, *personal communication*, Internet/Intranet Communications Manager, Communications, The Joint Commission.

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