
Standards of Practice

Definition of Terms, Style, and Conventions Used in A.S.P.E.N. Guidelines and Standards

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The¹ American Society for Parenteral and Enteral Nutrition (A.S.P.E.N.) is a professional society of physicians, nurses, dietitians, pharmacists, allied health professionals and researchers dedicated to assuring that every patient receives optimal nutrition care. A.S.P.E.N.'s mission is to serve as the preeminent, interdisciplinary nutrition society dedicated to patient-centered, clinical practice worldwide through advocacy, education, and research in specialized nutrition support. These definitions include many terms which were defined in the 1995 definitions document¹ along with additional terms which were defined in the 2004 Safe Practices for Parenteral Nutrition² and should be used in conjunction with the following A.S.P.E.N. publications:

Standards of Practice: Nutrition Support Nurse. *Nutr Clin Pract.* 2001;16:56–62.

Standards of Practice: Nutrition Support Physician. *Nutr Clin Pract.* 2003;18:270–275.

Standards of Practice: Nutrition Support Pharmacist. *Nutr Clin Pract.* 1999;14:275–281.

Standards of Practice: Nutrition Support Dietitian. *Nutr Clin Pract.* 2000;15:53–59.

Standards for Nutrition Support: Hospitalized Adult Patients. *Nutr Clin Pract.* 2002;17:384–391.

Standards for Nutrition Support: Residents of Long-Term Care Facilities (Under Revision).

Standards for Nutrition Support: Home and Alternate Site Care (Under Revision).

Standards for Nutrition Support: Hospitalized Pediatric Patients. *Nutr Clin Pract.* 2005;20:103–116.

Guidelines for the Use of Parenteral and Enteral Nutrition in Adult and Pediatric Patients. *JPEN J*

Parenter Enteral Nutr. 2002;26S:1SA-138SA and errata: 2002;26:144.

Terms

The following terms are used in A.S.P.E.N. Standards:

Admixture. The result of combining 2 or more fluids.

Automated Compounding Device. A device used in the preparation of parenteral nutrition (PN). It automates the transfer of dextrose, amino acids, fat emulsion, and sterile water, as well as small-volume injectables, such as electrolytes and minerals to the final PN container. The device is driven by computer software.

Beyond-Use Date. The date established by healthcare professionals from the published literature or manufacturer-specific recommendations beyond which the pharmacy-prepared product should not be used.

Care Plan. Plan of professional clinical activities developed to implement the treatment plan.

Clinical Guidelines. Systematically developed statements to assist practitioner and patient decisions about appropriate health care for specific clinical circumstances.³

Compatibility. The ability to combine 2 or more chemical products such that the physical integrity of the products is not altered. Incompatibility refers to concentration-dependent precipitation or acid-base reactions that result in physical alteration of the products when combined together.

Computerized Prescriber Order Entry (CPOE). A prescription ordering system where the prescriber enters orders directly into a computer.

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

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

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Dosing Weight. The weight used by the clinician in determining nutrient doses. Dependent on institutional or professional preference, the dosing weight may be the actual, ideal, or adjusted body weight of the individual.

Drug-Drug Interaction. An event that occurs when a drug's activity, availability, or effect is altered by another drug.

Drug-Nutrient Interaction. An event that occurs when nutrient availability is altered by a medication, or when a drug effect is altered or an adverse reaction caused by the intake of nutrients.

Dual-Chamber Bags. A bag designed to promote extended stability of a PN formulation by separating the IVFE from the rest of the formulation. It consists of 2 chambers separated by a seal or tubing that is clamped. At the time of administration, the seal or clamp is opened to allow the contents of both chambers to mix and create a TNA.

Enteral Access Devices. Tubes placed directly into the gastrointestinal tract for the delivery of nutrients or drugs.

Enteral Nutrition (EN). Nutrition provided through the gastrointestinal tract *via* a tube, catheter, or stoma that delivers nutrients distal to the oral cavity.

Expiration Date. The date established from scientific studies to meet US Food and Drug Administration (FDA) regulatory requirements for commercially manufactured products beyond which the product should not be used.

Formulation. A ready-to-administer mixture of nutrients.

Hang Time. The period of time beginning with the flow of a fluid through an administration set and catheter or feeding tube and ending with the completion of the infusion.

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

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

Macronutrient. Nutrients present in the body and required in the greatest amount (eg, carbohydrates, proteins, lipids).

Malnutrition. Any disorder of nutrition status including disorders resulting from a deficiency of nutrient intake, impaired nutrient metabolism, or overnutrition.

Medical Nutrition Therapy. The assessment of the nutrition status of a patient followed by nutrition therapy, ranging from the diet modification to the administration of EN or PN.

Micronutrient. Nutrients present and required in the body in minute quantities (eg, vitamins, trace elements).

Minimum Data Set (MDS). A core of elements to use in performing comprehensive assessments in long-term care facilities.

Modular Enteral Feeding. Feeding formulations created by combination of separate nutrient sources or by modification of existing formulations.

Nutrient. Protein, carbohydrate, lipid, vitamins, minerals, trace elements, and 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, etc.)

Nutrition Assessment. A comprehensive approach to defining nutrition status that uses medical, nutrition, and medication histories; physical examination; anthropometric measurements; and laboratory data. A formal nutrition assessment should provide all of the information necessary to develop an appropriate NCP. Because of the inextricable relationship between malnutrition and severity of illness and the fact that tools of nutrition assessment reflect both nutrition status and severity of underlying disease, an assessed state of malnutrition or presence of specific indicators of malnutrition in fact refers to the consequences of a combination of an underlying illness and associated nutrition changes and deficits.

Nutritionally-at-Risk Neonates. Neonates should be considered at nutrition risk if they have:

- Very low birth weight (<2500 g) even in the absence of gastrointestinal, pulmonary, or cardiac disorders.
- Birth weight less than 2 standard deviations below the mean (approximately the 3rd percentile) for gestational age on fetal weight curves.
- Acute weight loss of 10% or more.

Nutritionally-at-Risk Children. Children should be considered at nutrition risk if they have:

- A weight/length or weight for height less than the 10th percentile or greater than the 90th percentile.
- Increased metabolic requirements.
- Impaired ability to ingest or tolerate oral feedings.
- Documented inadequate provision or tolerance of nutrients.
- Inadequate weight gain or a significant decrease in an individual's usual growth percentile.

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

- Actual or potential for developing malnutrition (involuntary loss or gain of $\geq 10\%$ of usual body weight within 6 months, or $\geq 5\%$ of usual body weight in 1 month, a weight of 20% over or under ideal body weight) presence of chronic disease, or increased metabolic requirements.
- Altered diets or diet schedules (receiving total PN or EN, recent surgery, illness, or trauma).

- Inadequate nutrition intake, including not receiving food or nutrition products (impaired ability to ingest or absorb food adequately) for greater than 7 days.

Nutrition Care. Interventions and counseling of individuals on appropriate nutrition intake through the integration of information from the nutrition assessment.

Nutrition Care Plan (NCP). A formal statement of the nutrition goals and interventions prescribed for an individual using the data obtained from a nutrition assessment. The plan, formulated by an interdisciplinary process, should include statements of nutrition goals and monitoring parameters, the most appropriate route of administration of specialized nutrition support (oral, enteral, and/or parenteral), method of nutrition access, anticipated duration of therapy, and training and counseling goals and methods.

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

Nutrition Support Service (or Team). A multidisciplinary group of healthcare professionals including a physician, nurse, dietitian, and pharmacist with expertise in nutrition who manage the provision of SNS.

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

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

Oral Nutrition. Nutrition taken by mouth.

Parenteral Nutrition (PN). The administration of nutrients intravenously.

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 peripheral vein, usually of the hand or forearm.

Pediatric. Patients ≤ 17 years old, including premature newborns, neonates, infants, toddlers, children, and adolescents.

Pharmacodynamics. The effects of drugs on tissues and organs.

Pharmacokinetics. Study of the absorption, distribution, biotransformation, and excretion of drugs by the body.

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.⁴

Specialized Nutrition Support (SNS). Provision of nutrients orally, enterally, or parenterally with therapeutic intent. This includes, but is not limited to, provision of enteral or parenteral nutrition sup-

port to maintain and/or restore optimal nutrition status and health.

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

Standard. Benchmark representing a range of performance of competent care that should be provided to assure safe and efficacious nutrition care.

Total Nutrient Admixture (TNA). A parenteral nutrition formulation containing IVFE as well as the other components of PN (carbohydrate, amino acids, vitamins, minerals, trace elements, water, and other additives) in a single container.

Transitional Feeding. Progression from one mode of feeding to another while continuously administering estimated nutrient requirements.

Vascular Access Device. A device inserted into a vein, which permits administration of intermittent or continuous infusion of parenteral solutions or medications.

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 the Joint Commission on Accreditation of Healthcare Organizations and the Institute of Safe Medication Practices (Tables 1 through 5).

Style Convention

1. Place a space between the numerical value and unit symbols (eg, 25 mg, never 25mg)^{5,6}
2. Do not use trailing zeros for integers (eg, 5 mg, never 5.0 mg)^{5,7}
3. Always use leading zeros for numerical values less than 1 (eg, 0.3, never .3)^{5,7}
4. Unit symbols are never altered in the plural (eg, 175 cm, never 175 cms)⁶
5. Unit symbols are not followed by a period unless at the end of a sentence (eg, 175 cm, never 175 cm.)⁶
6. Information is not mixed with unit symbols or names (eg, "the water content is 20 mL/kg" never "20 mL H₂O/kg" or "20 mL of water/kg")⁶
7. Use drug products by generic name (use lowercase letters) as the primary drug nomenclature, ensuring that each matches FDA-approved nomenclature. Do not abbreviate drug names.⁵ Do not use slang or stem names (eg, "fat emulsion" never "lipids")
8. Use only standard abbreviations. The full term for which an abbreviation stands should precede its first use in the text unless it is a standard unit of measure.⁸

Table 1
Acceptable symbols (units of measure)*

Symbol	Name	Symbol	Name
kcal ¹¹	Kilocalorie	Eq	Gram-equivalent weight
g	Gram	mEq	Milliequivalent
kg	Kilogram	mol	Gram-molecular weight
mg	Milligram	mmol	Millimole
mcg†	Microgram†	Osm ¹¹ or Osmol ¹⁰	Osmole
ng	Nanogram	mOsm ¹¹ or mOsmol ¹⁰	Milliosmole
pg	Picogram	s ¹¹ ‡	Second
L	Liter	min ¹¹ ‡	Minute
dL	Deciliter	h ¹¹ ‡	Hour
mL	Milliliter	d ¹¹ ‡	Day
m	Meter	mo ¹¹ ‡	Month
dm	Decimeter	y ¹¹ ‡	Year
cm	Centimeter	°C	Degree Celsius
mm	Millimeter		

*Except as noted, all symbols from NIST⁹ or USP.¹⁰

†The μg symbol is acceptable in the scientific literature; however, ISMP⁵ recommends that mcg be used to avoid confusion with mg.

‡Use the symbol only in a virgule construction ("/" used to mean "per") and in tables or line art. Do not use in footnotes, figure legends, or text.¹¹

Table 2
Acceptable symbol prefixes⁹

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	micro; 10^{-6}
da	Deka; 10^1	n	nano; 10^{-9}

Table 3
Non-acceptable symbols

Symbol	Intended meaning	Misinterpretation	Correction
cc	Cubic centimeter	1. Misread as "U" or "4" 2. cm^3 is SI nomenclature	mL For fluid volumes or cm^3 for solid volumes
U	Unit	Mistaken as zero	Spell out "unit"
μg	Microgram	Confusion with mg	Mcg
IU	International Unit	Confusion with IV	Spell out International Unit

Table 4
Acceptable abbreviations^{3,11,12*}

Term	Intended meaning	Term	Intended meaning
A.S.P.E.N.	American Society for Parenteral and Enteral Nutrition	LBW	Low birth weight
AGA	Appropriate for gestational age	LGA	Large for gestational age
AI	Adequate intake	NCP	Nutrition care plan
BEE	Basal energy expenditure	NRI	Nutritional risk index
BMI	Body mass index	PCM	Protein-calorie malnutrition
BMR	Basal metabolic rate	PICC	Peripherally inserted central catheter
CPN	Central parenteral nutrition	PINI	Prognostic inflammatory and nutritional index
CQI	Continuous quality improvement	PN	Parenteral nutrition
DRI	Dietary reference intake	PNI	Prognostic nutrition index
EAR	Estimated average requirement	PPN	Peripheral parenteral nutrition
EER	Estimated energy requirement	RDA	Recommended dietary allowance
ELBW	Extremely low birth weight	REE	Resting energy expenditure
EN	Enteral nutrition	RMR	Resting metabolic rate
FFA	Free fatty acids	RNI	Recommended nutrient intake
FFM	Fat free mass	RQ	Respiratory quotient
FTT	Failure to thrive	SDA	Specific dynamic action
GI	Gastrointestinal	SGA	Small for gestational age
HEN	Home enteral nutrition	SNS	Specialized nutrition support
HPN	Home parenteral nutrition	SVC	Superior vena cava
IBW	Ideal body weight	TEE	Total energy expenditure
IDPN	Intradialytic parenteral nutrition	UL	Tolerable upper intake level
IUGR	Intrauterine growth restriction	VLBW	Very low birth weight
LBM	Lean body mass		

*Note: The full term for which an abbreviation stands should precede its first use in the text.

Table 5
Unacceptable abbreviations^{3,9,11,12}

Term	Intended meaning	Misinterpretation	Correction
HA	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]	PN, CPN, or PPN
PEN	Parenteral/enteral nutrition	Combination term unclear when meaning one or the other therapy	PN or EN
TPN	Total parenteral nutrition	Unclear as to total nutrients or totally by parenteral route	PN, CPN, or PPN

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