

# American Society for Parenteral and Enteral Nutrition (ASPEN) Definition of Terms, Style, and Conventions Used in ASPEN Board of Directors–Approved Documents

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ASPEN's mission is to improve patient care by advancing the science and practice of clinical nutrition and metabolism. Founded in 1976, ASPEN is an interdisciplinary organization whose members are involved in the provision of clinical nutrition therapies, including parenteral and enteral nutrition. With more than 6,500 members from around the world, ASPEN is a community of dietitians, nurses, pharmacists, physicians, scientists, students, and other health professionals from every facet of nutrition support clinical practice, research, and education.

These definitions include many terms which were defined in the 1995,<sup>1</sup> and 2005,<sup>2</sup> 2012<sup>3</sup> and 2015<sup>4</sup> definitions documents along with additional terms which were defined in the 2004 Safe Practices for Parenteral Nutrition<sup>5</sup> document, the 2007 Statement on Parenteral Nutrition Standardization,<sup>6</sup> the 2017 Enteral Nutrition Practice Recommendations,<sup>7</sup> and the 2014 Parenteral Nutrition Safety Consensus Recommendations.<sup>8</sup> This Definition of Terms, Style and Conventions paper shall be used in conjunction with all ASPEN Board of Directors–approved documents including the following: Standards of Practice, Clinical Guidelines, Consensus Recommendations, Product Shortage Recommendations, Position Papers, and Special Reports. [See ASPEN Documents Library at [http://www.nutritioncare.org/Clinical\\_Practice\\_Library/](http://www.nutritioncare.org/Clinical_Practice_Library/)]

**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.<sup>9</sup>

**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, a congenital anomaly / birth defect, a required intervention to prevent permanent impairment or damage (devices) or other serious outcomes (important medical events).<sup>10</sup>

**Alternate Site:** Healthcare organizations including skilled nursing facilities (SNF), long-term care hospitals (LTACHs) or rehabilitation hospitals.<sup>11</sup>

**Automated Compounding Device:** A device that compounds parenteral preparations. When relating to parenteral nutrition, it transfers large-volume parenterals such as dextrose, amino acids, lipid emulsion, and sterile water, as well as small-volume parenterals including electrolytes, minerals, vitamins, and non-nutrient medications to the final parenteral nutrition container.<sup>5</sup>

**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.<sup>12</sup> 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.<sup>7</sup>

**Birth Weight:** First weight of the fetus or newborn obtained after birth.<sup>13</sup>

- 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.<sup>14</sup>

**Central Line Associated Bloodstream Infection:** 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<sup>15</sup>

**Child:** 12 months to 11 years of age.<sup>9</sup>

**Closed Enteral System:** A closed, ready-to-hang enteral container pre-filled with sterile, liquid formula by the manufacturer and considered ready-to-administer.<sup>7,16</sup> (See Open Enteral System)

**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.<sup>5</sup> (See Incompatibility)

**Computerized Provider Order Entry (CPOE):** Providers (previously known as prescribers) using computer assistance to directly enter medical 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.<sup>17</sup>

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

- **General, Regular or House Diet:** A full, well-balanced diet containing the essential nutrients needed for optimal growth, tissue repair, and normal functioning of the organs. Such a diet contains foods that appropriately balance proteins, carbohydrates, high-quality fats, minerals, and vitamins in proportions that meet the specific nutrient requirements of the individual.<sup>18</sup>
- **Therapeutic Diet:** A diet intervention ordered by a healthcare 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).<sup>19</sup>

**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.<sup>20</sup>

**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.<sup>21</sup>

**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*.<sup>22</sup>

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

**Enteral Formula:** Liquid nutrition to be administered via an enteral access device. It can include ready-to-feed liquid, powdered, or liquid products to be mixed or blenderized, as well as human breast milk.

**Enteral Misconnection:** An inadvertent and erroneous connection between an enteral feeding system and a non-enteral system such as a vascular access device, peritoneal dialysis catheter, tracheostomy, medical gas tubing, etc.<sup>23</sup>

**Enteral Nutrition:** System of providing nutrition directly into the gastrointestinal tract via a tube, catheter, or stoma that bypasses the oral cavity. Enteral nutrition to be used in preference to "enteral feeding."

**Enteral Nutrition Use Process:** The system within which enteral nutrition (EN) is used. This involves a number of major steps: the initial patient assessment, the recommendations for an EN regimen, the selection of the enteral access device, the EN prescription, the review of the EN order, the product selection or preparation, the product labeling and dispensing, the administration of the EN to the patient, and the patient monitoring and reassessment, with documentation at each step as required.<sup>7</sup>

## 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 commercially-manufactured infant formula. The U.S. Food and Drug Administration (FDA) requires manufacturers label infant formula with a ‘use-by’ date. Additionally, the FDA prohibits the sale of infant formula after the use-by date.<sup>24</sup>
- (Drugs): The date after which a drug stored in the unopened manufacturer’s storage container away from harmful and variable factors like heat and humidity should not be used.<sup>25</sup>

**Formulation:** a defined list of ingredients (or components) for the preparation of an enteral formula or parenteral nutrition admixture. (adapted from Pharmaceutical formulation.<sup>26</sup>

**Geriatric:** An age category describing an adult 65 years of age or greater.<sup>27</sup>

**Hang Time (for enteral nutrition):** The duration 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, poured from one container to another, or has had the original package seal broken.<sup>7</sup>

**Incompatibility:** The physical alteration of a product when combined with 1 or more other products as a result of concentration or temperature-dependent reactions (eg, 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.<sup>5</sup> (See Compatibility)

**Indicators:** Predetermined measures used as normative standards within a performance improvement process.

**Infant:** Birth to 12 months of age.<sup>9</sup>

**Intestinal failure:** The reduction of gut function below the minimum necessary for the absorption of macronutrients and/or water and electrolytes, such that intravenous supplementation is required to maintain health and/or growth.<sup>28</sup>

**Intestinal Insufficiency (or deficiency):** The reduction of gut absorptive function that does not require intravenous supplementation but may require oral supplementation, enteral nutrition, or vitamin and trace element supplementation to maintain health and/or growth.<sup>28</sup>

**Lipid Injectable Emulsion:** An intravenous oil-in-water emulsion of oil(s), egg phosphatides, and glycerin. May also be referred to as intravenous lipid emulsion. The term should be used in preference to fats and intravenous fat emulsion. Lipid injectable emulsions can be further defined by the source of the lipid (eg, soybean oil, fish oil, olive oil).

**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:**

Adult - 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.<sup>29</sup>

Specifically:

- Starvation-related malnutrition: chronic starvation without inflammation (eg, anorexia nervosa)
- Chronic disease-related malnutrition; inflammation is chronic and of mild to moderate degree (eg, organ failure, pancreatic cancer, rheumatoid arthritis or sarcopenic obesity) and
- Acute disease or injury-related malnutrition: inflammation is acute and of severe degree (eg, major infection burns, trauma or closed head injury).<sup>30</sup>

Pediatric - malnutrition (undernutrition) is defined as an imbalance between nutrient requirement and intake, resulting in cumulative deficits of energy, protein, or micronutrients that may negatively affect growth, development, and other relevant outcomes. Based on its etiology, malnutrition is either (1) illness related (1 or more diseases/injuries directly result in nutrient imbalance) or (2) caused by environmental/behavioral factors associated with decreased nutrient intake/delivery (or both).<sup>31</sup>

**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."<sup>32</sup>

**Medical Nutrition Therapy:** An evidence-based application of the Nutrition Care Process that may include one or more of the following: nutrition assessment/re-assessment, nutrition diagnosis, nutrition intervention and nutrition monitoring and evaluation that typically results in the prevention, delay or management of diseases and/or conditions.<sup>33</sup> Pertaining to billing, it is nutrition, diagnostic, therapeutic, and counseling services provided by a registered dietitian or nutrition professional for the purpose of managing diabetes or a renal disease.<sup>34</sup>

**Micronutrient:** Nutrients present and required in the body in minute quantities as compared to macronutrients (eg, vitamins, trace elements, minerals) and are often required in metabolic pathways. Not produced in the body and must be acquired exogenously.<sup>35</sup>

**Minimum Data Set:** Part of the federally mandated process for clinical assessment of all residents in Medicare- or Medicaid-certified nursing homes or skilled nursing units. This process provides a comprehensive assessment of each resident's functional capabilities and helps nursing home and skilled nursing unit staff identify health problems. Care Area Assessments (CAAs) are part of this process and provide the foundation upon which a resident's individual care plan is formulated.<sup>36,37</sup>

**Modular Product (or Components):** Single macronutrients used to enhance the carbohydrate, protein, fat or fiber content of an enteral nutrition regimen.<sup>7</sup>

**Multi-Chamber Bag:** A container designed to promote extended stability of a parenteral nutrition admixture by separating some components (eg, lipid injectable emulsion) from the other components. The container consists of two 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.<sup>5</sup>

**Neonate:** An infant during the first 4 weeks (28 days) of life.<sup>38</sup>

**Nutrient:** Protein, carbohydrate, fat, vitamins, minerals, or water.

**Nutrition:** The sum of processes by which one takes in and uses nutrients for the body's growth, repair and maintenance.<sup>39</sup> Of or relating to the state of nutrition or items 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. (See Nutritional)

**Nutritional:** Usually that which has nutrient value, such as nutritional cereal, nutritional meal, etc. (See Nutrition)

**Nutrition Assessment:** A comprehensive approach to identifying the nutrition-related problems that uses a combination of the following: medical, nutrition, medication and client histories; nutrition-focused physical examination; anthropometric measurements; and biomedical data/medical diagnostic tests and procedures.<sup>40</sup>

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

High Risk<sup>41</sup>

- Preterm less than 28 weeks at birth
- Extremely low birth weight less than 1000 g
- Infant establishing feeds after episode of necrotizing enterocolitis or gastrointestinal perforation
- Infants with severe congenital gastrointestinal malformations (eg, gastroschisis)

Moderate Risk<sup>41</sup>

- Preterm 28th–31st weeks, otherwise well
  - Intrauterine growth restriction (weight less than 9<sup>th</sup> percentile)
  - Very low birth weight 1000–1500 g
  - Illness or congenital anomaly that may compromise feeding
- 
- Low birth weight (less than 2500 g) even in the absence of gastrointestinal, pulmonary, or cardiac disorders.<sup>42</sup>
  - Birth weight greater than 2 standard deviations below the mean (approximately the 3<sup>rd</sup> percentile) for gestational age on fetal weight curves.<sup>42</sup>
  - Acute weight loss of 10% or more.

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

- Weight for length, weight for height, or sex less than 10<sup>th</sup> percentile (–1.28 z-score) or greater than the 95<sup>th</sup> percentile.<sup>43</sup>
- BMI for age or sex less than 5<sup>th</sup> percentile (–1.64 z-score) or greater than the 85<sup>th</sup> percentile.<sup>42</sup>
- Increased metabolic requirements.
- Impaired ability to ingest or tolerate oral feeding.
- Documented inadequate provision of or tolerance to nutrients.
- Inadequate weight gain or a significant decrease in usual growth percentile.

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

- Involuntary weight loss of 10% of usual body weight within 6 months or involuntary loss of greater than 5% or more of usual body weight within 1 month.<sup>44,45</sup>
- Involuntary loss of 10 pounds within 6 months.<sup>45</sup>
- Body mass index (BMI) less than 18.5 kg/m<sup>2</sup>.<sup>46</sup>
- Increased metabolic requirements.<sup>45</sup>
- Altered diets or diet schedules.<sup>45</sup>
- Inadequate nutrition intake, including not receiving food or nutrition products for more than 7 days.<sup>47</sup>

**Nutritional Insufficiency:** The inability to meet nutrition standards or receive proper nutrition due to a lack of adequate products or delivery systems resulting in a nutrition/nutrient deficiency.

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

**Nutrition Care Plan:** A formal statement of the nutrition goals and interventions prescribed for an individual using the data obtained from a nutrition assessment and identified nutrition diagnosis. The plan should include statements of nutrition goals, with monitoring evaluating 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.<sup>48</sup>

**Nutrition Care Process:** The assessment, diagnosis, ordering, preparation, distribution, administration, monitoring, evaluation and documentation of nutrition support therapy.

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

**Nutrition Status:** State of the body in relation to the consumption and utilization of nutrients.<sup>49</sup>

**Nutrition Support Team (or Service):** An interdisciplinary group which may include physicians, nurses, dietitians, pharmacists, nurse practitioners, physician assistants and/or other healthcare professionals with expertise in nutrition who manage the provision of nutrition support therapy.

**Nutrition Support Specialist:** A healthcare professional (ie, physician, nurse, dietitian, pharmacist nurse practitioners, physician assistants) with specialized training and/or experience in nutrition support therapies. The specialized training may include independent or formalized education endeavors. Specialists may be recognized with specialty certification.

**Nutrition Support or Nutrition Support Therapy:** Providing parenteral and/or enteral nutrition to treat or prevent malnutrition.

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

**Open Enteral System:** A feeding system in which the clinician/patient/caregiver is required to decant formula into the enteral container or bag.<sup>7</sup> (See Closed Enteral System)

**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/or minerals intended to supplement a portion of a patient's nutrition intake.

**Osmolality:** The measured concentration of a liquid expressed in osmoles or milliosmoles of solute(s) 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.<sup>50</sup>

**Osmolarity:** The theoretical, calculated concentration of a liquid expressed in number of osmoles or mOsmol of solute(s) per liter of a solution; used in clinical practice because it expresses osmoles as a function of volume. Osmolarity cannot be measured, only calculated.<sup>50</sup>

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

**Parenteral Nutrition:** The intravenous administration of nutrients. (Parenteral nutrition is 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.

**Parenteral Nutrition Use Process:** The system within which parenteral nutrition (PN) is used. This involves a number of major steps: the initial patient assessment, the recommendations for a PN regimen, the selection of the vascular access device, prescribing PN, the review and verification of the PN order, compounding the PN admixture or preparing the PN product, labeling and dispensing the PN admixture, the administration of PN to the patient, and the patient monitoring and reassessment, with documentation at each step as required.

**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.<sup>51</sup>

**Pharmacodynamics:** The study of the biological effects resulting from the interaction between drugs and biological systems.<sup>52</sup>

**Pharmacokinetics:** The study of the absorption, distribution, metabolism, and elimination of drugs in patients.<sup>53</sup>

**Preterm birth/infant:** Babies born alive before 37 weeks gestation.<sup>54</sup> 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. <sup>12,55</sup>

**Product:** A commercially-manufactured food, drug, or dietary supplement<sup>12,55</sup>

**Sentinel Event:** A patient safety event (not primarily related to the natural course of the patient's illness or underlying condition) that reaches a patient and results in death, permanent harm, or severe temporary harm. Severe temporary harm is critical, potentially life-threatening harm lasting for a limited time with no permanent residual but requires transfer to a higher level of care/monitoring for a prolonged period of time, transfer to a higher level of care for a life-threatening condition, or additional major surgery, procedure, or treatment to resolve the condition.<sup>56</sup>

**Stability:** The extent to which a product retains, within specified limits and throughout its period of storage and use.<sup>55</sup>

**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 intravenous lipid emulsions in multi-chamber bags.<sup>5</sup> 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 (eg, age-specific, stress-specific, or disease state-specific) and differentiated by route of administration (central vs. peripheral vein).<sup>6</sup>

**Total Nutrient Admixture:** A parenteral nutrition formulation, also referred to as 3-in-1, containing intravenous lipid emulsion as well as the other components of parenteral nutrition (dextrose, amino acids, vitamins, minerals, water, and other additives) in a single container.

**Transitional Feeding:** Progression from one mode of feeding to another while continuously administering estimated nutrient requirements.<sup>7</sup>

**Use-By Date:** (See Expiration Date, Beyond-Use Date)

**Vascular Access Device:** Catheter placed directly into the arterial or venous system for diagnostic or therapeutic purposes including infusion therapy and/or phlebotomy.<sup>4</sup>

**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 ASPEN documents and publications to (1) promote consistency among the ASPEN Board-Approved 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) (eg, 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, eg, kcal instead of joule. (adapted from International System of Units (SI) rules and style conventions.<sup>57</sup>)
2. Place a space between the numerical value and unit symbols (eg, 25 mg, never 25mg).<sup>58,59</sup>
3. Do not use trailing zeros for integers (eg, 5 mg, never 5.0 mg).<sup>58,59</sup> 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.<sup>58</sup>
4. Always use leading zeros for numerical values less than 1 (eg, 0.3, never .3).<sup>58,59</sup> Exception: certain statistical values such as  $\alpha$  levels or  $P$  values, should be reported without the use of 0 before the decimal marker.<sup>60</sup>
5. Unit symbols are unaltered in the plural (eg, 175 cm, never 175 cms).<sup>57</sup>
6. Unit symbols are not followed by a period unless at the end of a sentence (eg, 175 cm, never 175 cm.).<sup>58,59</sup>
7. Information is not mixed with unit symbols or names (eg, “the water content is 20 mL/kg” never “20 mL H<sub>2</sub>O/kg” or “20 mL of water/kg”).<sup>57</sup>
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.<sup>58</sup> Do not use slang or stem names (eg, “lipid injectable emulsion or intravenous lipid emulsion” is preferred to “fats”).
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 (eg, ©, ®, 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.<sup>60</sup>
11. Express vitamins by generic drug name when referring to administration for therapeutic intent. Familiar names (letters and numbers, eg, B<sub>12</sub>, B<sub>6</sub>) may be used when referring to substances found in food and *in vivo*.<sup>61</sup>
12. Terms are spelled out the first time the term is used, and the acronym/abbreviation is provided in parentheses. The acronym/abbreviation is used thereafter. The use of the same acronym/abbreviation for different terms in the same document should be avoided.

**Table 1: Acceptable symbols (units of measure)<sup>a</sup>**

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 <sup>b</sup>	Microgram <sup>b</sup>	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
cm	Centimeter	y	Year
mm	Millimeter	°C	Degree Celsius

<sup>a</sup> All symbols from National Institute of Standards and Technology<sup>57</sup> or USP<sup>62</sup> except when specified.

<sup>b</sup> The µg symbol is acceptable in the scientific literature; however, ISMP<sup>58</sup> and The Joint Commission<sup>59</sup> recommend that mcg be used to avoid confusion with mg.

**Table 2: Acceptable symbol prefixes<sup>58</sup>**

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

<sup>a</sup>The mu (µ) symbol is acceptable in the scientific literature; however, ISMP and The Joint Commission recommend that µ not be used as µg (eg, mcg should be used to avoid confusion with mg. See Table 4).<sup>58,59</sup>

**Table 3: Acceptable statistical symbols and abbreviations<sup>63</sup>**

Symbol	Name	Symbol	Name
$\Sigma$	Sum	N	Study sample size
$\hat{\phantom{x}}$	Hat, used above a parameter to denote an estimate	n	Size of a subsample
ANOVA	Analysis of variance	OR	Odds ratio
$\alpha$	Alpha, probability of Type I error	$P$	Statistical probability
$\beta$	Beta, probability of Type II error; or population regression coefficient	$\chi^2$	Chi-square test or statistic
CI	Confidence interval	$r$	Bivariate correlation coefficient
CV	Coefficient of variation	$R$	Multivariate correlation coefficient
$\Delta$	Delta, change	RR	Relative risk
$\delta$	Delta, true sampling error	$\rho$	Rho, population coefficient
$\epsilon$	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	$t$	Student t; specify $\alpha$ level
$\kappa$	Kappa statistic	$U$	Mann-Whitney $U$ (Wilcoxon) statistic
$\mu$	Population mean	$z$	$z$ score

**Table 4: Non-acceptable symbols<sup>58,59</sup>**

Symbol	Intended Meaning	Misinterpretation	Correction
cc	Cubic centimeter	Misread as “U” or “4”  Note: cm <sup>3</sup> is SI nomenclature	mL for fluid volumes or cm <sup>3</sup> for solid volumes
U or u	Unit	Mistaken as the number 0 or 4	Spell out “unit”
µg	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 insulin	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”, &/or online sources such as <http://www.medilexicon.com/>

<b>Term</b>	<b>Intended Meaning</b>	<b>Term</b>	<b>Intended Meaning</b>
ASPEN	American Society for Parenteral and Enteral Nutrition	IDPN	Intradialytic parenteral nutrition
ACD	Automated compounding device	IJ	Internal jugular
AGA	Appropriate for gestational age	ISMP	Institute for Safe Medication Practices
ALA	Alpha-linolenic acid	IUGR	Intrauterine growth retardation
APACHE II	Acute physiology and chronic health evaluation	ILE	Lipid injectable emulsion
ARA	Arachidonic acid	LA	Linoleic acid
AI	Adequate intake	LBM	Lean body mass
BCAA	Branched chain amino acids	LBW	Low birth weight
BCNSP	Board certified nutrition support pharmacist	LGA	Large for gestational age
BEE	Basal energy expenditure	ND	Nasoduodenal
BMI	Body mass index	NG	Nasogastric
BMR	Basal metabolic rate	NJ	Nasojejunal
BUD	Beyond-use date	NRI	Nutritional risk index
CLABSI	Central line-associated bloodstream infection	NRS	Nutrition risk score
CNSC	Certified nutrition support clinician	NUTRIC	Nutrition risk in the critically ill
CPN	Central parenteral nutrition	ONS	Oral nutrition supplement
CQI	Continuous quality improvement	OO-ILE	Olive oil-based lipid injectable emulsion
CPOE	Computerized prescriber order entry	ORS	Oral rehydration solution
CRBSI	Catheter-related bloodstream infection	PCM	Protein-calorie malnutrition
DEHP	di (2-ethylhexyl) phthalate	PEG	Percutaneous endoscopic gastrostomy
DHA	Docosahexaenoic acid	PEGJ	Percutaneous endoscopic gastrojejunostomy
DRI	Dietary reference intake	PEJ	Percutaneous endoscopic jejunostomy
EAR	Estimated average requirement	PICC	Peripherally inserted central catheter
EAD	Enteral access device	PINI	Prognostic inflammatory and nutritional index
EER	Estimated energy requirement	PN	Parenteral nutrition
EFA	Essential fatty acid	PNI	Prognostic nutrition index
EFAD	Essential fatty acid deficiency	PPN	Peripheral parenteral nutrition

EHR	Electronic healthcare record	RDA	Recommended dietary allowance
EJ	External jugular	REE	Resting energy expenditure
ELBW	Extremely low birth weight	RMR	Resting metabolic rate
EN	Enteral nutrition	RNI	Recommended nutrient intake
EPA	Eicosapentaenoic acid	RQ	Respiratory quotient
FDA	Food and Drug Administration	SDA	Specific dynamic action
FFA	Free fatty acids	SGA	Small for gestational age, or Subjective global assessment
FFM	Fat free mass	SMOF- ILE	Soybean oil, medium-chain triglycerides, olive oil and fish oil- based injectable lipid emulsion
FM	Fat mass	SNAP	Supplemental nutrition assistance program
FO-ILE	Fish oil-based lipid injectable emulsion	SOFA	Sequential organ failure score
FTT	Failure to thrive	SO-ILE	Soybean oil-based lipid injectable emulsion
GI	Gastrointestinal	SVC	Superior vena cava
GRADE	Grading of Recommendations Assessment, Development and Evaluation	TEE	Total energy expenditure
HM	Human milk	TNA	Total nutrient admixture
HEN	Home enteral nutrition	UBW	Usual body weight
HPN	Home parenteral nutrition	UL	Tolerable upper intake level
IBD	Inflammatory bowel disease	USP	United States Pharmacopeia
IBW	Ideal body weight	VLBW	Very low birth weight
IC	Indirect calorimetry	WIC	Special supplemental nutrition program for women, infants and children

**Table 6: Unacceptable terms and abbreviations**

Abbreviations in this table shall not be used in ASPEN Board of Directors-approved documents

<b>Symbol</b>	<b>Intended Meaning</b>	<b>Misinterpretation</b>	<b>Correction</b>
A.S.P.E.N.	American Society for Parenteral and Enteral Nutrition	Pre-2016 acronym for the American Society for Parenteral and Enteral Nutrition	ASPEN
AA	amino acid	arachidonic acid	Spell out
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
IVFE	Intravenous fat emulsion	Intravenous iron (Fe)	ILE
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 Practice</i> (ASPEN journal)	Unclear as to which term	Spell out use
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 product with fixed ratios of amino acids, dextrose, ± lipid emulsions and ± 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 ASPEN documents	Nutrition Support or Nutrition Support Therapy
TJC / JACHO	The Joint Commission	“Officially, The Joint Commission does not use this abbreviation. There have been some exceptions, eg, the social media realm where character space limitations exist.” <sup>a</sup>	Spell out full title
TPN	Total parenteral nutrition	Unclear as to total nutrients in formulation or totally by parenteral route	PN, CPN, or PPN

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

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