

 <p><b>Connecticut Valley Hospital Nursing Policy and Procedure</b></p>	<p><b>SECTION D: PSYCHOLOGICAL ADAPTATION CHAPTER 13: BASIC NEEDS</b></p> <p><b>POLICY AND PROCEDURE 13.2.7 Total Parenteral Nutrition - TPN</b></p>
<p>Authorization: Nursing Executive Committee</p>	<p>Date Effective: May 1, 2018 Scope: Registered Nurses and Licensed Practical Nurses</p>

**Standard of Practice:**

The nurse will ensure that patients receiving Total Parenteral Nutrition (TPN) will be monitored carefully to assess the patient's response to the nutrient solution and to detect any signs of complications.

**Standard of Care:**

The patient can expect that the Implantable Venous Access Devices will safely provide total parenteral nutrition.

**Policy:**

To sustain life and promote growth in patients whose gastrointestinal function is altered to such an extent that adequate oral intake is prevented for an extended period of time.

**Procedure:**

1. TPN Solutions

- A. TPN solutions shall be sent from Pharmacy as they are needed and stored in the unit (medication) refrigerator until 1 hour before use.
- B. TPN solution is administered at a constant rate.
- C. TPN solutions hung, but not infused, shall be discarded after 24 hours.
- D. Only Registered Nurses are allowed to hang TPN.
- E. The Registered Nurse with another nurse must verify that the contents of the TPN solution as indicated on the bag's label correspond with the contents as delineated on the physician order sheet.
- F. The Pharmacy shall be notified immediately if the bags contain the following:
  - A pool of clear yellow oil across the top (broken emulsion).
  - Caking of fat that may appear on the sides of the bag (cottage cheese).
  - Densely white chalky top and skimmed milk bottom (creaming).

2. Connecting the TPN to Patient

- A. Aseptic technique is used in set-up, administration and catheter management.
- B. Prepare supplies
  - TPN bag at room temperature
  - Additive Medications
  - Syringes with needles
  - IV tubing and antisiphon valve
  - Pre-filled saline syringes
  - Pre-filled Heparin syringes
  - Battery pack and backpack
  - Sharps container
  - Tape
  - CADD Prizm Pump
  - Alcohol wipes
  - 9 Volt Battery
- C. Wash Hands. Use antibacterial soap and lots of friction. Remove any dirt from under nails, dry hands with paper towel.
- D. Inspect TPN Bag for correct name and expiration date. If incorrect, contact your pharmacist immediately. If your TPN contains lipids it will appear milky white. If TPN bag appears unusual in color or consistency call your pharmacist before using.
- E. Prepare and add vitamins and any other additives to the TPN bag.
  - a. Wipe the injection port of the TPN bag with an alcohol wipe before adding each medication.
- F. Prepare IV tubing
  - a. Remove tubing from package and close snap clamp.
  - b. Attach anti-siphon valve securely to end of IV tubing.
  - c. Attach tubing to the medication bag.
    - 1. Remove the pull tab from the medication bag.
    - 2. Remove the plastic cap from the spiked end of the tubing.
    - 3. Insert spike into medication bag by twisting until secure.
  - d. Gently rock TPN to mix and release air bubbles.
- G. Attach tubing to pump.
  - a. Attach reservoir to pump by placing brackets on hinges and square in square hole.
  - b. Hold pump down on table.
  - c. Use flat side of a coin to push button into pump and turn ¼ turn counterclockwise. (Make sure to line up with the solid dot on the pump).
  - d. Open clamp on tubing.
  - e. Connect pump to battery pack.
  - f. Press NEXT button until “Reservoir Volume” appears. When *Reset Reservoir Volume* appears press “Y”.

Your Reservoir Volume is: 100 cc (1cc = 1ML)

- g. Prime fluid through tubing
  - 1. *Prime tubing* will appear on the screen, Press “Y” for yes.
  - 2. Press and hold the “Y” button till tubing is filled with TPN
  - 3. The pump will stop in intervals and ask *do you want to continue priming*, Press “Y” until TPN fluid drips from end of tubing.  
(This may take 3-4 times to completely prime the tubing)
- H. Change battery every day
  - a. Slide the battery cover off the side of the pump.
  - b. Insert the battery in the direction that diagram indicates.
  - c. Replace battery door.
- I. Saline flush IV catheter
  - a. Open clamp on IV catheter and/or extension set.
  - b. Cleanse IV cap with alcohol wipe.
  - c. Attach the saline syringe to injection cap by twisting until secure and flush line.

\*\*\*If flushing produces pain, burning or swelling around catheter, or if flushing requires extreme pressure – **STOP IMMEDIATELY AND CALL APRIA NURSE!**

### 3. TPN Administration

#### Administer TPN

- a. Cleanse IV cap with alcohol wipe and close clamp.
- b. Remove the protective cap from the end of tubing and attach to IV cap.
- c. Open all clamps.
- d. Press Start/Stop button, menu will ask *do you want to start the pump?*
- e. Press “Y”

The pump will automatically run through the TPN program. *Taper up or running* will appear on the screen and the green light will blink to show pump is running. The screen will go out even though the pump is running.

- 4. When infusion is complete:
  - a. Push Stop/Start, Menu will ask *do you want to stop the pump?*
  - b. Press “Y”.
  - c. Close clamp on IV tubing and remove from IV cap as instructed by APRIA nurse.
  - d. Saline flush IV catheter (repeat step 3)

**\*If your TPN is running less than 24 hours continue to next step.**

**\*\*If your TPN is running continuously prepare your next bag.**

- e. Heparin flush IV catheter
  - 1. Cleanse IV cap with alcohol pad
  - 2. Attach heparin syringe by twisting until secure and flush line slowly.
  - 3. DO NOT clamp catheter until after removing the syringe from the IV cap.

- f. Secure catheter with tape.
- g. Remove the *USED* reservoir from the pump
  - 1. Close all clamps
  - 2. Using a coin, insert the coin into the slot and turn clockwise until the latching button pops out.
  - 3. Remove the reservoir from the pump.
  - 4. Discard as directed.
- H. Bag and tubing may go in regular trash.
- I. Unplug battery pack from pump and plug charger into battery pack as instructed by APRIA nurse.
- J. Remove 9-volt battery from pump.

**\*\*Remember to plug battery pack in an outlet while not in use to recharge the battery\*\***

- 5. Disconnecting for a shower
  - a. Stop the pump.
  - b. Clamp the tubing to the pump.
  - c. Disconnect the tubing from the IV cap
  - d. Place a new sterile cap over the end of the tubing.
  - e. Cleanse IV cap with alcohol wipe.
  - f. Flush IV catheter with saline, per doctor's order.
  - g. Cleanse IV cap with alcohol wipe.
  - h. Flush IV catheter with heparin, per doctor's order.
  - i. **DO NOT** clamp catheter until **after** removing the syringe from the IV cap.
- 6. Reconnecting for a shower
  - a. Cleanse IV cap with alcohol wipe.
  - b. Flush IV catheter with saline, per doctor's order.
  - c. Cleanse IV cap with alcohol wipe and close clamp.
  - d. Connect tubing to the IV cap.
  - e. Open all clamps
  - f. Start pump
    - 1. Press Start/Stop button, *Start the pump?* Will appear on the screen.
    - 2. Press "Y", pump will start.
- 7. SASH
  - (S) Saline Flush
  - (A) Administer Medication
  - (S) Saline Flush
  - (H) Heparin Flush
- 8. Documentation
  - a. Daily weights at the same time each a.m. after the patient voids

- b. I & O daily
  - c. TPN rate daily
  - d. Accu-checks every 6 hours
  - e. Patient's tolerance to therapy daily
  - f. Wound healing/catheter site daily
  - g. Skin integrity daily, (rashes, flushing, color changes) daily
  - h. Temperature and vital signs every 4 hours
  - i. Place all documentation in the Progress Note section of the chart.
- j. Nursing will transcribe on the MAR, TPN in one box and if medications are added, will document the medication in another box on the MAR. If feasible, the two boxes should be right after each other.
  - k. After both nurses check the label on the TPN solution against the physician order sheet for accuracy, both nurses will confirm the verification process on the MAR with their initials and the time the bag was hung.
9. Tubing
- a. Tubing shall be changed at least every
    - 1. 24 hours or with each infusion bag.
    - 2. All tubing needs labels with date, time, and initials.
10. Notify the Physician of:
- a. Rapid pulse from normal baseline
  - b. Temperature greater than 100 degrees Fahrenheit orally
  - c. Chills, hypothermia
  - d. Presence of edema or erythema of skin from catheter site
  - e. Malaise
  - f. Altered levels of consciousness
  - g. Accu-check results that are out of range
  - h. Respiratory change (dyspnea, cyanosis)
  - i. Chest pain
  - j. Nausea and vomiting
11. Dressing changes and blood draws will be done by the APRIA Healthcare Nurses as outlined on the contract.
12. Alarms will be tested by APRIA Healthcare team members.

References:

APRIA Healthcare, "TPN Therapy via CADD Prizm Pump" 1999.

Fundamental Skills and Concepts Inpatient Care, Sixth Edition, Lippincott. Philadelphia. New York.

Weinstein, S.M., Planners, Principles and Practice of Intravenous Therapy, 6<sup>th</sup> Ed. Philadelphia: Lippincott, Williams & Wilkins, 1997.