

Parenteral Nutrition

Medication/Rate: _____.

Parenteral nutrition (PN) provides nutrients, vitamins, and electrolytes through your intravenous (IV) line. The PN comes in a premixed divided sealed bag that contains white lipids (fat) in the top section and clear dextrose (sugar) and amino acids (protein) in the bottom section as well as other important nutrients. Additives are injected into the bag just before you are ready to use it.

Store the PN bags on a clean surface in the refrigerator, away from food. Stack no more than 3 PN bags. Remove the PN bag from the refrigerator and place it on a clean surface about 1-2 hours before your infusion. This lets the bag warm naturally to room temperature. Follow the directions on your medicine label.

Do not heat the medicine in a microwave oven, direct sunlight, hot water, or any other heat source. Heating may damage the medicine and make it harmful.

If you forget to take your medicine out of the refrigerator, it is still okay to infuse. **Do not change your scheduled dosing times.**

Follow these instructions with every infusion.

❖ *The needleless blue connector will be referred to as the “blue cap” below.*

1. Wash your hands well using a liquid soap for at least 20 seconds. Be sure to wash all parts of your hands including the top and bottom, between fingers, and under fingernails. **Use a paper towel to dry your hands.** You may use an alcohol-based hand sanitizer if your hands are not visibly dirty.
2. Prepare a clean work area: wipe the surface with a disinfecting wipe or soapy water. Allow to dry.
3. Place a clean paper towel on your clean work area and gather needed supplies:
 - Medicine - check the medicine label to make sure the following are correct:
 - ✓ Patient name and date of birth
 - ✓ Medicine name, dose, and expiration date
 - ✓ Number of times the medicine is given each day
 - ✓ **Do not use** the PN bag if the PN solution is cloudy, the bag is leaking, or the lipids have yellow streaks. Once both compartments are mixed, the bag will look milky and should not have any brown spots or yellow streaks in the bag. **If you see this, do not use the medicine and call Home+ Home Infusion at 755-1150.**
 - Additive vials (vitamins, electrolytes, trace elements, medicines)
 - Empty 10mL syringe(s) (for additives)
 - 18g Needle(s) (for additives)
 - Sharps Container
 - CADD Pump
 - 4 AA Batteries

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- Pump Tubing (with 1.2 micron filter)
 - Backpack
 - “Patient Information Guide” booklet
 - Alcohol pads
 - Gloves
 - Sterile cap (if needed)
 - Prefilled saline syringe(s)
 - Prefilled heparin syringe(s) (if needed)
4. Wash your hands again and put on gloves.
 5. Tap the saline syringe firmly against your hand to move any air bubbles to the top. Loosen the cap on the saline syringe.
 6. Hold the syringe so the tip points to the ceiling. Push the plunger up to remove the air.
 7. Use a new alcohol pad to scrub the blue cap on the end of your IV line for 5-15 seconds. Let this air dry. Do not fan or blow air on the blue cap.
 8. Take the cap off of the saline syringe. Do not touch the syringe tip. **If the tip is touched, throw it away and use a new one.** Attach the end of the saline syringe to the blue cap on your IV line (push and twist clockwise).
 9. Open the clamp(s) on your IV line. Push the syringe plunger using a start/stop pulsing motion. Do 9 quick pulses of about 1 mL each, stopping briefly between each pulse. Leave about 1 mL of saline in the syringe. Remove the syringe.

Activate the Parenteral Nutrition (PN) Bag

10. With the writing on the bag facing up, you will notice there are three ports on the bottom:
 - The left port is for injecting the additives your doctor has ordered
 - The middle port is for connecting the spike from the CADD pump tubing
 - The right port is used by the pharmacy to fill the PN bag (you won't use this port)
11. Place your thumb and forefinger on the yellow rubber strip that separates the two sections of the bag and peel it away towards the right. Slide the grey plastic rod off the back of the bag. Throw away the rubber strip and plastic rod. The contents of the two sections will begin mixing together. Gently knead the bag with your hands to mix it well.

Inject Additives into the PN Bag

- ❖ **Provided additives should be injected into the bag just before starting the PN.**
- ❖ **Do not add anything to the PN bag that has not been provided by Home Infusion.**

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12. Remove the cap on the additive vial. Use a new alcohol wipe to scrub the rubber stopper for 5-15 seconds. Leave the alcohol wipe on top of the vial until you are ready to draw it up.
13. Use a new alcohol wipe to scrub the left port on the PN bag for 5-15 seconds. Place the alcohol wipe underneath the port to protect it from touching any surface.
14. Open the syringe wrapper and remove the syringe. Avoid touching the tip of the syringe.
15. Open the needle wrapper and twist the needle onto the syringe tip until it is tight.
16. Remove the cap on the needle by pulling it straight off.
17. Pull back on the syringe plunger to add air. For example, for a 5mL vial, add 5mL air. This makes it easier to withdraw the medicine.
18. With the vial on a flat surface, push the needle straight down through the rubber stopper.
19. Turn the vial and syringe upside down and push the plunger up to add the air into the vial.
20. Withdraw the medicine by pulling down on the syringe plunger. Move the needle down as you withdraw the liquid to remove the entire contents of the vial.
21. Remove the syringe and needle from the vial.
22. Tap the side of the syringe to move air bubbles to the top. Push the plunger up to remove the air.
23. Insert the needle into the left rubber-tipped port of the PN bag.
24. Push the plunger so that all of the liquid goes inside the bag.
25. Remove the empty syringe and place into the sharps container. **Do not recap the needle.**
26. Gently mix the bag by kneading or using a side-to-side motion. Do not shake.
27. Repeat steps 12 - 27 for each additive vial. Use new alcohol pads and a new syringe and needle for each vial. Be sure to gently mix the bag after adding each vial.

Prime the Pump Tubing and Start PN

28. See the “CADD®-Solis VIP Patient Information Guide” for:
 - Warnings
 - Installing Batteries
 - Turning the Pump On and Off
 - Removing a Cassette
 - Attaching a New Cassette
 - Priming the Pump Tubing
 - Resetting the Reservoir Volume
 - Starting the Pump
 - Stopping the Pump
 - Alarms and Messages
29. Follow the instructions to install new batteries (change daily) and turn on the pump.
30. Open the pump tubing package, unwind the tubing and **close the clamp.**

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31. Remove the rubber cover from the middle port of the PN bag. Do not let anything touch this entry port once the cover is removed.
32. Remove the cover from the spike end of the pump tubing, do not touch the spike. Insert the spike into the middle port of the PN bag using a pushing/twisting motion until it reaches the ridge line.
33. Follow the instructions in the “Patient Information Guide” to attach the cassette to the pump and prime the tubing. **Do not prime the tubing while it is connected to the blue cap on your IV line.**
34. Use a new alcohol pad to scrub the blue cap on the end of your IV line for 5-15 seconds. Let this air dry, do not fan or blow air on the blue cap.
35. Remove the cap that is on the end of the primed tubing. **Do not touch the tip of the tubing.** Connect the tubing to the blue cap on your IV line (push and twist clockwise).
36. Start the pump.
37. When the medicine is done infusing, the pump will beep. Stop the pump and clamp the tubing.
38. Wash your hands and put on gloves.
39. Disconnect the PN tubing from the blue cap and either discard it or put on a sterile cap as directed below.
40. Flush your IV line with saline following instructions in steps 5-9. If this is your last step, remove the syringe and close the clamp.
41. If you will need heparin, prepare the heparin syringe by following steps 5-7.
42. Attach the end of the heparin syringe to the blue cap on your IV line (push and twist clockwise). Slowly push the plunger. Remove the syringe and clamp the tubing.
43. Throw your used supplies into the household trash unless you are told not to. You may want to remove the yellow label from the PN bag and shred it or cross it out as it contains personal information.

Additional Information:

- You will change the pump tubing and batteries every 24 hours.
- If you need to disconnect and reconnect the pump tubing, you will place a sterile cap on the end of the tubing. Wash your hands and put on gloves. Stop the pump. Open the package to the sterile cap. Remove the pump tubing from the blue cap on your IV line. **Do not let the tip of the pump tubing touch anything.** Pick up the sterile cap, twist the white cap off of the blue holder, and twist the white cap onto the end of the pump tubing. Throw the blue holder away. When you are ready to reconnect the pump tubing, wash your hands and put on gloves. Follow steps 5-9 to flush the IV line with saline, and steps 35 – 36 to reconnect the tubing.

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- ❖ Flush all IV lines twice daily unless told differently by your nurse.
- ❖ Always flush the IV line(s) in this sequence after giving your medication:
 - flush
 - remove the syringe
 - clamp
- ❖ Always keep the line clamped when not in use.
- ❖ Wipe ONLY the blue cap, the PN bag port and the additive vials with alcohol. The tip of the syringes and pump tubing are sterile and do not need to be cleaned.

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