

Parenteral Nutrition

What is parenteral nutrition (PN)?

Parenteral nutrition (PN) is nutrition that is given through an IV. The PN bag contains protein, carbohydrate (sugars), fat (lipids), vitamins, minerals, electrolytes (such as sodium, potassium, magnesium) and water. These nutrients in the PN go directly into the bloodstream.

Why do I need PN?

You may need PN when you are not able to eat, or when your body cannot digest food as it should. You may need PN if it is not safe for you to eat food by mouth or receive tube feeds. You may need PN if you have short gut syndrome, perforations or leakages in the bowel, bowel obstruction as well as other conditions.

Why is nutrition important?

Good nutrition is needed for strength, energy, and maintaining a healthy body weight with muscle. The body cannot heal and recover without good nutrition.

How will I receive PN?

An IV catheter is placed in a large vein through the arm or chest. PN is given through this IV catheter. The catheter can stay in for as long as needed. Proper care is required to avoid problems such as infection or clotting. PN can be given all throughout the day or sometimes over a shorter period of time such as 12, 14 or 16 hours.

In rare cases, if you are waiting for a catheter to be placed in a large vein, a dilute form of PN may be given through an IV catheter placed in a small vein for a short time.

How long will I receive PN?

The length of time you need PN may vary. You will need PN until you can start eating food again, and your body is able to digest the food and absorb the nutrients. Your doctor can also stop PN if you can be fed through a feeding tube placed in the stomach or small bowels.

What is the difference between enteral feeding and PN?

Enteral nutrition (EN), also called tube feeding, is a way of giving nutrition through a feeding tube. The tip of the tube is placed either in the stomach or in the small bowel. The body can digest and absorb the nutrients once EN is placed in the stomach or bowels. PN goes directly into the bloodstream and will bypass the stomach and bowels.

What are the side effects or problems with PN?

There are some side effects or complications that may occur with PN. These include:

- Risk of infection
- High blood sugar
- High triglycerides.
- Fluid and electrolyte imbalance

Your healthcare team will closely watch your PN therapy to avoid, or lessen the risk of these side effects. If you have side effects, your healthcare team will treat these problems.

What happens when I go home with PN?

Not all patients need PN when they leave the hospital. If you will need PN at home, your healthcare team will create a safe plan for you. At home, most patients will have their PN running only 12 or 14 hours overnight,

so they don't have to be hooked up to the IV all day.

Home PN will be brought directly to your home by a home infusion company. Your provider will watch your progress and adjust your home PN as needed.

A nurse will come to your home about once a week to check your progress and to get blood samples which are used to monitor your PN therapy.

Training and support

At home, your provider will teach you and your caregivers about PN therapy. You will be given written and verbal instructions on your home PN therapy. You will also be taught how to take care of your catheter, change dressings and set up your PN.

How do I get supplies and equipment?

Supplies will likely be brought to your home by a home infusion company. Every week, a provider from the home infusion company will call you to ask what supplies you need for the next week.

How do I get my home PN?

A weekly batch of PN will be given to you by the home infusion company.

How do I store PN?

PN bags should be stored in a fridge. Check the labels on the additives and store per those instructions.

- PN bags can be warmed at room temperature for at least 2 hours
- Do **not** infuse PN bags or additives if they have not been stored the right way
- Do **not** infuse PN bags that have particles or look cloudy at room temperature (this is for PN bags that have no fat or lipid added)

- Do **not** infuse PN bags with fat or lipids if you see an oily layer
- Do **not** hold PN bags under water to warm. Tap water in sinks or containers are not sterile and will contaminate PN bag and injection ports
- Do **not** place PN bags in the microwave, on heaters or in direct sunlight
- Do **not** leave PN bags at room temperature for longer than 24 hours
- Do **not** use PN bags if it has been spiked with tubing for more than 24 hours

What do I need to monitor?

- **Monitor your weight daily.** Take your weight at the same time each day. Wear similar clothing. Use the same scale. Call your doctor if you gain 2 pounds or more in one day or gain 5 pounds or more in one week.
- **Take your temperature daily.** Take your temperature at the same time every day. Check your temperature any time you are feeling ill, have the chills or feel hot. Call your doctor if you have a temperature greater than 100°F or 1 degree greater than your usual temperature.
- Monitor your intake and output daily on the record provided at the end of this handout. Keep track of drainage from an ostomy, fistula, wound or from other drainage tubes. Call your doctor if there are any changes.
- Monitor your blood glucose as instructed by your doctor. Look for signs of hypoglycemia or hyperglycemia.

When do I need to contact my PN provider?

Problem	Action patient should take
Catheter breaks, cracks or leaks	Clamp catheter above problem area Call home PN provider to arrange for repairs
Catheter has withdrawal Infusion occlusion	Call home PN provider to restore the catheter
Fever Chills with PN infusion	Stop PN right away Call home PN provider or go to emergency room
Drainage, pus, tenderness or redness at catheter exit site or along catheter tract	Call home PN provider for proper treatment
Chest pain, shortness of breath or loss of consciousness	Clamp catheter Call 911 Lie on left side
Pump malfunction	Check electrical source Call home PN provider for repair or replacement
Elevated urine or blood glucose	Call home PN provider to adjust PN infusion rate or insulin
Low blood glucose with sweating, headache, shakiness, blurred vision	If you can safely take fluids by mouth, drink juice, regular soda (not diet) or sugar water If you are not able to take fluids by mouth, take hard candy or glucose gel Call home PN provider to adjust PN infusion rate or insulin.
More thirst, low urine output, increased ostomy output or muscle cramps	Call home PN provider with intake / output record and Home PN provider will adjust PN fluids
Rapid weight gain, swelling of hands, feet, ankles, or short of breath	Call home PN provider to adjust PN fluids

Daily Intake and Output Record

Daily Intake and Output Record							
Date							
Weight							
Goal Weight							
Temperature (F)							
INTAKE (mL)							
Oral fluid							
PN							
IV fluid							
URINE OUTPUT (mL)							
Urine							
Stoma							
OTHER OUTPUT (mL) (circle)							
GT	JT	PEG					
Drain	Fistula						
Vomiting	Diarrhea						
TOTAL OUTPUT							
GLUCOSE (circle)							
Finger stick (acu-check)	Urine						