

## I-270 Parenteral Nutrition Administration

Parenteral nutrition may be administered via central venous access or peripheral venous access. If the final concentration of dextrose exceeds 10% and amino acid exceeds 5%, the solution will be administered via a central venous access. Parenteral nutrition may be administered continuously or cyclically for a specified period of time. Trained and competent nurses shall be knowledgeable of the types of nutrition, indications for use, appropriate dosage and diluents, administration, monitoring parameters, side effects, toxicities, incompatibilities, stability, storage requirements and potential complications.

### Purpose

Ensure the safe administration of Total Parenteral Nutrition (TPN) and intralipid (fat emulsion) therapy in a home setting.

Provide nutritional support for those clients unable to eat or swallow appropriately.

### Applies To

Registered Nurses

Licensed Practical/Vocational Nurses

Other (*Identify*): \_\_\_\_\_

### Equipment/Supplies

- Parenteral nutrition solution.
- Lipid emulsion solution as ordered.
- Sterile saline and 100u/ml heparin for irrigation and flush, as ordered and needed.
- Administration sets with in-line filtration systems or an add-on filtering system.
- Needleless cannula and adapter.
- Blood tubes and lab requisitions for blood sampling, if needed.
- Povidine wipes, alcohol wipes.
- Disposable non-sterile gloves.
- Sharps container.
- Multivitamins or other additives in syringes with needles to add, if indicated.
- Container with lid for specimen transport, if needed.
- Y-connector set if indicated.

### Special Considerations

TPN/lipids will be administered through central venous access using an electronic infusion device. Physician orders must include the parenteral nutrition formula, specifying the percent of dextrose, amino acids and the addition of lipids, additives and

concentrations, total volume to be infused, rate of administration, frequency of infusion, and route of administration.

Only a Registered Nurse will administer TPN and instruct the client/caregiver in administration techniques.

Adequate storage and refrigeration must be available.

A Registered Nurse must be available 24 hours a day and be able to access pharmacist and physician to report concerns or to access emergency consultation.

Home therapy will depend on the client's admission criteria and client/ caregiver willingness and ability to perform support procedures.

Laboratory data will be obtained and monitored at designated intervals during therapy.

**Solution containers must not be immersed in water or put in the microwave to speed warming!** Heat can impair stability of solutions and degrade the integrity of plastic containers.

Catheter-related sepsis is often associated with the presence of fever and/or chills noted a few hours after initiating the infusion and absent at the end of the infusion.

Hyperglycemia in previously stable individuals may also indicate catheter sepsis.

### Procedure

1. Explain the procedure to the client/caregiver. Position the client for comfort with access to venous device.
2. Assemble equipment and wash hands. Refer to Hand Washing Procedure.
3. Examine TPN bag for leaks and expiration date. Check the label and inspect for particulate matter. If the dextrose, amino acids, and lipids are mixed in one bag, check for separation of emulsion (cracking, or marbling).
4. Don clean gloves.
5. Cleanse medication port with Povidone wipes followed by alcohol wipes. Inject medications utilizing aseptic technique, if indicated. Use special precaution not to pierce TPN bag with additive needle. Gently agitate bag to mix additive.
6. Pull protective cap off TPN bag and spike bag. Prepare infusion pump and prime tubing following manufacturer's recommendations. Use a 0.2 micron filter when administering parenteral nutrition solution. If the dextrose, amino acids and fat emulsion are mixed in one container, use a 1.2 micron filter.
7. Using aseptic technique, access injection site and flush with saline infusion. Tape all connections. Solution should infuse within 24 hours or be discarded. Primary administration sets are changed every 24 hours, immediately upon suspected contamination, or when there is a question of system integrity.
8. For lipid administration:
  - a. Use administration set provided with the lipid emulsion.

- b. Use a 1.2 micron filter.
  - c. Piggyback the administration set into the parenteral nutrition solution set or administer via “Y-Connector” set.
  - d. Infuse on a pump.
9. To discontinue fluids, follow these steps:
- a. Wash hands. Refer to the Hand Washing procedure. Apply gloves.
  - b. Prepare saline flush.
  - c. Clamp device, if applicable.
  - d. Turn off infusion pump.
  - e. Using alcohol swab, hold end of venous access and remove access device.
  - f. Using clean alcohol swab, clean injection cap for 30 seconds.
  - g. Insert saline syringe cannula into injection cap and flush.
  - h. Prepare heparin flush if applicable and perform flush as outlined in *Central Venous Catheter Management* procedure.
10. Dispose of supplies as outlined in the Agency Waste Disposal Policy.

**Documentation Guidelines**

Document in the clinical record:

- 1. Solution administered and medications administered including the dosage, route of administration, rate of infusion, type of pump, date and time of administration (start and stop time)and client response to the treatment.
- 2. Blood sampling, if ordered.
- 3. Weight, vital signs, and blood glucose, if ordered.
- 4. Appearance of catheter site, catheter patency.
- 5. Client/caregiver competence and compliance with procedure.
- 6. All client caregiver education provided. Type of solution, additives and infusion rate.

**Related Procedures**

Management of Central Venous Catheters, Management of Implantable Vascular Access Devices

**Policy History**

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