



Administration of Parenteral Nutrition [(PN, also known as Total Parenteral Nutrition (TPN), or Central Parenteral Nutrition (CPN)]



For additional education please contact your agency for assistance

Medication(s) to infuse: _____ Home Infusion Nurse (name, phone #): _____

Home Infusion Pharmacist (name, phone #): _____

Four Components for Performing Infusions:

1-PRACTICE GOOD HAND-WASHING 2- PREPARE SUPPLIES 3- PREPARE PN / ADDITIVES & START PN 4- STOP, DISCONNECT, & FLUSH

Practice good hand-washing

Always wash hands when instructed

Soap and water preferred

Hand sanitizer (optional)

Wash for a full 20 seconds or rub until dry

STEP 1: PRACTICE GOOD HAND-WASHING

- Always remember to **WASH YOUR HANDS** for a full 20 seconds when instructed.
 - Soap and water are always preferred. If soap and water are not available, hand sanitizer is acceptable.
 - Make it a habit to wet your hands, apply soap, and lather for 20 seconds (hum the Happy Birthday song twice).
 - If using hand sanitizer, rub a dime-sized amount between your hands until dry. Never wave or blow on your hands to speed up drying.
 - Remember, if using gloves, you must still wash your hands when instructed.
 - Washing your hands helps reduce your chance of infection.

Prepare supplies

Remove PN from fridge

WASH HANDS

Clean workspace

WASH HANDS

Gather & arrange supplies

WASH HANDS

Prepare the pump

STEP 2: PREPARE SUPPLIES

- Note the time to start the infusion: _____ AM PM and how long the infusion is to run: _____ hrs.
- You may be ordered fat free (clear or yellow bag) or fat bags (white bag) with lipids. Your orders will say how many days you are to receive each type. Please discuss the schedule with your care team.

fat free bags on SUN MON TUE WED THU FRI SAT

fat bags on SUN MON TUE WED THU FRI SAT

- Note the time to remove the PN from refrigerator: _____ AM PM
 - Your nurse will tell you how far in advance to remove the PN from the refrigerator.
 - Your medication will infuse at the correct rate if administered at room temperature. If administered while cold, you will feel the medication as it infuses AND the infusion may take longer. Infusing cold medication could also lead to the pump alarming. Ask your home infusion nurse or pharmacist for help.
 - Do NOT attempt to warm the medication by other means.
 - PN is good for no more than 24 hours at room temperature.

STEP 2: PREPARE SUPPLIES (CONTINUED)

- Compare your PN with your orders to confirm the following information before the infusion:
- Medication has my name and date of birth.
 - Medication name is correct.
 - Medication dose is correct.
 - Medication is not expired.
 - *If any of this information is incorrect, stop and call your home infusion pharmacist immediately.*

- WASH YOUR HANDS.**
- Soap and water are preferred, hand sanitizer optional if soap and water are not available.
 - Wash for 20 seconds (hum the Happy Birthday song twice) or rub with hand sanitizer until your hands are dry.

- Clean your workspace and SAS or SASH mat with cleaning solution or bleach and paper towels, alcohol wipes, or sanitizer wipes.
- Try to select a dry, hard work surface to set up your medication and supplies.
 - Place the PN bag and additives on your SAS or SASH mat where indicated.

- WASH YOUR HANDS.**
- Soap and water preferred (hand sanitizer optional).
 - Wash for 20 seconds (hum the Happy Birthday song twice) or rub with hand sanitizer until your hands are dry.

- Gather the following supplies and place on your workspace (do not put on top of your SAS or SASH mat yet):
- **5–10** alcohol pads (to clean your supplies and hub (IV-line tip))
 - **2** saline syringes (to clear your IV line and remove any leftover medication)
 - **1** heparin syringe (to clear your IV line and prevent blockage; your nurse will tell you if you need it)
 - **1** electronic pump (to facilitate your infusion)
 - **1** carrier pouch (to place and carry your pump during your infusions)
 - **1** infusion pump tubing (to spike your bag and infuse)
 - **1** trash bag (small grocery bag will do for trash collection)
 - **1** sharps container
 - *You will need to obtain additional supply items (syringe and needles) based on the below chart*

Additive Name	Frequency of Use	Syringe Size	Needle to Add	Room Temp/Refrigerated

- Arrange your alcohol pads, wrapped prefilled syringes and tubing above your SAS or SASH mat in their respective location. Do not place any of these items on top of your SAS or SASH mat yet.
- “S” = Saline
 - “A” = Administer or Antibiotic (includes your medication bag and attached tubing)
 - “S” = Saline
 - “H” = Heparin (if prescribed; most people will not need this)

- WASH YOUR HANDS.**
- Soap and water are preferred, hand sanitizer optional if soap and water are not available.
 - Wash for 20 seconds (hum the Happy Birthday song twice) or rub with hand sanitizer until your hands are dry.

- Unwrap both saline syringes and the heparin syringe (if prescribed). Place the unwrapped prefilled syringes in the correct location **on top of** your SAS or SASH mat.

STEP 2: PREPARE SUPPLIES (CONTINUED)

- Prepare your PN Bag
 - Remove your medication bag from the plastic bag if it is in one.
 - Find the inject port on the PN bag (usually to the far right and often covered with tin foil). You will use this port to add the additives. Remove the foil and swab the end with a new alcohol pad for 15 seconds.
 - Place the unwrapped medication bag above the A of your mat. Put a clean alcohol pad under the port to keep it clean.
 - Remove the pump tubing from the wrapping and place with the PN bag.
 - Place your carrying bag to the side.
- Check your infusion pump. Inspect for any obvious issues. Check the battery life on the pump by turning it on and then turning it back off. Set the pump close to your PN bag and tubing.
- WASH YOUR HANDS.**
 - Soap and water are preferred, hand sanitizer optional if soap and water are not available.
 - Wash for 20 seconds (hum the Happy Birthday song twice) or rub with hand sanitizer until your hands are dry.

Prepare PN,
additives &
pump

Review
your
orders

Draw up
each
additive

Inject into
PN

**WASH
HANDS**

Spike your
PN

Place
tubing in
the pump

Prime
your
tubing

Flush line
and start
PN

STEP 3: PREPARE PN, ADDITIVES & PUMP

- Double check your additives
 - Review your orders to be certain you have the correct additives for your infusion day.
 - Double check you have the correct supplies for each additive.
- WASH YOUR HANDS.**
 - Soap and water are preferred, hand sanitizer optional if soap and water are not available.
 - Wash for 20 seconds (hum the Happy Birthday song twice) or rub with hand sanitizer until your hands are dry.
- It is best practice to draw up one additive at a time and inject it into the PN bag. Start with the additive with the smallest volume.
- Draw up each additive and inject into the PN (If none ordered, skip this section).
 - Your orders will have specific instructions on each additive and the prescribed dose. Refer to your orders for the volume to draw up with each syringe.
 - Remove the plastic caps from the additive vials and discard.
 - Clean the top of each vial with a separate alcohol pad by swiping the pad across the top of the vial.
 - Allow to dry for 15 seconds.
 - Open the packaging of your syringe and remove the syringe.
 - If your syringe does not include a needle, remove a new clean needle from its packaging and place on the end of the syringe. Screw the needle onto end of the syringe.
 - If multi-vitamins are ordered and provided in two vials, you will only need one syringe for both vials.
 - Remove the cap on the needle. Do not touch the needle itself.
 - Pull back on the plunger of the syringe the volume you intend to withdraw from the vial.
 - Place the tip of the needle directly over the center of the vial and gently push the needle into the vial.
 - Invert the vial so that the vial is upside down and above the syringe. Slowly push the plunger injecting some of the air into the vial.
 - Make sure the tip of the needle is in the fluid. Pull back on the plunger. Be sure to remove the total volume based on the order.
 - When you have the proper amount of drug in the syringe, pull the needle from the vial.
 - If you are drawing up the multi-vial multi-vitamin, withdraw an additional 5 ml of air and follow the same steps as you did for the first vial.
 - When you have drawn up all the medication you intend, remove any air left in the syringe by holding the syringe with the needle facing upwards. Push the plunger in slowly until no air is left in the syringe.

- Locate the cleaned valve on your PN bag. Grasp the valve without touching the end of the valve. Insert your needle into the center of the valve. Do not push the needle through the sides of the bag. Push the fluid in the syringe into the TPN bag by pushing the plunger in until the syringe is empty.
- Remove the empty needle and syringe from the PN bag and dispose in the sharps container.

Once all the additives have been added to the PN bag, gently swirl the bag massaging it with your hands to be sure it is mixed. (DO NOT SHAKE)

WASH YOUR HANDS.

- Soap and water are preferred, hand sanitizer optional if soap and water are not available.
- Wash for 20 seconds (hum the Happy Birthday song twice) or rub with hand sanitizer until your hands are dry.

'Spike the bag' to attach the medication tubing to your medication bag:

- Pull the plastic protective tab off the medication bag. Just pull. Do not twist.
- Check to be certain all clamps are clamped on your tubing.
- Remove the clear protective cap from the spike (located on your medication tubing).
 - Make sure the spike does not touch anything. If the spike touches anything, throw that tubing set away and begin again with a new tubing set.
- Insert the tubing spike into the medication bag (where the tab was removed).
 - Use a "push and twist" motion (like putting a key into an ignition).
 - You will know the bag is spiked when you see the tip of the tubing spike in the medication bag and fluid is in the drip chamber of the tubing.

Load the pump with a new medication cassette and bag:

- Turn on the pump based on your nurse's or pharmacist's instructions. Load the pump with the medication and the tubing based on your nurse's or pharmacist's instructions.

Open all clamps on your tubing.

Prime the tubing.

- Invert the PN bag so the tubing exiting the bag is at the top. Inspect the bag and pinch all free air so that any remaining air in the bag is at the top of the bag. You want to prime this air through the tubing and out the other end.
- Follow your nurse's or pharmacist's instructions about how to use the pump to prime the tubing.
- Hold the end of the tubing over the trash bag. Continue to prime the tubing until the fluid begins to run out of the end of the tubing. Stop the priming at this point based on your nurse's or pharmacist's instructions.
- Replace the cap on the end of the tubing careful not to contaminate the end of the tubing or the inside of the cap.

Be sure you have removed all air from the line to prevent unnecessary alarms. Follow your nurse

- Follow your nurse's or pharmacist's instructions about how to remove the cassette from the pump.
- Inspect the cassette for trapped air specifically where the tubing is latched to the cassette. With your finger, flick the area to allow the air to escape careful to be sure the escaped air rises towards the end of the tubing and not the bag.
- Once you are satisfied that any trapped air has been released, reattach the cassette to the pump based on your nurse's or pharmacist's instructions.
- Remove the protective cap from the end of the tubing and place on your clean surface with the open end up. Do not touch the inside of the cap as this needs to be sterile. Prime the pump again for 1-2 ml based on your nurse's or pharmacist's instructions.
- Replace the protective cap on the end of the tubing and sit the pump, bag, and tubing on your clean work area.

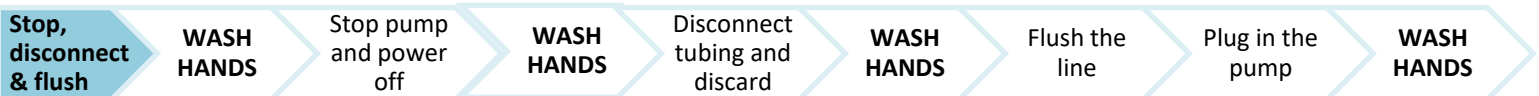
WASH YOUR HANDS.

- Soap and water are preferred, hand sanitizer optional if soap and water are not available.
- Wash for 20 seconds (hum the Happy Birthday song twice) or rub with hand sanitizer until your hands are dry.

Sit down to prepare your IV line.

STEP 3: PREPARE PN, ADDITIVES & PUMP (CONTINUED)

- Check the unwrapped saline syringe on the first “S” of your SAS or SASH mat for any air bubbles.
 - Remove the protective cap from the syringe and place the cap flat side down on your SAS or SASH mat.
 - Hold the syringe with the end up and plunger at the bottom.
 - Pull back on the syringe plunger slightly to break the seal. You will be able to see the air bubble in the syringe.
 - Slowly push the plunger up to let the air bubble out. Keep holding onto the saline syringe.
- ‘Scrub the hub.’ Clean the end cap (hub) by wrapping the alcohol pad over and around the sides for at least 15 seconds.
 - Use the first alcohol pad above your SAS or SASH mat (the one before the first “S”).
 - Once you have cleaned the hub, hold the hub with two fingers. Keep the hub from touching anything else.
 - If your hub touches anything, **wash your hands** and scrub the hub again with a new alcohol pad.
- Flush your IV line with saline (“pulse flush”):
 - Hold the hub in one hand and the saline syringe in the other.
 - Screw the syringe onto the hub using a “push and twist” motion. It is like putting a key into an ignition.
 - Once the syringe is connected to the hub, open the clamp on your IV line and slowly push 1 to 2 mL of saline at a time. Stop and push 1 to 2 mL more. Repeat this “pulse flush” until the saline syringe is empty.
 - If you have trouble flushing your IV-line, double check to make sure the clamp on your IV line is open. *If your clamp is open and you are still having trouble, stop and call your home infusion nurse.*
- Remove the empty saline syringe from your IV line. Throw it away.
 - Do not remove the end cap from the hub of your IV line. Be sure you are holding the IV line by the end cap (the blue device) to prevent from unscrewing the cap from your line.
- ‘Scrub the hub.’ Clean the end cap (hub) by wrapping the alcohol pad over and around the sides for at least 15 seconds.
 - Use the first alcohol pad above your SAS or SASH mat (the one before the first “S”).
 - Once you have cleaned the hub, hold the hub with two fingers. Keep the hub from touching anything else.
 - If your hub touches anything, **wash your hands** and scrub the hub again with a new alcohol pad.
- Connect your medication tubing to the hub of your IV line by doing the following:
 - Hold the hub in one hand. Find the end of the medication tubing. Remove the medication tubing cap.
 - Connect the medication tubing to the hub of your IV line. Use the same “push and twist” motion as before.
- Check your settings and start the infusion based on your nurse’s or pharmacist’s instructions.
- Place the pump and PN bag into the carry pouch provided.



STEP 4: STOP, DISCONNECT, AND FLUSH

- Your pump will beep when the infusion is complete. You should immediately check the pump bag to be sure the infusion is complete. If it is not, please contact your home infusion provider for additional assistance.
 - The pump will alarm when there is approximately 5 ml of fluid remaining in the pump. When the pump beeps, select “Acknowledge” to clear the alarm and complete the infusion.
- WASH YOUR HANDS.**
 - Soap and water are preferred, hand sanitizer optional if soap and water are not available.
 - Wash for 20 seconds (hum the Happy Birthday song twice) or rub with hand sanitizer until your hands are dry.
- Stop the pump and turn it off based on your nurse’s or pharmacist’s instructions.
- WASH YOUR HANDS.**
 - Soap and water are preferred, hand sanitizer optional if soap and water are not available.
 - Wash for 20 seconds (hum the Happy Birthday song twice) or rub with hand sanitizer until your hands are dry.

STEP 4: STOP, DISCONNECT, AND FLUSH (CONTINUED)

- Next, you need to disconnect your medication tubing (attached to your medication bag) from your IV line. Grasp the end cap (hub) of your IV line with one hand while using your other hand to unscrew the medication tubing. Do this until it is disconnected from the hub. Do not remove the hub from your IV line.
 - The end cap is also known as the hub. It is located at the tip of your IV line. The hub protects your IV line from bacteria.
 - Do not remove the hub from your IV line.

- Remove the used cassette based on your nurse's or pharmacist's instructions.
 - Throw the used cassette and bag in the trash bag.

WASH YOUR HANDS.

- Soap and water are preferred, hand sanitizer optional if soap and water are not available.
- Wash for 20 seconds (hum the Happy Birthday song twice) or rub with hand sanitizer until your hands are dry.

- Check the unwrapped saline syringe on the second "S" of your SAS or SASH mat for any air bubbles.
 - Remove the protective cap from the syringe and place the cap flat side down on your SAS or SASH mat.
 - Hold the syringe with the end up and plunger at the bottom.
 - Pull back on the syringe plunger slightly to break the seal. You will be able to see the air bubble in the syringe.
 - Slowly push the plunger up to let the air bubble out. Keep holding onto the saline syringe.

- 'Scrub the hub.' Clean the end cap (hub) by wrapping the alcohol pad over and around the sides for at least 15 seconds.
 - Use the first alcohol pad above your SAS or SASH mat (the one before the first "S").
 - Once you have cleaned the hub, hold the hub with two fingers. Keep the hub from touching anything else.
 - If your hub touches anything, **wash your hands** and scrub the hub again with a new alcohol pad.

- Flush your IV line with saline ("pulse flush"):
 - Hold the hub in one hand and the saline syringe in the other.
 - Screw the syringe onto the hub using a "push and twist" motion. It is like putting a key into an ignition.
 - Once the syringe is connected to the hub, open the clamp on your IV line and slowly push 1 to 2 mL of saline at a time. Stop and push 1 to 2 mL more. Repeat this "pulse flush" until the saline syringe is empty.
 - If you have trouble flushing your IV-line, double check to make sure the clamp on your IV line is open. *If your clamp is open and you are still having trouble, stop and call your home infusion nurse.*

- If you have been told to use heparin, check the heparin syringe on the "H" of your SAS or SASH mat for any air bubbles.
 - Remove the protective cap from the heparin syringe and place the cap flat side down on your SAS or SASH mat.
 - Hold the heparin syringe with the end up and plunger at the bottom.
 - Pull back on the heparin syringe plunger slightly to break the seal. You will be able to see the air bubble in the syringe.
 - Slowly push the plunger up to let the air bubble out. Keep holding onto the heparin syringe.

- If you have been told to use heparin, 'scrub the hub' of your IV line with a NEW alcohol pad for at least 15 seconds.
 - Use an alcohol pad to scrub the end of the port tubing.
 - Once you have cleaned the hub, hold the hub with two fingers. Keep the hub from touching anything else.
 - If your hub touches anything, **wash your hands** and scrub the hub again with a new alcohol pad.

- If you have been told to use heparin, flush your IV line with heparin ("pulse flush"):
 - Hold the hub in one hand and the heparin syringe in the other.
 - Remove the protective cover on the heparin syringe. Screw the heparin syringe onto the hub using a "push and twist" motion. It is like putting a key into an ignition.
 - Once the heparin syringe is connected to the hub, open the clamp on your IV line and slowly push 1 to 2 mL of saline at a time. Stop and push 1 to 2 mL more. Repeat this "pulse flush" until the heparin syringe is empty. Flushing this way each time helps keep your IV line from getting clogged.

- Remove the empty syringe from your IV line. Throw it away.

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