Instruction Guide

Total Parenteral Nutrition Therapy at Home
Your Nutrition Therapy

Our goal at Coram CVS/specialty infusion services is to help you on your path to better health. We can accomplish this together while you are receiving total parenteral nutrition (TPN) at home, through open communication and vigilant monitoring of your progress and tolerance to your therapy.

The educational information provided to you here is an important resource for your reference. Your Registered Nurse will provide you with the education you need to be comfortable with administering your therapy safely and effectively. Other great patient resources, including video tutorials, can be found on www.coramhc.com/patients/education/default.aspx. Our experienced clinicians are available to assist you any time, day or night, and we are only a phone call away.

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Storage and Handling of TPN

All TPN bags should be stored in the refrigerator. The refrigerator temperature should be between 36°F and 46°F. Make sure there is enough storage space in the refrigerator and that it is clean. The shelves should be cleaned with either soap and water or a bleach solution.

Warming the Formula Safely

Remove the TPN formula from the refrigerator and place it on a clean counter-top approximately 2–3 hours before infusing to allow the formula to come to room temperature.

Do NOT:
• place the formula in direct sunlight
• microwave
• heat in an oven
• place in warm water

Instead, wait for it to warm to room temperature on its own in 2–3 hours. The time you start your infusion is not as critical as ensuring that the TPN is at room temperature. It is better to simply delay the start of the infusion by a few hours and safely warm the TPN solution.

If you are going out and want to hook up when you get home, you can take the TPN bag out of the refrigerator as much as 4–6 hours in advance. TPN formula is good for 24 hours at room temperature. If it takes 2–3 hours to get to room temperature, you still have a full 24 hours from that point.

Infusing cold TPN straight from the refrigerator is not harmful, but it can be uncomfortable. It can feel similar to eating ice cream too fast, which can cause headaches and chills.

Emergencies

It is important to know what to do if you have a loss of power or an emergency. If the power goes off, keep the refrigerator door closed. Start counting when the power has been off for 6 hours. You have 24 hours from that point. If you do not have a back-up power source, you may want to locate a nearby place to store your formula with someone who can offer a clean, safe storage place.

Follow the guidelines in your Patient Resource Guide for more specific information on an emergency or a disaster.
Drawing Up Medication or Multivitamins from a Vial or Ampule

Preparation
1. Refer to your Patient Resource Guide and medication label. These materials can provide details on how to handle and store medication.
2. Clean your work area.
3. Wash your hands thoroughly for 20 seconds using antibacterial soap and water. Remove any dirt from under your nails. Dry your hands with a paper towel or clean (unused) hand towel. If you do not have access to soap and water, use an alcohol-based hand sanitizer.

Gathering Your Supplies
Gather the following items:
• Medication vial(s) or ampule(s)
• Syringe with needle
• Filter needle/straw needle, and extra needle (ampule only)
• Antiseptic wipes
• Sharps container

Inspecting the Medication Label and Vial/Ampule
Closely check these items for the following:
• Correct name
• Correct rate and dose
• Expiration date
• No particles in the solution

Drawing Up Your Medication
If you are using a vial:
1. Flip the cap off of the medication vial.
2. Clean the top of the vial with an antiseptic wipe for 15 seconds.
3. Select a 10cc syringe from your supplies. Remove the syringe and needle from the package. Remove the cover from the syringe needle. The tip of the syringe is sterile; do not touch or let it touch any surface. If it does, discard this syringe and use a new one. Twist the needle to secure it onto the syringe.
4. Verify the volume of fluid in the vial. Pull back on the syringe plunger to add air to the syringe. Draw up an equal amount of air into the syringe. The air amount should be equal to the amount of medication to be withdrawn from the vial.
5. Insert the needle into the center of the vial. Gently pull back on the syringe plunger and slowly push air into the vial.
6. To withdraw the medication ordered, turn the vial upside down and keep the needle point towards the bottom of the vial to remove all the fluid. Pull back on the plunger.
7. Remove the syringe from the vial once the correct amount of medication is in the syringe.
8. Remove all air from the syringe. To do this, gently tap on the syringe and push in the plunger until all the air is pushed out of the syringe.
9. If you are adding multivitamins to your TPN bag, there will be two vials. You may use the same syringe for each vial.
If you are using an ampule:
1. Gently tap the top of the ampule with your finger. (This helps make sure that all the medication is in the bottom part of the ampule.)
2. Wrap an antiseptic wipe around the top of the ampule.
3. Snap off the top of the ampule using your finger and thumb. (Make sure to snap away from you.) Discard the top into the sharps container. Place the medication ampule upright on a flat surface.
4. Attach the filter/straw needle to the syringe by twisting clockwise. If you are using a filter needle, remove the cover.
5. Insert the filter/straw needle into the opening of the ampule.
6. Draw back on the plunger to the amount of medication ordered.
7. Remove the syringe from the ampule.
8. Remove all air from the syringe. To do this, gently tap on the syringe and push in the plunger until all the air is pushed out of syringe.
9. Remove the filter/straw from the syringe. Replace it with a new non-filter needle before adding the medication to the bag.

Note: For more information, refer to Coram’s patient education video Drawing Up Medication from an Ampule on www.coramhc.com/patients/education/default.aspx.

Inserting Additives into the Medication Bag
1. Before injecting each additive, scrub the injection port with an antiseptic wipe for 15 seconds.
2. Insert the syringe needle slowly and directly into the center of the injection port. Be careful not to puncture the bag. If you puncture the bag, do not use it. Call your Coram clinician.
3. Push in the syringe plunger to inject medication into the bag.
4. Remove the syringe and discard it into the sharps container.
5. Gently knead the bag to mix the additives with the medication.

Home Monitoring for TPN

While you are on TPN, your doctor may want you to monitor your weight, blood sugar, temperature, and intake/output on the document provided in the TPN Home Monitoring Record you received.

Weight Monitoring
You should weigh yourself around the same time each day on the same scale. Your Coram clinician or doctor will provide you with guidelines on how often you should weigh yourself and when to report weight changes.

Temperature Monitoring
You should take and record your temperature around the same time each day or if you are not feeling well. It is important to wait at least 15 minutes after eating, drinking, or smoking to avoid false readings. Contact your Coram clinician or doctor if you have a temperature greater than 100.5° F as this may be a sign of an infection.
Blood Sugar Monitoring

Both high blood sugar and low blood sugar can cause health problems; both need to be discussed with your Coram clinician so adjustments can be made to the TPN formula. Record your blood sugar as ordered by your Coram clinician or doctor. Your clinician will show you how to use the glucose monitor equipment if ordered. It is important to call your Coram clinician if your blood sugar level is higher than 150 mg/dL (130 mg/dL if pregnant) or lower than 70 mg/dL or if you experience symptoms of hyperglycemia (high blood sugar) or hypoglycemia (low blood sugar) or as indicated by your doctor.

Intake Monitoring

You may be asked by your Coram clinician or doctor to measure the amount of liquids that you take in through eating, drinking and IV fluids, such as your TPN and liquids.

Output Monitoring

You may be asked by your Coram clinician or doctor to monitor the amount of liquids you excrete such as vomit, urine, fistula drainage and liquid stools.

TPN Troubleshooting

You most likely will not have any complications with your TPN therapy. But if you do, most can be handled safely at home. It is important that you recognize possible complications can occur and know what action to take to resolve them. Your Coram clinician is available to assist you 24 hours a day, 7 days a week.

Problem: Solution is not infusing
Possible Cause:
• Catheter or tubing blockage
• Pump problem
What to Do:
• Look at your catheter and pump tubing for any kinks and straighten if necessary.
• Make sure all clamps on the catheter and tubing are open.
• Check that the bag is spiked completely.
• Check that the infusion pump is turned on.
• If you think something is wrong with your pump, call your Coram clinician.

Problem: Fever and chills during infusion of TPN solution
Possible Cause:
• TPN solution is not at room temperature
• Possible infection
What to Do:
• Stop TPN infusion and flush your catheter as directed. Let your TPN warm to room temperature, then restart your infusion.
• Do not warm the TPN bag by placing it in the microwave, oven, warm water, or any other heat source warmer than room temperature.
• Observe the catheter site for signs and symptoms of infection (redness, swelling or drainage).
If you have a temperature of 100.5°F or greater call your doctor or Coram clinician immediately.
Problem: **Leaking of fluid**

**Possible Cause:**
- Loose connection
- Injection cap may be damaged or leaking
- Catheter may be cracked or damaged

**What to Do:**
- Make sure the connection between the tubing and injection cap is secure.
- Change injection cap as directed or call your Coram clinician for assistance.
- If the leak is coming from the catheter exit site or anywhere on your catheter, stop the infusion and clamp the catheter **ABOVE** the leak. **Contact your doctor or Coram clinician immediately.**

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Problem: **Hyperglycemia**

*High blood sugar = a level greater than 150 mg/dL. If you are pregnant, high blood sugar level greater than 130 mg/dL.*

**Signs and symptoms of Hyperglycemia include:**
- Weakness
- Nausea
- Excessive thirst, urination or appetite
- Headache
- Irritability
- Abdominal pain
- Fruity-smelling breath
- Unconsciousness

**Possible Cause:**
Blood sugar level is too high or the insulin being produced by your body is not enough for the level of sugar in your blood.

**What to Do:**
Test and record your blood sugar level. Administer insulin as directed if ordered by your doctor. Call your Coram clinician or doctor with this information immediately.

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Problem: **Hypoglycemia**

*Low blood sugar = a level less than 70mg/dL or if you experience hypoglycemic symptoms.*

**Signs and symptoms of Hypoglycemia include:**
- Sweating
- Tingling in the fingers or toes
- Nausea
- Dizziness
- Headache
- Paleness
- Feeling of nervousness
- Shakiness
- Trembling
- Irritability
- Personality change
- Drowsiness in children
- Blurred vision
- Hunger
- Unconsciousness

**Possible Cause:**
Blood sugar level is too low or TPN solution may have been stopped too abruptly or insulin is still being produced by your body at high levels after the TPN is stopped.

**What to Do:**
Test and record your blood sugar level. If you can eat or drink something with sugar, such as candy or fruit juice. If you are not able to eat or drink, place table sugar with a small amount of water or cake decorating gel on your tongue. Call your Coram clinician or doctor with this information immediately.
Problem: **Fluid overload**
Signs and symptoms of **fluid overload** include:
- Swelling of feet, ankles or abdomen
- High blood pressure
- Shortness of breath while performing usual activities

**Possible Cause:**
Retention of fluid or extra salt in the body

**What to Do:**
Call your Coram clinician or doctor immediately with this information.

Problem: **Nutritional imbalances**
Signs and symptoms of **nutritional imbalances** include:
- Dry mouth
- Muscle cramps
- Headaches
- Any unusual feeling or change in physical status
- Bone pain
- Skin changes (dryness, rash)
- Excessive hair loss
- Taste changes
- Excessive bruising
- Change in mental status
- Heart fluttering

**Possible Cause:**
May be caused by many different factors, including formulation of your TPN solution.

**What to Do:**
Call your Coram clinician or doctor immediately if you have any of these symptoms. It may require changes to your TPN solution.

Other great patient resources, including video tutorials, can be found on [www.coramhc.com/patients/education](http://www.coramhc.com/patients/education).