

# Patient guide to **parenteral nutrition**

A guide to promote safe and comfortable  
parenteral nutrition support



Patient Guide

# Welcome

## You're ready to begin parenteral nutrition

### We support the nutrition needs of thousands of people every day

Based on your diagnosis and nutrition needs, your healthcare provider has ordered nutrition support intravenously. This is known as parenteral nutrition (PN) and is administered through an intravenous (IV) catheter placed in a large vein. Nutrients and fluids can be delivered through the catheter directly into your bloodstream.

It's estimated that about 25,000 people are receiving PN at home in the United States.<sup>1</sup> For many, Option Care Health is their first choice for this type of treatment. After all, we've been providing parenteral nutrition support for over 40 years.

### Your own team of experts

We use a multidisciplinary approach to care. Our team, which may consist of registered dietitians, nurses, infusion pharmacists and nutrition coordinators are experienced in providing PN in the home setting.

This clinical team will be involved throughout the length of your therapy and are dedicated to providing you with everything you need to make your nutrition therapy a success. They're available to answer your questions 24 hours a day, 7 days a week, 365 days a year.

### Ensuring quality care

Providing you with quality care is our primary goal. Our team will contact you each week and ask you a series of questions related to your nutrition and will proactively work to ensure that you are meeting your nutrition goals. Reach out to your local care management center if you have any questions about the services you are receiving or to your registered dietitian for specific nutrition-related questions or concerns. It is also important to discuss your infusion care with your healthcare provider during your follow-up appointments.

### Using this guide

This guide provides the information and resources you need to be successful with home parenteral nutrition (HPN). It will help you understand HPN therapy, teach you to confidently administer HPN on your own or with a caregiver's assistance and provide tips to minimize complications. We are here to support you every step of the way.

In this guide, you'll find the following important information:

- HPN basics
- Information on monitoring your progress
- The steps for ordering and managing supplies
- Tips on how to stay positive as you become accustomed to HPN
- Traveling with HPN
- HPN daily log sheet to help you stay on track with your HPN therapy and care

**Reference: 1.** Mundi MS, Pattinson A, McMahon MT, et. al. Prevalence of Home Parenteral and Enteral Nutrition in the United States. *Nutrition in Clinical Practice*. 2017;32(6):799-805.

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# Section 1

## HPN basics

Our bodies need a certain amount of nutrients daily to function properly. HPN helps you meet your needs for calories, protein, fats, vitamins, minerals and fluids.

People of all ages receive HPN. It can be given for a few months or several years, depending on your medical condition. As you are able to eat more, HPN can be slowly reduced. You may even be able to stop HPN if you can meet your nutritional needs orally. Your healthcare provider, dietitian, nurse and pharmacist will monitor you closely to make sure your needs are being met.

## HPN contents

You will receive HPN over a period lasting from 10 to 24 hours during the day and/or night, as decided by you and your care team (this will depend on overall clinical picture and what works best for you and your lifestyle). Here is a list of nutrients in HPN and the role each plays in your well-being:

**Amino acids (protein):** Protein is needed to build new tissue, repair injured tissue and support muscle, bone, nails, skin and hair.

**Dextrose (carbohydrates):** Carbohydrates are required to provide your body with the necessary energy to function.

**Lipids (fat):** Fat, like carbohydrates, provide your body with energy. Depending on your nutrition needs, you may receive fat in your HPN.

**Vitamins and minerals:** Vitamins and minerals are needed in small amounts to help the body work properly. HPN contains many of the vitamins and minerals that your body needs.

**Electrolytes:** As with vitamins and minerals, the body needs small amounts of electrolytes to work normally. The amount and type will vary according to your needs.

**Water:** Water is important to your body and HPN contains water to prevent dehydration.





# Section 2

## Preparing and administering HPN

### Nursing visits

At the beginning of your nutrition therapy, one of our specially trained nurses will teach you and/or your caregiver how to prepare and administer your HPN. You will continue to receive frequent nursing visits until you are comfortable administering therapy on your own. After that, a nurse will monitor your status during visits scheduled on a regular basis. Listen closely to all nursing instructions and do not hesitate to ask questions about anything that is unclear. This guide should be utilized as a resource for any information you need.

### The importance of proper hand washing

To help prevent infection, wash your hands thoroughly every time you use your IV line or give yourself HPN. Frequent hand washing helps keep bacteria and germs from entering your catheter, HPN and supplies. Be sure to wash your hands between every step of the process, including:

- Before gathering your supplies
- Before starting nutrition support
- Whenever you think your hands may have become contaminated

### Washing hands with soap and water

1. Wet your hands with clean, warm, running water
2. Apply soap and rub hands together to make a lather
3. Scrub every part on each hand and between fingers
4. Continue rubbing hands for 20 seconds
5. Rinse hands well under running water
6. Use a paper towel to turn off the faucet
7. Dry hands using a clean towel or air dryer



## Using a hand sanitizer

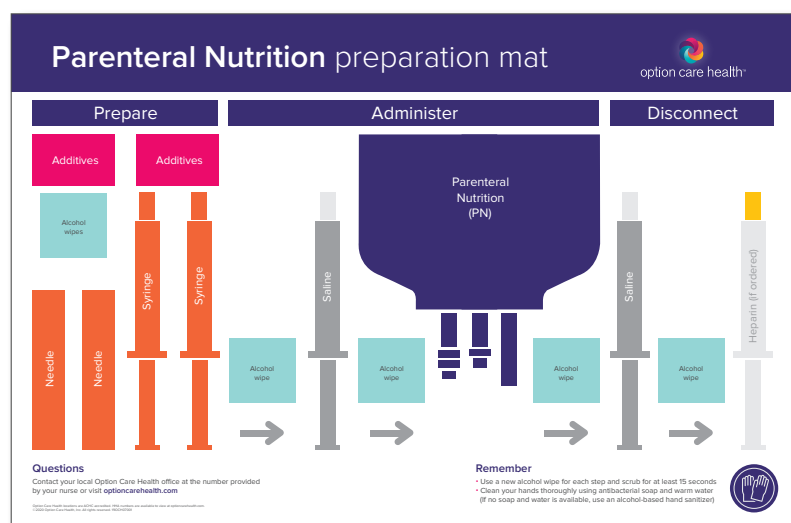
If soap and clean water are not available, use an alcohol-based hand sanitizer to clean your hands. Alcohol-based sanitizers work quickly to reduce the number of germs on the skin. When using an alcohol-based hand sanitizer:

1. Apply product to the palm of one hand
2. Rub the product over all surfaces of hands and between fingers until hands are dry

## Preparing the work area

Use the Option Care Health HPN preparation mat as a guide when preparing the work area. Choose a flat, smooth surface, such as a tray, countertop or table that is away from people, pets and other contaminants. Surfaces normally have dust and germs and should be cleaned before and after every use.

- If using the mat or a washable surface, wash the area with soap and dry with a clean paper towel
- If the surface is not washable (e.g. wood), wipe it free of dust and spread clean paper towels on the surface
- **DO NOT** cough or sneeze over the clean surface





# Preparing and administering HPN

## Additives

Certain medicines or nutrients cannot be added to the HPN bag in our pharmacy and instead must be added right before administration. These are called additives and are given to meet your medical or nutritional needs. Common examples of additives include:

### Nutrients

- Multivitamin (MVI) solutions
- Additional vitamins (such as folic acid or vitamin B12)

### Medications

- Insulin
- Famotidine
- Heparin

Your nurse will instruct you on how to add these ingredients to your HPN bag. It is best to do this just before starting your administration. This should be performed in the clean work area, after washing your hands.

## Preparing HPN bag for use

Remove your HPN bag from the refrigerator two to four hours before administration to allow it to warm to room temperature. Leave it on the clean, flat surface of your work area, away from heat or direct sunlight. NEVER speed the warming process by heating or microwaving solutions as this can make them less effective.

Collect the following supplies before starting:

- HPN preparation mat
- Alcohol wipes
- Flush syringes
- Syringe with needle(s)—10 mL and others as needed for additives
- Injection cap/needleless adaptor, if needed (usually one/week)
- Nutrients, multivitamins or medications (additives) to be added to HPN bag
- Tubing with filter
- HPN bag
- Infusion pump
- Sharps container and/or trash container

Use the following checklist to make sure the HPN bag can be used:

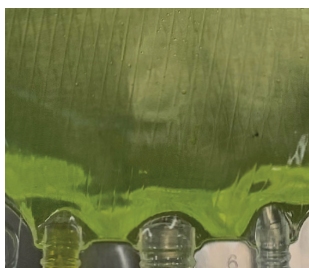
- ☐ Does the label have your name on it? If not, **DO NOT USE**. Call us for a replacement.
- ☐ Has the HPN passed its expiration date? If yes, **DO NOT USE**. Call us for a replacement.
- ☐ Does the label match your current prescription? If not, **DO NOT USE**. Call us for a replacement.
- ☐ Does the bag contain floating particles? Is it cloudy or discolored? Are there any leaks? If yes, **DO NOT USE**. Call us for a replacement.

**NOTE:** Some HPN solutions will appear a pale, clear or yellow color. HPN bags that contain fats will appear a milky color. Ask us about the color of your HPN if you have had any recent changes to your nutrition therapy. If the bag and its contents look fine, you may prepare it for use.



**Clear bag:**

Only dextrose and amino acids. Does not contain lipids.



**Yellow bag:**

Dextrose and amino acids after adding MVI. Does not contain lipids.



**Milky/white bag:**

Dextrose, amino acids and lipids.

Check the expiration date of the multivitamin vials.  
If expired, **DO NOT USE**. Call us for replacements.  
Add vitamins only to the HPN bag you are about to administer.  
Once the vitamins are mixed in the HPN bag, the solution  
will expire after 24 hours.

# Preparing and administering HPN

## Adding common nutrients to HPN bag



Fig. 1

1. Wash your hands again before starting. (See Fig. 1)



Fig. 2

2. Place the bag on a clean, flat surface of your work area. (See Fig. 2) If your HPN bag has a cover over the injection port, remove it. Scrub the end of the port with an alcohol wipe for at least **15 SECONDS** and allow to air dry. **DO NOT** let the port touch other surfaces once cleaned with alcohol.

Not all bags will come with this cover.  
If you are unsure, ask your nurse.



Fig. 3

3. Remove the protective caps from the two vitamin vials. Scrub the rubber stoppers of the vials with an alcohol wipe for **15 SECONDS** and allow to air dry. (See Fig. 3)

**DO NOT** use a vial that is missing its protective cap.  
Call us for a replacement.





Fig. 4

4. Remove the syringe from its wrapper. (See Fig. 4) Your syringe may or may not have a needle attached. If it does, twist the needle gently to tighten it. If the syringe does not have a needle attached, remove the needle from its wrapper, attach the needle to the syringe, and twist gently.



Fig. 5

5. Slowly pull back the plunger of the syringe to the 2 mL to 3 mL mark. (See Fig. 5)

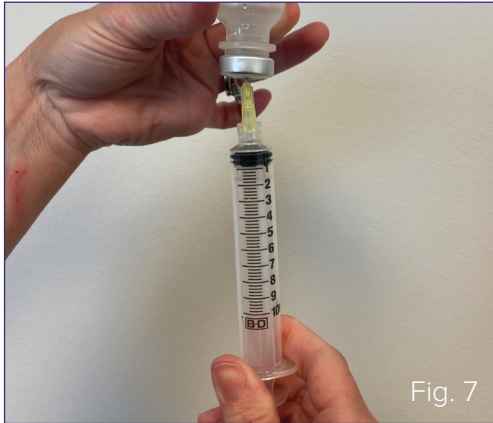


Fig. 6

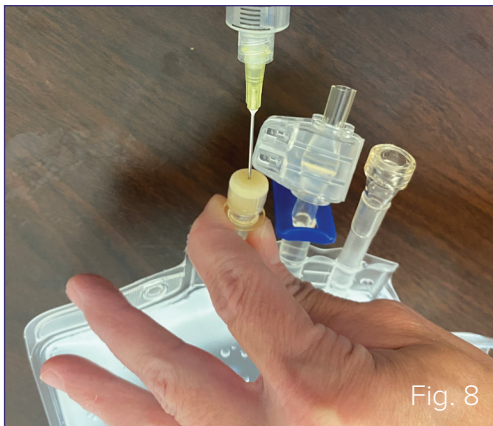
6. Insert the syringe needle straight into the rubber stopper of the first vitamin vial and carefully inject 2 mL to 3 mL of air into the vial. Add a little air at a time. (See Fig. 6)

**DO NOT** force the air in all at once.

# Preparing and administering HPN



7. Turn the vitamin vial upside down. Adjust the needle so the tip is in the fluid. Slowly withdraw all the contents into the syringe, drawing a little at a time. Be careful not to touch the needle. Repeat the steps above with the second vitamin vial, using the same syringe. (See Fig. 7)



8. Once the two vials of vitamins are drawn up into the syringe, carefully insert the syringe needle straight into the HPN bag's injection port (straight up and down, not slanted). This will prevent the bag from being punctured. If the injection port has come into contact with anything since you cleaned it with alcohol, clean again and allow to air dry (see step 2). With your thumb on the plunger, slowly inject the vitamins into the injection port of the HPN bag as instructed by your nurse. (See Fig. 8)



9. Gently swirl the HPN bag to evenly mix the vitamins into the solution. The vitamins should mix completely with the HPN and produce an even color. (See Fig. 9)

Repeat this process for any additional additives your nurse has demonstrated.







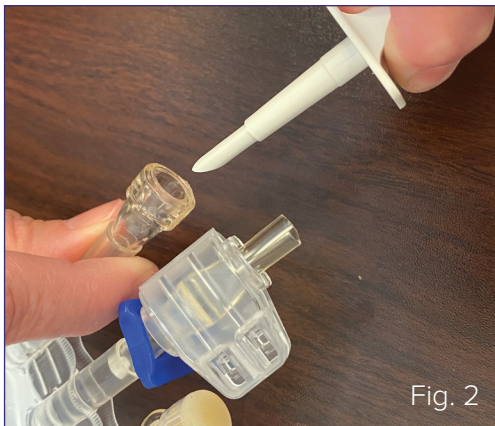
# Preparing and administering HPN

## Preparing HPN bag for Infusion



1. Remove the tubing with filter from its package and close the tubing clamp. Remove the covers from both the spikes of the HPN bag port and tubing. **DO NOT** let either of the spikes touch anything once the covers are removed. (See Fig. 1) This will help prevent an infection.

**DO NOT** recap syringe needles. Dispose of all used syringes and needles in the sharps container provided.



2. While gripping the outside of the HPN spike port with one hand, push and twist the end of tubing spike into the bag port with your other hand. (See Fig. 2)



3. Your nurse will teach you how to connect your HPN to the pump and to prime the tubing. (See Fig. 3)

**You MUST** prime the tubing before starting HPN therapy. Your pump and tubing may differ from the picture. Refer to the manufacturer's pump guide as needed.

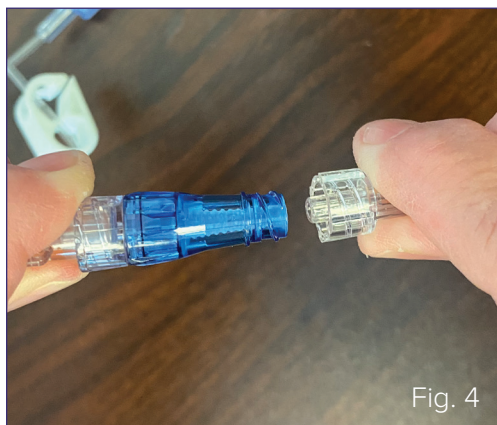


Fig. 4

4. Scrub the end of your needleless injection cap (the one that goes into your catheter) with an alcohol wipe for at least **15 SECONDS** and allow to air dry. Remove the protective cap from the end of the HPN bag tubing and attach to the needleless injection site cap on the end of your catheter. (See Fig. 4) Open all the clamps on your catheter and IV tubing, if indicated. You are now ready to start your pump as instructed.



Fig. 5

## 5. You are ready to start infusing

Hang your HPN bag on the IV pole or place in the pump backpack to move around during your therapy. When your infusion is complete, your pump should alarm to alert you it's finished. You can then repeat the previous steps when it is time to start a new bag.

Put used sharps (needles, syringes, etc.) in the sharps container provided. Don't discard your used sharps container in the trash. When you are finished with the container, it will either be picked up by our driver or if you receive a mail-back sharps container, you will return it by mail. Instructions will be provided to you based on the type of container you receive. (See Fig. 5)

# Section 3

## Monitoring HPN

### Monitoring your progress

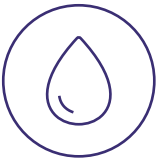
Your Option Care Health nutrition support team will help you create a routine that works for you, so you can manage your nutrition therapy successfully.

Your nurse will teach you how to monitor your nutrition therapy daily. This will help you get all the benefits from your therapy. You may also be asked to write down information about your health status in the Option Care Health HPN daily log sheet or in the nutrition support journal.



#### **Weight**

Weigh yourself at the same time each week or as directed by your healthcare provider. Wear the same amount of clothing each time you weigh yourself. Contact your healthcare provider if your weight changes significantly or if you notice swelling in your arms or legs. Your therapy may need to be changed if this happens.



#### **Blood tests**

Your healthcare provider will ask you to have blood tests drawn regularly. The nurse may do this at your home or you may have your blood drawn at an outpatient clinic or laboratory. The results will be reported to your healthcare provider and pharmacist. Based on your blood work results, your HPN formula may be changed.



#### **Blood glucose level (blood sugar)**

You may be asked to test your blood glucose level regularly with a glucose meter. This will help you recognize if you have high or low blood glucose. Your infusion nurse will teach you how to test your blood and how to write the results on the HPN daily log sheet. Your healthcare provider may have given you instructions to help you manage your levels and to know when to seek help. Also, be sure you do not suddenly stop your infusion or your blood glucose may dip too low.





### Temperature

Check your temperature daily, as an elevated temperature can be the first sign of an infection. Contact your healthcare provider (or go to the emergency room immediately) if your temperature is 101°F (38°C) or greater, you have a prolonged (one or two days) recurrent fever that is 1° or more above normal (baseline) or if you have shaking chills (especially if this occurs while infusing IV fluids, such as HPN). If you have decreased immune function, you may not have the typical rise in temperature that other people have with an infection. Contact your pharmacist, nurse or healthcare provider if you have other symptoms of infection, such as body aches, feeling unusually tired or increased glucose in blood.



### Intake and output

You may need to measure the amount of liquids you take in and how much urine you put out during a twenty-four hour period. Your nurse will explain how to record this. If you notice a change in urine output, rapid weight loss or gain, thirst, weakness, shakiness, muscle cramping, numbness, light-headedness/dizziness, rapid heart rate or swelling in your feet or legs, contact your healthcare provider, nurse or pharmacist.



### Electrolyte imbalances and vitamin/mineral deficiencies

The amount of electrolytes, vitamins and minerals you get will be monitored regularly by your Option Care Health team. HPN monitoring, using blood tests, is part of this. You should report any of the following to your nurse: muscle weakness or cramping, changes in skin, hair or nails, excessive hair loss, bleeding or bruising easily, tingling or loss of feeling anywhere in your body or bone pain.



### Other issues

You may be asked to record other symptoms in the HPN daily log sheet or nutrition support journal. It is beneficial to record your HPN schedule as this allows you to monitor your nutrition therapy. Finally, record any unusual symptoms you feel or questions you have. Recording this information serves as a reminder to report these symptoms to your healthcare provider or nurse.

# Monitoring HPN

## Healthcare provider visits

As part of your therapy, you will need to visit your healthcare provider regularly. It is important to do this even if you feel fine. Let us know when you see your healthcare provider, so we can record any changes to your nutrition therapy.

## HPN daily log sheet

Recording information on your HPN daily log sheet (see page 18) helps you take an active role to make your nutritional therapy a success. It also enables your healthcare providers to stay up to date on your status and nutrition therapy plan. You can make copies of the sheet to track items beyond one week, if required. Insert the date and track weight, temperature, your HPN schedule, food/fluids taken by mouth, finger-stick blood sugar (FSBS) tests and symptoms, as needed.

## Nutrition support journal

If you have additional important items to record, you may enter them in the nutrition support journal given to you by your dietitian or nurse.



Week of: \_\_\_\_\_

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Date							
Weight							
Temperature							
HPN administration schedule							
Food/fluid taken by mouth							
FSBS							
FSBS							
FSBS							
Symptoms/ comments							

Visit [optioncarehealth.com](http://optioncarehealth.com) to download additional copies of the HPN daily log sheet.

Follow your nurse's instructions when measuring blood glucose daily. Not every patient will require blood glucose monitoring.

**FSBS** = Finger-stick blood sugar

# Section 4 Ordering, handling and storing HPN and supplies

## Ordering HPN and supplies

As part of our services, Option Care Health delivers your HPN and supplies to your home. We will contact you before you run out to review your inventory, check your usage and refill needs as well as arrange the best day for delivery.

If you receive nursing services, your nurse can also review your need for supplies. It is important to check your supplies on your own each week and make a note of any items that you will need to order soon.

A best practice is to always make sure there are sufficient supplies for your next infusion when setting up for an infusion the day before. Please call us if you don't have enough supplies to administer your HPN before your next delivery.





## Unpacking your order

When we deliver your solutions and supplies, you should do the following:

- Identify a clean space in the refrigerator where the solutions can be stored.
- Wash your hands thoroughly with soap and water for 20 seconds before handling your solutions and supplies. Frequent hand washing helps prevent infection.
- Unpack new shipments as soon as they arrive. Use caution when opening boxes with sharp objects to avoid puncturing HPN bags or supplies.
- Check the label for each product and compare it with your current prescription. Make sure your name is on it and that the dosage and directions for administration match the instructions provided by your nurse or pharmacist.
- Inspect your supplies. Some are specially packaged to keep them sterile, while some solutions may be a specific color due to their ingredients. Your nurse will let you know how they should look.
- Organize and use your HPN bags and additives by expiration date. Always use the older supplies first and place your newer supplies in the back of the storage area for later use, unless instructed differently by your Option Care Health team.
- Keep your supplies and biohazardous waste container out of the reach of children and pets.

### DO NOT use your supplies if:

- They have expired. Always check the expiration date of your supplies as soon as you receive them.
- You see any cracks, leaks or floating particles.
- The packaging is torn or damaged in any way or if the protective cover/seal is open, broken or missing.
- There is moisture inside the packaging.
- The color of your HPN is different, but there were no changes to your prescription.

Call us if there are any other errors in your order, if you need replacements or if you have any questions or concerns about your supplies.

# Ordering, handling and storing HPN and supplies

## Storing your HPN and supplies

### Refrigeration

Refrigerate your HPN as soon as it arrives. Choose a clean area to store your HPN inside the refrigerator such as a shelf or bin. If possible, store your HPN in a separate refrigerator to help prevent contamination. Keep the HPN refrigerated until you need to use it, then remove from the refrigerator two to four hours before starting therapy and place in a clean work area.

- To keep your solution from freezing, set temperature between 36 - 46°F (2 - 8°C).
- Rotate your stock of solution so that it does not expire. Always use older solution first and place your new supply of solution in the back of the refrigerator for later use. Always check the expiration date before use.
- **DO NOT** stack more than two or three bags of solution on top of each other.
- **DO NOT** remove the port caps from the HPN until ready for use.

### Storage of other supplies

- Keep supplies that do not need to be refrigerated in a clean, dry area and out of the reach of children and pets.
- **DO NOT** open the sterile packaging until ready for use.

**DO NOT** use a sterile item if you think you may have contaminated it. Throw it away. It is better to use a few extra supplies than to have to visit a hospital to treat an infection. Let us know if you need extra supplies.

## Returns and credits

Many supplies that we ship to you require special storage temperatures and careful handling. If packaging is damaged, it could represent a critical safety hazard.

- Inspect your supplies at the time of delivery and tell us about any problems.
- We will issue a credit for defective solution or supplies shipped in error, only if you inform us at the time of delivery.

We comply with the Board of Pharmacy of your state, as well as other applicable federal and state regulations that prohibit the resale or reuse of dispensed solution or supplies. To ensure the safety of all patients, we cannot use returned solution or supplies, therefore, **WE DO NOT ACCEPT RETURNS OF ANY KIND.** Please alert Option Care Health immediately if you receive defective solution or supplies so we can replace promptly.



### Delivery

We offer several options for home delivery of the solution and supplies you need. Depending on your location and the timing of your needs, delivery may be made by UPS®, FedEx®, a prescreened medical courier or our infusion services delivery personnel.



# Section 5

## Managing complications

HPN is lifesaving for people who cannot receive all nutrition from their diet or tube feeding. As with all medical therapies, complications can occur. However, with training and close monitoring these can often be prevented. Here are some signs and symptoms to watch out for, and what to do if they occur.

We will check on you regularly to make sure you are not experiencing any complications while on HPN. If you feel sick or have any questions, please do not hesitate to contact your local care management center and ask to speak to a clinician. In case of an emergency, call 911 or go to your hospital emergency department, immediately.

## Catheter-related complications

### Air in catheter

If the tubing is disconnected, broken or not primed properly before use, air can enter the catheter and travel to your heart through the bloodstream.

#### Signs/symptoms:

- Shortness of breath
- Chest pain
- Bluish color to the lips/skin
- Dizziness
- Confusion

**What to do:** Call 911 immediately. Air entering the blood can be dangerous and must be treated quickly. In the meantime, lie on your left side with your head lower than your hips. This will help prevent the air bubble from moving farther into your body.

**Prevention:** At the first visit, your nurse will teach you how to prime the tubing before use. Follow these directions daily. Also, before administering, make sure all tubing is secured well so air is unable to enter.

## Blood clot in vein

A blood clot can form in the vein after a venous catheter is placed. Swelling or not having enough fluids can increase your risk for this problem.

### Signs/symptoms:

- Swelling of the arm/neck
- Tenderness in the armpit (on the same side as where the catheter is inserted)
- Facial swelling
- Chest pain
- Low-grade fever
- Fatigue
- Shortness of breath

**What to do:** Contact your healthcare provider immediately and call your local care management center to speak with a clinician. You may need to go to the hospital to treat the blood clot.

**Prevention:** At the first visit, you will be taught how and when to flush your catheter with heparin. This medication thins the blood in your catheter and prevents clots from forming. Make sure you follow the directions you are given. Proper hydration is also crucial in preventing blood clots.

## Bloodstream infection

Germs can get into your bloodstream through your venous catheter or port. This can cause you to become very ill in a matter of hours.

### Signs/symptoms:

- Chills
- Fever
- Body aches
- Sweating
- Lack of energy
- Increased fatigue

**What to do:** Contact your healthcare provider immediately and call your local care management center to speak with a clinician. You may need to go to the hospital for evaluation and treatment.

**Prevention:** Wash your hands every time you handle your solution and supplies. This will prevent bacteria from entering the catheter site and causing an infection. If possible, avoid coming into contact with sick people.

# Managing complications

## Venous catheter exit site infection

Your nurse will give you instructions on how to care for your venous catheter dressing.

### Signs/symptoms:

- Redness
- Swelling
- Drainage
- Tenderness

**What to do:** Call your local care management center to speak with a clinician.

**Prevention:** Keep a clean, dry, adherent dressing over your venous catheter site. Have your nurse change your dressing if it becomes wet, loose or soiled. This will help prevent an infection.

## Blockage of the catheter

Your catheter can be blocked by blood, medication or leftover solution from your nutrition therapy. A nurse will give you step-by-step instructions on how to flush your catheter. This should be performed each time before and after you administer medication (including HPN) through the catheter. Most venous catheters require flushing at least once a day, even if you do not take medication daily.

### Signs/symptoms:

- Difficulty flushing
- Issues withdrawing blood from your venous catheter
- Trouble administering HPN

**What to do:** Gently flush your venous catheter with saline. Never attempt to flush your catheter if resistance is met as this can break the catheter. If you cannot administer your HPN, make sure the clamp on the catheter is open and the tubing is not bent or kinked. Try to change the position of your arm. If this does not work, call your local care management center to speak with a clinician.

**Prevention:** Flushing the catheter properly before and after HPN administration will help prevent blockage.



## Damage to the catheter

If you have been on HPN for a while, the catheter may be damaged due to normal wear and tear.

### Signs/symptoms:

- Leaking catheter
- Tubing that appears to be cracked/broken

**What to do:** If your catheter appears to be damaged in any way, fold the catheter above the break or leak and secure with tape. Contact your healthcare provider immediately and call your local care management center to speak with a clinician. You may need to go to the hospital to have your catheter evaluated.

**Prevention:** Make sure the dressing around your catheter is secure. Handle your catheter gently and avoid contact with sharp objects as well as applying a lot of pressure on the tubing.

## Accidental movement or removal of the catheter

### Signs/symptoms:

- Catheter has been partially pulled out
- Catheter has been completely removed from the vein

**What to do if your catheter has been partially pulled out:** Call your local care management center immediately to speak with a clinician.

**What to do if your catheter has been completely removed:** Apply and maintain digital pressure to the exit site immediately to prevent bleeding or air entry into your bloodstream. Secure a dressing over the exit site and contact your healthcare provider or local care management center to speak with a clinician.

**Prevention:** Use dressings and devices as instructed to keep your catheter in place.

# Managing complications

## Irritated or swollen vein

Your catheter may sometimes irritate the vein it is placed in. This can often be treated with local therapy, as discussed below. This is different from an infection because you do not require medication. You should avoid hitting the vein where the catheter is inserted.

### Signs/symptoms:

- Warmth around the insertion site
- Puffy area over the vein
- Redness/tenderness along the path of the vein

**What to do:** Apply a warm compress to the area with pain or tenderness and raise your arm. Do not get your dressing wet. Call your local care management center to speak with a clinician.

**Prevention:** Do not pull on the catheter tubing and wash your hands before touching your supplies or catheter.

## Nutrition/metabolic complications

### Low blood sugar (hypoglycemia)

You may experience low blood sugar if your HPN administration is stopped suddenly. This also happens if you are diabetic and are given insulin, which is a hormone that acts on carbohydrates. When your nutrition therapy is stopped too early, the insulin will act on the carbohydrates in your body and cause the levels in your blood to drop. This is likely to occur 15 to 30 minutes after HPN administration is stopped.

### Signs/symptoms:

- Dizziness
- Sweating
- Fatigue
- Faintness
- Weakness
- Confusion

**What to do:** If you are told to drink something, you can have 4 to 6 ounces of juice. If you cannot drink, you can dissolve a glucose tablet or a tablespoon of sugar in your mouth. Call your local care management center to speak with a clinician or if you feel that you are about to lose consciousness, call 911 immediately.

**Prevention:** Your nurse will teach you how to administer nutrition therapy. Follow the instructions closely and do not suddenly stop administration. Before starting daily HPN make sure you have glucose tablets or sugar on hand.

## High blood sugar (hyperglycemia)

Alternatively, you may experience higher than normal blood sugar. This can happen if you administer the solution too quickly or do not receive enough insulin to treat your diabetes. An infection or certain medications can also increase your blood sugar.

### Signs/symptoms:

- Feeling of thirst
- Nausea
- Weakness
- Headache

**What to do:** Call your local care management center to speak with a clinician. The rate of administration or contents may need to be changed. If you have an infection, you will require antibiotics.

**Prevention:** Administer HPN as directed by your nurse. Tell your nurse, pharmacist or dietitian if you start any new medications, herbal supplements or if you increase your food intake, so we can keep track of these additional factors that may affect blood sugar.

## Dehydration

This can occur when the body loses more fluids than it takes in. It may happen as a result of fever, vomiting, diarrhea, medication or just not taking in enough fluids.

### Signs/symptoms:

- Feeling of thirst
- Dry mouth
- Weakness
- Decreased urine output
- Dizziness
- Dark or strong smelling urine
- Light-headedness

**What to do:** Call your local care management center to speak with a clinician. Your nutrition therapy may need to be adjusted to prevent dehydration.

**Prevention:** Administer HPN as directed by your nurse. Do not stop HPN early, because you may receive less fluid than you need to be getting.

## Long-term concerns

People on long-term HPN may be at increased risk for liver disease, bone weakness, pain or fractures. You may not notice any immediate signs/symptoms because they occur over a long period of time. Your Option Care Health team will monitor you regularly to help prevent and manage these conditions.



# Section 6

## Living with HPN

### Enjoying life

In the beginning, it may feel like your entire life revolves around HPN. As you become more familiar with the process, it is possible for HPN to be a usual part of your day. Here are some tips on how to stay positive as you integrate HPN into your life.

#### Take charge:

The more you take charge of the daily process, the more quickly you will be able to get back to enjoying the activities you did before HPN. Even if you need a caregiver to assist you, be sure to talk openly with him or her to figure out ways that you can take a more active role in your HPN.

#### Speak up:

You may be emotional when you start HPN. Anger, frustration, disappointment and anxiety are just a few of the things you may feel. Whether you choose to keep a journal and write down your feelings, seek spiritual help or speak with a licensed counselor, you need to express whatever you are feeling. Many people on HPN experience depression. If you have any signs or symptoms of depression, seek help immediately from your healthcare provider.

#### Branch out:

Receiving support from others is very important. Joining support groups, reconnecting with friends and family and even volunteering can help lift your spirits. Discuss exercise options with your healthcare provider. If you are unable to perform previous hobbies or favorite pastimes, now is the perfect time to learn something new that will keep you active and involved.

#### Treat yourself:

While you're working hard to integrate HPN into your life, you may forget to focus on yourself. Resolve to do something nice for yourself each day. Take time to pamper yourself; get a manicure or a haircut.

#### Stay connected:

Even though you may be eating differently, that doesn't mean you can't enjoy social gatherings like you did before. Many HPN patients still enjoy preparing meals for their family and joining them for sit-down meals. Friends and family members may be hesitant to eat in front of you or ask you to dinner, so be open with them and let them know how you feel.

#### Turn to us:

Ask your Option Care Health dietitian if it's possible to modify your HPN plan to meet your changing needs and lifestyle. We want to enhance your quality of life while meeting all your nutrition needs.

## Traveling with HPN:

HPN can make traveling stressful. Learn to enjoy travel while on HPN by planning ahead and knowing what to expect.

1. Consult with your healthcare provider prior to arranging your travel to determine if it is appropriate and how to handle an emergency while away. You may find it helpful to have your healthcare provider write a letter to explain the need for the supplies and solution you will be traveling with. Pack a copy of the letter along with your supplies.
2. Prepare for a possible emergency by having a plan of action. Identify hospitals on your travel route and where you will be staying. Discuss with your healthcare provider appropriate steps to take if you become ill or are unable to give yourself HPN while away.
3. Prepare your list of supply needs ahead of time. Pack extra commonly used supplies in the event of loss or damage. At a minimum, you should always have flushing supplies with you.
4. Determine if your travel location has refrigeration for storing your solution, if required.
5. Many times, Option Care Health can deliver to you wherever you are. Call us in advance of your travel to notify us of where you are going. It is possible that we can get your delivery to you a little earlier or that we can ship to the location in which you are traveling. **We cannot ship outside the United States.**

## Tips for air travel:

- Arrive early as it may take extra time to get through the screening process.
- Most HPN supplies are allowed through security checkpoints after they have been screened by x-ray or inspection.
- Carry HPN supplies and solution separately from other luggage to make screening easier.
- Declare your items to a security officer ahead of time as x-ray screening may make your HPN pump inoperable. Security checkpoint inspectors may choose to test your pump or inspect more closely for safety reasons.
- Consider obtaining a TSA “Disability Notification Card” to provide information on your medical condition, disability or medical device. Hand this card to a TSA agent upon arriving at the security checkpoint to make screeners aware that you will need some type of additional consideration during the screening process. This card does not exempt you from any part of the screening process, but it will discreetly alert them to your needs.

Visit [optioncarehealth.com](http://optioncarehealth.com) to access Tips for Traveling with Nutrition Support and Traveling with Parenteral Nutrition: Checklist.

# Section 7

## Nutrition resources

### Oley Foundation

[www.oley.org](http://www.oley.org)  
518.262.5079

The Oley Foundation provides its 24,000+ members with critical information on such topics as research, health insurance and medical advances. The foundation is also a source of support, helping people on home intravenous and tube feeding overcome challenges such as their inability to eat and altered body image. All Oley programs are offered free of charge to patients and their families.

### American Cancer Society

[www.cancer.org](http://www.cancer.org)  
800.227.2345

### Academy of Nutrition and Dietetics

[www.eatright.org](http://www.eatright.org)  
800.877.1600

### American Society for Parenteral and Enteral Nutrition (ASPEN)

[www.nutritioncare.org](http://www.nutritioncare.org)  
301.587.6315

### American Gastroenterological Association

[www.gastro.org](http://www.gastro.org)  
301.654.2055

### Association of Gastrointestinal Motility Disorders

[www.agmdhope.org](http://www.agmdhope.org)  
781.275.1300

### Celiac Disease Foundation

[www.celiac.org](http://www.celiac.org)  
818.716.1513

**National Celiac Association**

[www.nationalceliac.org](http://www.nationalceliac.org)  
888.4CELIAC

**Centers for Medicare and Medicaid Services**

[www.cms.hhs.gov](http://www.cms.hhs.gov)

**Crohn's and Colitis Foundation of America**

[www.ccfa.org](http://www.ccfa.org)  
800.932.2423

**Digestive Disease National Coalition**

[www.ddnc.org](http://www.ddnc.org)  
202.544.7497

**Feeding Tube Awareness Foundation**

[www.feedingtubeawareness.org](http://www.feedingtubeawareness.org)

**National Resource Center for Patient/Family-Centered Medical Home**

[www.medicalhomeinfo.org](http://www.medicalhomeinfo.org)  
630.626.6605

**National Institute of Diabetes and Digestive and Kidney Diseases**

[www.niddk.nih.gov](http://www.niddk.nih.gov)  
800.860.8747

**Short Bowel Syndrome Foundation**

[www.shortbowelfoundation.org](http://www.shortbowelfoundation.org)  
402.429.5784



# Section 8

## Glossary

**Alcohol:** Used to disinfect and clean supplies. Available as swabs and wipes, neither of which is reusable. Use a fresh swab or wipe for each new activity.

**Aseptic:** Free of bacteria or germs.

**Aseptic technique:** Method of washing your hands or scrubbing a port with an alcohol wipe to prevent infection.

**Catheter:** Thin, flexible tube placed in a big vein in your arm or chest. It is used to deliver nutrients or medications directly into your bloodstream. Other names include Hickman™, Brioviac™, peripherally inserted central catheter (PICC), triple lumen, double lumen, single lumen and implanted port.

**Catheter-related infection:** Infection caused by bacteria or germs in the catheter.

**Contamination:** Presence of bacteria or germs. A contaminated product is not sterile.

**Flushing:** Process that cleans the catheter and prevents it from getting blocked. Your nurse will provide instructions on how to flush the catheter.

**Heparin:** Medication that thins the blood to help prevent clots from forming in the catheter. Not all catheters require heparin, therefore, your nurse will provide instructions on how to flush your catheter with heparin only if ordered.

**Home parenteral nutrition (HPN):** Process by which nutrients are delivered directly into the bloodstream. Other names include parenteral nutrition and total parenteral nutrition (TPN).

**Infusion:** Administering nutrients or medications into a vein.

**Intravenous or IV:** Administering therapy directly into a vein.

**Injection site cap/connector:** Plastic, needleless connector found on the end of the catheter. It is sometimes found on other infusion-related devices. The needleless connector allows one to easily attach needleless syringes and tubing to the catheter. This connector must remain in place to prevent the backup of blood and to help prevent air from entering the catheter.

**Sterile:** Free of bacteria or germs. The HPN, additives and tubing are sterile.

# Notes

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.



option care health®

Option Care Health locations are ACHC accredited. HHA numbers are available to view at [optioncarehealth.com](https://optioncarehealth.com).  
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