

# Prescribing Checklist

The American Society for Parenteral and Enteral Nutrition (ASPEN) champions evidence-based practices that support parenteral nutrition (PN) therapy across varying patient populations, disease states, and practice settings. The appropriate use of PN aims to maximize clinical benefit while minimizing the potential risks.

This checklist promotes safe prescribing practices for PN by ensuring that prescriptions consider compatibility and stability factors. It should be utilized when a patient starts PN therapy and reviewed daily to confirm that PN remains appropriate and is prescribed safely. Use this checklist along with companion checklists on PN order review, compounding, and administration.

- Inform patient/caregiver of the benefits and risks associated with PN.
- Evaluate, clearly define, and accurately document the patient's medical/surgical history and appropriate indication(s) for PN based on published evidence.
- Document patient-specific PN therapeutic goals and monitoring parameters, including:
  - Vascular access device (VAD)
  - Macronutrient requirements:
    - » Total energy, carbohydrate, protein, fatty acid, and fluid goals
  - Micronutrient requirements:
    - » Electrolytes
    - » Vitamins
    - » Trace minerals
  - Fluid requirements:
    - » Monitor output urine and GI losses (NG, stoma, stool)
  - Monitoring parameters and frequency of monitoring: (See Table 1)
    - » Risk for refeeding syndrome
    - » Serum electrolytes
    - » Serum glucose
    - » Hepatic function
    - » Renal function
    - » Serum triglycerides
    - » Essential fatty acids, water- and fat-soluble vitamins, trace minerals
  - PN therapy endpoints, response to treatment, and indicators of treatment failure.
- Prescribe PN in a [medication safety zone](#) to minimize errors.
- Use a standardized PN order format including a standardized sequence of PN components. See *Figures 1 and 2 for ASPEN examples for adult and pediatric patients.*
  - PN order elements:
    - » Patient name or other identifier
    - » Date of birth and/or age
    - » Allergies and associated reactions
    - » Height and dosing weight (metric units)
    - » Diagnosis/diagnoses
    - » Indication(s) for PN
    - » Administration route/VAD (central vs. peripheral)
    - » Prescriber contact information
    - » Date and time order submitted
    - » Administration date(s) and time(s)
    - » Volume and infusion rate, including infusion schedule (e.g., continuous vs. cyclic)
    - » Type of formulation (2-in-1 PN admixture with separate infusion of lipid injectable emulsion (ILE) or a total nutrient admixture)
  - PN components:
    - » Adults – ordered as amounts/day
    - » Pediatrics – ordered as amounts/kg/day
    - » Neonates – ordered as amounts/kg/day
    - » A dose for:
      - each macronutrient
      - each electrolyte ordered as a complete salt form
      - multi-trace elements
      - individual trace elements, if ordered
      - multivitamins
      - individual vitamins, if ordered
      - regular insulin as appropriate, if ordered
      - non-nutrient medications, if ordered and previously confirmed to be stable and compatible with the specific PN order (check with manufacturer for compatibility/stability information)

- Use Computerized Prescriber Order Entry (CPOE) with clinical decision features integrated within the Electronic Health Record (EHR) to prescribe PN and detect real-time relevant compatibility and stability problems and dosing safety concerns.
- Avoid handwritten orders and verbal and telephone orders.
- When a CPOE system is not available, PN should be prescribed using a standardized order template as an editable electronic document.
- Calculate final active ingredient concentrations of the prescribed PN components and evaluate against compatibility and stability limits (e.g., limits for total nutrient admixture stability, calcium phosphate solubility, micronutrient stability) based on published literature and manufacturer data for component products used.

### Specific Considerations for Multi-Chamber Bag PN Products

- Use manufacturer compatibility, stability, and solubility information.
- Daily addition of multivitamin and trace elements for all parenteral nutrition products, including MCBs, is recommended by ASPEN to prevent micronutrient deficiencies.
- Carefully evaluate orders containing additives to the MCB, including potential differences in salt formulations (i.e., calcium chloride vs gluconate).
- Review total daily electrolyte salt delivery at prescribed rate and volume (versus what is in the full 1 or 2 L bag) and how it would be communicated in the EHR and label, as well as what the total dose would be with any additives.

### Home PN and Transition of Care

- Prescribe home PN therapy using a PN order template that allows for multiple days of therapy, considering compatibility/stability in determining the beyond-use date, and reflects trends in laboratory values.
- Use electronic order transfer/communication between organizations.

Figure 1. Parenteral Nutrition Order Template: Adult Patient

Patient Information	
Patient name _____	Medical record number _____ Birthdate/age _____
_____ Patient location _____	Allergies _____
Height and dosing weight: Ht: _____ cm Dosing Wt: _____ kg	
Diagnosis(es)/Indication(s) for PN _____	
Vascular access device/location CVC type _____ Location _____	
Administration date/time _____	
Base Formula	
Amino acids	Amount/day g
Dextrose	g
IV Fat emulsion	g
Electrolytes	
Sodium phosphate	mmol
Sodium chloride	mEq
Sodium acetate	mEq
Potassium phosphate	mmol
Potassium chloride	mEq
Potassium acetate	mEq
Magnesium sulfate	mEq
Calcium gluconate	mEq
Vitamins, Trace Elements, Additives	
Multi-component vitamins	mL
Multi-component Trace elements	mL
Other Additives (eg, individual vitamins or trace elements, cysteine, regular insulin) as clinically appropriate and compatible	
PN Instructions	
Total volume _____ mL. Infusion rate _____ mL/hr, start and stop times _____	
Cycle information _____	
Prescriber and contact information _____	

Figure 2. Parenteral Nutrition Order Template: Pediatric/Neonatal Patient

Patient Information	
Patient name _____	Medical record number _____ Birthdate/age _____
_____ Patient location _____	Allergies _____
Height and dosing weight: Ht: _____ cm Dosing Wt: _____ kg	
Diagnosis(es)/Indication(s) for PN _____	
Vascular access device/location CVC type _____ Location _____	
Administration date/time _____	
Base Formula	
Amino acids	Amount/kg/day g
Dextrose	g
IV Fat emulsion	g
Electrolytes	
Sodium phosphate	mmol
Sodium chloride	mEq
Sodium acetate	mEq
Potassium phosphate	mmol
Potassium chloride	mEq
Potassium acetate	mEq
Magnesium sulfate	mEq
Calcium gluconate	mEq
Vitamins, Trace Elements, Additives	
Multi-component vitamins	mL
Multi-component trace elements	mL
Other Additives (eg, cysteine, regular insulin) as clinically appropriate and compatible	
PN Instructions	
Total volume _____ mL. Infusion rate _____ mL/hr, start and stop times _____	
Cycle information _____	
Prescriber and contact information _____	

**Table 1. Laboratory Monitoring During PN (Adult and Pediatric)**

Parameter	Acute Care PN			Long-Term PN			
	Baseline	Days 1-7	Ongoing, Stable	Initial, Postdischarge	Weeks 1-4 (or Until Stable)	At 3 Months	Ongoing, Stable
Glucose, BUN, creatinine, electrolytes, calcium, magnesium, phosphorus	✓	Daily x 3 or until stable	1-2 x/wk or as clinically indicated	✓	✓		Monthly
CBC with differential	✓	Daily x 3 or until stable	1-2 x/wk	✓	✓		Monthly
Total bilirubin, direct bilirubin, AP, AST, ALT	✓		Weekly	✓			Monthly
PTT, PT, INR	✓		Weekly				Monthly
Triglyceride level	✓	Pediatric: daily until stable then weekly	Weekly	✓			Monthly
Serum proteins (to monitor inflammation)	✓		Weekly	✓			Monthly
Iron indices			As clinically indicated			✓	
Zinc, selenium, manganese, copper, chromium			As clinically indicated			✓	
Vitamin, A, 25-OH vitamin D, vitamin E			As clinically indicated			✓	
Vitamin B <sub>12</sub> and folate			As clinically indicated			✓	
TSH				As indicated			
Carnitine			No guideline for adults			Pediatric patients	

ALT, alanine aminotransferase; AP, alkaline phosphatase; AST, aspartate aminotransferase; BUN, blood urea nitrogen; CBC, complete blood count; INR, international normalized ratio; PN, parenteral nutrition; PT, prothrombin time; PTT, partial thromboplastin time; TSH, thyroid-stimulating hormone. Reprinted from Worthington P, Balint J, Bechtold M, et al. When is parenteral nutrition appropriate? *JPEN J Parenter Enteral Nutr.* 2017;41(3):324-377.

For full recommendations, rationale, and references, go to:

- Boullata JI, Salman G, Mirtallo JM, et al. Parenteral nutrition compatibility and stability: Practical considerations. *Nutr Clin Pract.* 2024;39(5):1150-63.
- Ayers P, Adams S, Boullata J, Gervasio J, Holcombe B, Kraft M, et al. ASPEN parenteral nutrition safety consensus recommendations. *JPEN J Parenter Enteral Nutr.* 2014;38: 296-
- Worthington P, Balint J, Bechtold M, et al. When Is Parenteral Nutrition Appropriate? *JPEN J Parenter Enteral Nutr.* 2017;41(3):324-377.
- Guenter P, Boullata JI, Ayers P, et al. Standardized competencies for parenteral nutrition prescribing: the American Society for Parenteral and Enteral Nutrition model. *Nutr Clin Pract.* 2015 Aug;30(4):570-6.

**Note:** This content has been developed based on ASPEN Board Approved documents. The information presented here is for use by healthcare professionals to inform other clinicians and/or patients/caregivers. Recommendations provided here do not constitute medical or other professional advice and should not be taken as such. To the extent that the information presented here may be used to assist in the care of patients, the primary component of quality medical care is the result of the professional judgment of the healthcare professionals providing care. The information presented here is not a substitute for the exercise of professional judgment by healthcare professionals. Circumstances and patient specifics in clinical settings may require actions different from those recommended in this document; in those cases, the judgment of the treating professional should prevail. Use of this information does not in any way guarantee any specific benefit in outcome or survival. This tool is intended to supplement, but not replace, professional training and judgment.