

# FACTSHEET

This fact sheet is for education purposes only. Please consult with your doctor or other health professionals to make sure this information is right for your child. If you would like to provide feedback on this fact sheet, please visit: [www.schn.health.nsw.gov.au/parents-and-carers/fact-sheets/feedback-form](http://www.schn.health.nsw.gov.au/parents-and-carers/fact-sheets/feedback-form).

## Parenteral nutrition (PN)

### What is PN?

Parenteral nutrition (PN) is where the nutrition that your child needs to grow is given as a fluid straight into their vein. PN contains nutrients normally found in food – protein, carbohydrate, fat, water, vitamins, minerals and electrolytes. The solution is given straight into your child's bloodstream, bypassing normal digestion. PN may be in addition to your child eating food by mouth or through other feeding methods such as tube feeding or it may provide the only source of nutrition - otherwise known as total parenteral nutrition (TPN). This will be discussed with you by your child's doctor. In this leaflet, we will refer to PN but if your child is having TPN, the same information will apply.

### Why is my child being fed this way?

Some children may need to have food given by a tube into the stomach or small bowel. This is called enteral feeding. Some patients won't be able to digest food when it is given by tube into the stomach. When this is the case, we can give basic nutrients directly into the blood stream using PN.

PN may be used for your child if they cannot eat normally and/or absorb enough nutrition through their digestive system (gut) or their gut needs to be rested. This means that they will have no food or fluid given by their mouth or by a tube into their stomach. Despite that, your child's body will still receive all the nutrition it needs from PN.

### How will PN be given to my child?

In order to get into the bloodstream, PN will need to be given to your child through a fine piece of plastic tubing called a central venous access device (CVAD) into a vein. This will be inserted into your child by an experienced doctor, possibly under a general anaesthetic in the operating theatre.

There are a few types of CVADs that may be used, but your child's doctor will discuss the appropriate device best suited to your child's needs. The type of CVAD your child receives may depend on whether they require PN long or short term. The PN will be delivered via an infusion pump to ensure it is not given too quickly or too slowly.

### What does the PN solution contain?

PN consists of 2 solutions:

1. The **white** liquid which contains:
  - fat for energy and cell repair.
2. The **clear** liquid which contains:
  - glucose for energy
  - protein for growth and repair
  - vitamins and minerals keep the body healthy and its organs working well
  - fluid for hydration

### Are there any risks or complications?

Yes.

## Infection Risk

There is a risk of getting an infection from the CVAD. The team looking after your child will always use sterile techniques to handle the CVAD and the PN solution. Your child's temperature and the site of the CVAD will be checked regularly for any signs of infection. However, if you notice your child having any leaks from the CVAD, fevers, sweats, shivers or any other problems, please notify your child's medical team immediately.

## Vein problems

In rare circumstances, the vein can become inflamed. If your child reports stinging, or you notice any skin redness or swelling, please notify a member of the medical team.

## Liver abnormalities

In some patients, PN can affect the liver. We monitor this with regular blood tests and can change the PN solution if needed.

## Refeeding Syndrome

If your child has not eaten or eaten enough for a long time before PN is started, then feeding is commenced slowly so that your child's body can adjust to having enough nutrition again. This is monitored with regular blood tests. During this time extra vitamins may be provided.

## Blood clots

Having a CVAD into a vein for a long period of time makes blood clots more likely to happen in the body. This is an uncommon but serious complication. Please report any face swelling, pain while PN is being administered, chest pain, sweating, tiredness, fever, shortness of breath or any other unusual symptom immediately to the medical team. Treatment can be provided to dissolve the blood clot.

## High Sugar levels

Unusually high blood glucose (sugar) levels can also occur. This may be checked by testing your child's blood using finger prick blood samples and will be treated if needed.

## How will we know PN is working?

Whilst your child is on PN it is important for them to be reviewed regularly by their medical team. The medical team will make sure your child is getting all of the nutrition they need.

Your child may be reviewed using these methods:

1. Blood tests – to check salt levels, kidney and liver function .
2. Urine samples.
3. Body weight.
4. Blood glucose sample.

5. Strict record of fluid intake and output by your child.
6. Observations i.e. temperature, blood pressure and pulse.
7. Care for your child's CVAD site on a regular basis.

## Frequently Asked Questions:

### How long will the PN be given for?

To begin with, PN will be given to your child continuously over 24 hours. Once your child is stable on it, the amount of time it needs to be given for may be decreased which will give your child more freedom from the infusion pump. The length of time your child needs PN for will depend on their specific condition. Your nutrition team will be able to give you an idea of how long your child may need it for.

### Can my child eat or drink while on PN?

This depends on your child's medical condition and their reason for having PN. Please check with your child's doctor first.

### Will my child be hungry?

PN may stop your child from feeling hungry as they will get all the nutrition they need. Some children may still feel hungry or thirsty, if this is the case with your child, please inform a member of the team. Also, your child's mouth may feel dry so it is important to clean their teeth regularly. The use of mouthwashes can help.

### What happens to my child's bowels during PN?

Your child will still open their bowels even though food is not being eaten with the stools (poo) being made up from mucous, cells and bacteria in the bowels. PN goes straight into the blood stream and does not cause diarrhoea, tummy pain or vomiting. If your child experiences any of these symptoms tell their doctor or nurse as this may be due to their condition or an illness. Your child's bladder should work normally.

### Will my child be able to move around while on PN?

The PN bag will hang on a mobile stand and the infusion pump will have a battery that will last several hours, so it should not restrict your child's movements.

### Can my child take a bath or shower whilst on PN?

Yes, as long as your child's CVAD dressing and tubing do not get wet. Shallow baths are recommended for young children, ensuring that their CVAD and tubing remain out of the water. If the CVAD dressing gets wet, please ask the nurse to change it as soon as possible. Infants that are unable to sit in a bath will need to be given a sponge bath.

**Should you have any further questions then do not hesitate to ask your medical team or a member of the nutrition team.**