



Total Parenteral Nutrition Resource Guide

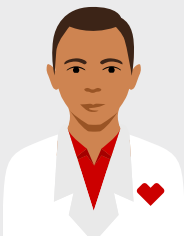
Coram[®]

♥CVS specialty infusion services

Home TPN Therapy: How to Administer it Safely and Effectively

Our goal at Coram® CVS Specialty® Infusion Services (Coram) is to help you on your path to better health. We can do this together while you receive total parenteral nutrition (TPN) at home, through open communication and careful monitoring of how well you're doing on your therapy.

To help, we've created this home TPN resource with information you and your caregivers can use. Your entire Coram care team and infusion nurse will also give you the education you need to be comfortable administering your TPN therapy safely and effectively. Find other great resources at **Coramhc.com**.



Our experienced care team of dietitians, nurses and pharmacists are ready to help you any time, day or night. We're only a phone call away. Contact your local branch.

Storage and Handling	3
Drawing Medication or Multivitamins from a Vial or Ampule	4
Home Monitoring	6
Troubleshooting	7
Keeping Your Catheter Safe.....	11

Storage and Handling

All TPN formula bags should be stored in the refrigerator. Follow these safe storage guidelines:

- Keep refrigerator temperature between 36 F and 46 F
- Make sure there's enough space in the refrigerator
- Make sure it's clean. Clean the shelves with soap and water or a bleach solution
- Store bags on the top shelf to keep food or drinks from spilling on them

Warming the Formula Safely

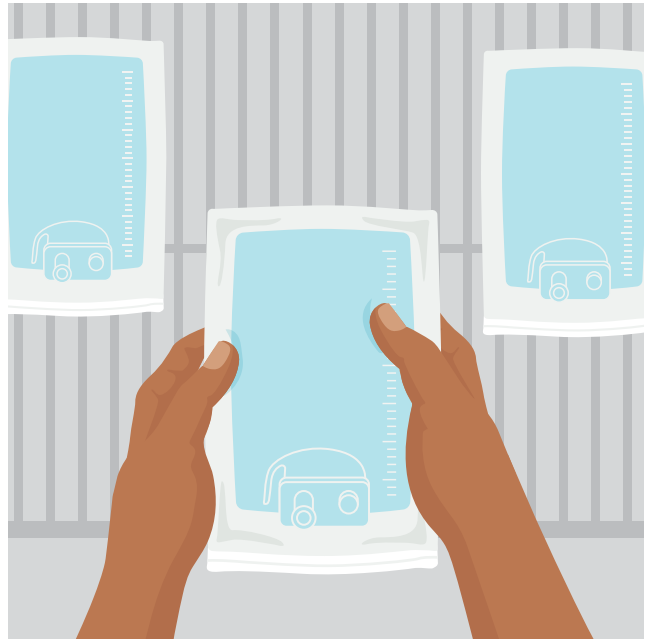
Take the TPN formula from the refrigerator. Let it warm by placing it on a clean countertop about two to three hours before infusing. This allows the formula to come to room temperature.

Do **NOT** try to warm the formula up faster in any way. So, do **NOT**:

- Place the formula in direct sunlight
- Microwave the formula
- Heat the formula in an oven
- Place the formula in warm water

Again, wait for it to warm to room temperature on its own for two to three hours. The time when you start your infusion isn't as important as making sure the TPN is at room temperature. It's better to safely warm the TPN solution and start the infusion a few hours later.

When infusing TPN with lipids (white bag), be sure to use the correct tubing with the 1.2 micron filter.



If you're leaving your home and want to infuse when you get back, you can take the bag out of the refrigerator as much as four to six hours in advance. TPN formula is good for 24 hours at room temperature. So, if you remove the formula and it takes two to three hours to warm up, you have 24 hours more to infuse.

It isn't harmful to infuse cold TPN straight from the refrigerator. But it can be uncomfortable. It can feel like eating ice cream too fast, which can cause headaches and chills.

Do **NOT** use your TPN if you see:

- Clumping of fats (lipids)
- Fats floating to the top of the bag (creaming)
- Separation of fats or particles floating in the solution

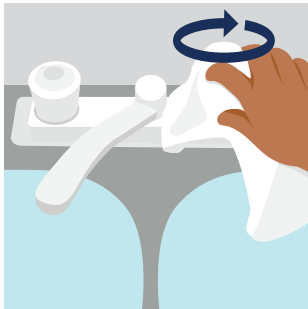
You'll also want to check your TPN bag and labels for the correct patient name, correct dose, expiration date and correct solution.

Drawing Medication or Multivitamins from a Vial or Ampule

Follow these five steps to add medication or other additives to your TPN formula.

1. Get Prepared

- Check your Patient Resource Guide and medication label. These materials go into detail on how to handle and store medication.
- Clean your work area.
- Wash your hands well for 20 seconds using antibacterial soap and water. Clean 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.



2. Gather Your Supplies

Gather these items:

- Medication vial(s) or ampule(s)
- Syringe with needle
- Filter needle, and extra needle (ampule only)
- Alcohol pads
- Sharps container

3. Inspect the Medication Label and Vial or Ampule

Closely check these items for the following:

- Correct name
- Correct dose
- Expiration date
- No particles in the solution
- Sharps container

4. Draw Up Your Medication

If you use a vial:

1. Flip the cap off of the medication vial.
2. Clean the top of the vial with an alcohol pad for 15 seconds.
3. Pick a syringe from your supplies as instructed. There may be different size syringes that are used for different medications. Take the syringe with the needle out of the package.
4. While holding the syringe, twist the needle clockwise to secure. Take the cover off the syringe needle. The tip of the syringe is sterile; don't touch it or let it touch any surface. If it does, throw away the syringe and use a new one.

5. Pull back on the syringe to draw air into the syringe that is equal to the volume of fluid to be withdrawn from the vial. For example, if you're drawing up 5 mL of medication, draw up 5 mL of air in the same syringe first.
 6. Insert the needle into the center of the vial. Gently push on the syringe to put air into the vial. Do not take the syringe needle out of the vial.
 7. To withdraw the medication ordered by your doctor, turn the vial upside down and keep the needle point towards the bottom of the vial. Pull back on the plunger to remove the amount of fluid that equals the dose of medication your doctor prescribed.
 8. Pull the syringe from the vial once the right amount of medication is in the syringe.
 9. Remove all air from the syringe. To do this, hold the syringe with the needle pointing straight up. Gently tap on the syringe to remove any bubbles and then push the plunger until all the air is removed.
 10. If you're adding multivitamins to your TPN bag, there will be two vials. You may use the same syringe for each vial.
4. Attach the filter needle to the syringe by twisting clockwise. Take the cover off.
 5. Insert the filter 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. To remove all of the air from the syringe, hold the syringe with the needle pointing straight up. Gently tap on the syringe to remove any bubbles and then push the plunger until all air is removed.
 9. Carefully place the clear cover back onto the filter needle. Then remove the filter needle from the syringe by twisting counter-clockwise.
 10. Place a new non-filter needle onto the end of the syringe before adding medication to the bag.

5. Insert Additives into the Medication Bag (if needed)

If you use 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. Clean the top of the ampule with an alcohol pad for 15 seconds. Then wrap a second, new alcohol pad 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.) Throw away the top into the Sharps container. Place the medication ampule upright on a flat surface.
1. Before you inject each additive, scrub the injection port with an alcohol pad for 15 seconds.
 2. Insert the syringe needle slowly and directly into the rubber end of the injection port. Be careful not to puncture the bag. If you puncture the bag, do not use it. Call your Coram care team or nurse.
 3. Push in the syringe plunger to inject medication into the bag.
 4. Remove the syringe and throw it away into the Sharps container.
 5. Gently knead the bag to mix the additives with the TPN medication.

Home Monitoring

While you're on TPN therapy, your doctor may want you to track your weight, blood sugar, temperature and intake/output. You can record all this in a notebook for your doctor and home nutrition team. Here's what you need to know.

Weight

You should weigh yourself around the same time each day on the same scale. Your Coram care team, nurse or doctor will give you guidelines on:

- How often you should weigh yourself
- When to tell them about weight changes

Temperature

Take and write down your temperature around the same time each day. And take it any time you don't feel well. Wait at least 15 minutes after eating, drinking or smoking to avoid false readings. Contact your Coram care team, nurse or doctor if you have a temperature greater than 100.5 F. This may be a sign of an infection.

Blood Sugar

Both high blood sugar and low blood sugar can cause health problems. Discuss both with your Coram care team or nurse and doctor so changes can be made to the TPN formula. Write down your blood sugar as recommended by your Coram care team, nurse or doctor. Your nurse will show you how

to use the glucose monitor equipment if it is ordered. Always call your Coram care team or nurse as your doctor has told you and if:

- Your blood sugar level is higher than 140 mg/dL (120 mg/dL if pregnant) or lower than 70 mg/dL
- You have symptoms of hyperglycemia (high blood sugar)
- You have symptoms of hypoglycemia (low blood sugar)

If you are receiving continuous parenteral nutrition infusion over 24 hours:

- Check blood sugar every 6 hours
- Keep a log of your results

If you are receiving parenteral nutrition infusion less than 24 hours:

- Check blood sugar levels 2 hours after the start of the infusion, mid-cycle and 30 minutes to 1 hour after stopping
- Keep a log of your results

Intake

Your Coram care team, nurse or doctor may ask you to track how much you take in when you eat, drink and take intravenous (IV) fluids, such as your TPN formula and other liquids.

Output

Your Coram care team, nurse or doctor may ask you to track how much liquid you excrete. This includes vomit, urine, fistula drainage, ostomy output and liquid stools, like diarrhea.

To help you keep track of this information, see page 7. You can also download this tool from coramhc.com/patients/resource-center

Home Total Parenteral Nutrition Therapy (TPN) Monitoring Log

While you're on Home Parenteral Nutrition (HPN) therapy, your doctor may want you to track your weight, blood sugar, temperature and intake/output. You can record all this information for your doctor and home nutrition team using the log below.

Week of:							
	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
Date							
Hours of infusion							
IV site changes (note any unusual issues such as redness or drainage)							
Intake (TPN, IV infusion volume, amount of liquid by mouth, feeding tube, etc.)							
Output (amount in ounces or mL, urine, stool, ostomy, fistula and/or drains)							
Temperature (same time daily, at least 15 minutes after eating, drinking or smoking)							
Weight (daily at the same time in the afternoon or 1 hour before infusion)							
Unusual symptoms (chills, nausea)							
Blood Sugar testing during TPN (for cycled TPN 2 hours after infusion initiation and 30 to 60 minutes after completion of infusion)	1 hour	1 hour	1 hour	1 hour	1 hour	1 hour	1 hour
	middle	middle	middle	middle	middle	middle	middle
	1 hour after	1 hour after	1 hour after	1 hour after	1 hour after	1 hour after	1 hour after

Troubleshooting

It's not likely that you'll have any complications with your TPN therapy. But if you do, most can be handled safely at home. It's important that you watch out for complications and know what action to take to fix them. Use the troubleshooting guide on pages 9 through 12 to help you. Your Coram care team or nurse are also ready to help you 24 hours a day, 7 days a week.

Troubleshooting Guide		
Problem	Possible Causes	What to Do
Solution is not infusing	<ul style="list-style-type: none">• Catheter or tubing blockage• Pump problem	<ul style="list-style-type: none">• Look at your catheter and pump tubing for any kinks and straighten if needed.• Make sure that you are using the correct tubing if you infuse lipids just a few days per week.• 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 or catheter, call your Coram care team or nurse.
Fever and chills during infusion	<ul style="list-style-type: none">• TPN solution is not at room temperature• Possible infection	<ul style="list-style-type: none">• Stop TPN infusion and flush your catheter as directed. Let your TPN warm to room temperature, then restart your infusion.• Don't warm the TPN bag by placing it in the microwave, oven, warm water or any other heat source warmer than room temperature.• Check the catheter site for signs and symptoms of infection (e.g., redness, swelling or drainage). If you have a temperature of 100.5 F or higher, call your doctor, Coram care team or nurse right away.

Troubleshooting Guide

Problem	Possible Causes	What to Do
<p>Leaking of fluid</p>	<ul style="list-style-type: none"> • Loose connection • Injection cap may be damaged or leaking • Catheter may be cracked or damaged 	<ul style="list-style-type: none"> • Make sure the connection between the tubing and injection cap is secure. • Change injection cap as directed or call your Coram care team or nurse for help. • If the leak is coming from the catheter exit site or anywhere on your catheter, stop the infusion and clamp the catheter between your body and the leak. Contact your doctor, Coram care team or nurse right away.
<p>Hyperglycemia (High blood sugar = a level greater than 140 mg/dL. If you are pregnant, high blood sugar level greater than 120 mg/dL)</p>	<ul style="list-style-type: none"> • Blood sugar level is too high • The insulin made by your body isn't enough for the level of sugar in your blood. • Illness-induced body stress causes your body not to use insulin well and causes your liver to release stored sugar • Some medications increase blood sugar such as steroids • Infection • Older age <p>Signs and symptoms of hyperglycemia include:</p> <ul style="list-style-type: none"> • Weakness • Nausea • Dehydration • Confusion • Excessive thirst, urination or appetite • Headache • Irritability • Abdominal pain • Fruity smelling breath • Unconsciousness 	<ul style="list-style-type: none"> • Test and write down your blood sugar level. • Administer insulin as directed if ordered by your doctor. • Call your Coram care team, nurse or doctor and give them this information right away.

Troubleshooting Guide

Problem	Possible Causes	What to Do
<p>Hypoglycemia (Low blood sugar = a level less than 70 mg/dL or if you experience hypoglycemic symptoms)</p>	<ul style="list-style-type: none"> • Blood sugar level is too low from receiving too much insulin • TPN solution may have been stopped too abruptly • Insulin is still being made by your body at high levels after the TPN is stopped <p>Signs and symptoms of hypoglycemia include:</p> <ul style="list-style-type: none"> • Sweating • Tingling in the fingers or toes • Nausea • Feeling dizzy • Headache • Looking pale • Feeling nervous • Shakiness • Trembling • Irritability • Personality change • Sleepiness in children • Blurred vision • Hunger • Loss of consciousness 	<ul style="list-style-type: none"> • Test and write down your blood sugar level. • If you are able to eat food, eat a serving of simple carbohydrates such as 1/2 cup of fruit juice or regular soda, one slice of bread or one tablespoon of maple syrup. • Glucose gel (preferred), tablets or a tablespoon of sugar mixed with a small amount of water on or under your tongue are other options, including if you have been ordered nothing by mouth (NPO). • Your blood sugar should be checked 15 minutes after treating your low blood sugar and should be treated with additional oral glucose until blood glucose is >70 mg/dL. • If you are not able to eat or drink, place table sugar with a small amount of water on or under your tongue. • Call your Coram care team, nurse or doctor and give them this information right away. • Depending on patient situation, there may be changes in your next prescription if you are having frequent episodes of hypoglycemia. Your care team may slow your rate of TPN, increase the infusion time, reduce the amount of dextrose in the TPN solution or change your insulin regimen as possible treatments to prevent hypoglycemia.

Troubleshooting Guide

Problem	Possible Causes	What to Do
<p>Fluid overload</p>	<ul style="list-style-type: none"> • Retention of fluid • Extra salt in the body • Changes in medication <p>Signs and symptoms of fluid overload:</p> <ul style="list-style-type: none"> • Swelling of feet, ankles or abdomen • High blood pressure • Shortness of breath while doing normal activities • Weight gain of 1 pound or more per day or 5 pounds or more per week 	<ul style="list-style-type: none"> • Call your Coram care team, nurse or doctor right away and give them this information.
<p>Nutrition-related symptoms</p>	<ul style="list-style-type: none"> • May be caused by many different factors related to your nutrition status <p>Signs and symptoms include:</p> <ul style="list-style-type: none"> • Dry mouth • Muscle cramps • Headaches • Any strange feeling or change in physical status • Bone pain • Skin changes (e.g., dryness, rash) • Excessive hair loss • Taste changes • Excessive bruising • Change in mental status • Heart fluttering 	<ul style="list-style-type: none"> • Call your Coram care team, nurse or doctor immediately if you have any of these symptoms. It may require changes to your TPN solution.

Keeping Your Catheter Safe

Caring for your catheter helps prevent infections and other problems. Follow these catheter care tips to infuse safely and infection free.

1. Clean your work area before you prepare your medication and supplies.
2. Wash your hands well with soap and water. Be sure to rub them together for at least 20 seconds. Do this before and after you work with your catheter, medication and supplies.
3. Scrub the catheter injection cap with an alcohol pad for 15 seconds before you connect anything.
4. Never touch the end of a sterile syringe or tubing. If you do, throw the item away.
5. Keep the catheter dressing and injection cap dry. Cover when you shower or wash, as instructed by your nurse.
6. Make sure the catheter is secured under the dressing. Do not let the extension set or tubing hang loose.
7. Don't use scissors, pins or other sharp objects near the catheter or tubing.
8. Flush your catheter before and after infusing your medications with the amount of saline ordered. Don't force if you feel resistance.
9. After the final saline flush, flush your catheter with heparin, if ordered.
10. Clamp the catheter. (Call your nurse for instructions.) The order in which you flush and clamp is important.



Watch the Coram video on how to administer your TPN at:
coramhc.com/patients/resource-center

Emergencies

It's important to know what to do if you have a power loss or an emergency. If the power goes off, keep the refrigerator door closed. Keep track of when the power goes off until it's been off for six hours. You have 24 more hours from that six-hour point. If you don't have a back-up power source, you may want to find a nearby place to store your formula. Find somewhere that has back-up power, like a generator, that can offer a clean, safe storage place. You can even ask your neighbors.

Follow the guidelines in your Infusion Patient Resource Guide for more specific details on what to do before and during an emergency or disaster.



Notes

Coram[®]

♥ **CVS** specialty infusion services

Get even more support. Find other great patient resources
at **Coramhc.com**.

Coram uses a combination disposal system that ensures incineration of contaminated sharps and other supplies contaminated with hazardous drugs. This information is not a substitute for medical advice or treatment. Talk to your doctor or health care provider about this information and any health-related questions you have. Coram assumes no liability whatsoever for the information provided or for any diagnosis or treatment made as a result of this information.

Your privacy is important to us. Our employees are trained regarding the appropriate way to handle your private health information.

©2020 Coram LLC. All rights reserved. 75-49911A 110620