

Equipment, Tests and Treatments

When your baby comes to NICU the doctors, nurses and other members of the health care team give your baby the care they need. The equipment provides the nurses and doctors with information about your baby at all times. These monitors are painless and are attached to your baby's skin. Your baby will have some, but likely not all of them.

Equipment

Sensors with wires may be taped to your baby's skin to give information about heart rate and breathing. This can be seen on the monitors. Your baby may have a small tube put into an artery to measure blood pressure.

You may hear beeps and alarms often. They sound to alert the nurse. Most of them are not urgent. Many happen when your baby moves or changes the way they are breathing as they wake up or go to sleep. Nurses attend to the alarms as quickly as they can.

The nurse will also monitor your baby by checking "vital signs" at regular times. This includes heart rate, blood pressure, temperature and reading the numbers on the machines.

A coated wire will be taped to your baby's skin to measure temperature. This wire is attached to the heater in or over the bed, so that your baby will be kept warm.



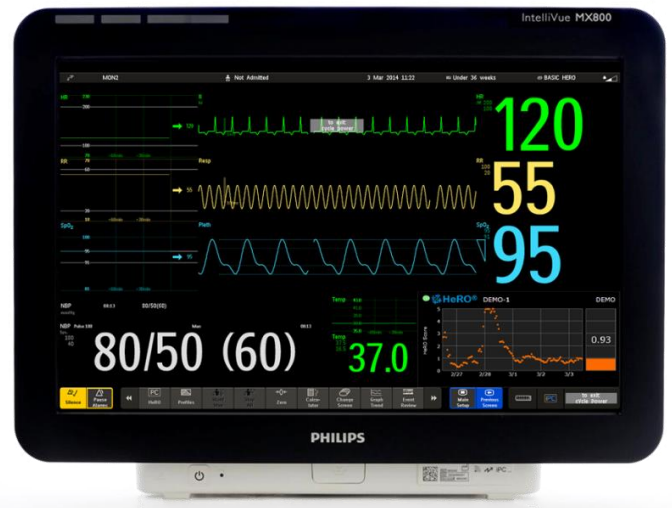
Monitor

This is sometimes called a heart monitor. It shows how your baby's heart is beating, and how your baby is breathing. Three small patches are attached gently to your baby's skin. The patches have wires attached to them. The wires are plugged into the monitor by a cable.

Blood pressure may be measured using a small cuff wrapped around your baby's arm (or leg), the same way your blood pressure is measured in the doctor's office. It may also be measured through a tiny tube into one of your baby's arteries.

A wire connects the tube to the heart monitor to give a constant read-out of the blood pressure. This line can often be used to take blood samples as well.

The oxygen in your baby's blood can also be monitored. A tiny light is attached to your baby's foot or hand with a piece of elastic tape. A cord connects the light to the monitor, which shows the amount of oxygen being carried by the red blood cells.





Isolette

An isolette is a bed that provides heat and humidity to your baby. They have a Plexiglass cover to keep the heat and humidity in. There are ports, which open to allow you and the nurses to care for your baby. The side also opens to allow the nurses to change the linen and to take the baby out.

Infant Warmer

This open bed provides heat from a heater above. The sides of the bed can be lowered to make it easier for you to see and touch your baby.

Bilirubin Lights

These are lights which are used to treat jaundice. We may use a light over the bed or a blanket of light. Your baby either lies on this blanket of light, or is wrapped in it. Your baby's eyes will be covered by soft eye pads to protect them when the lights are on.

Ventilator

A ventilator is a breathing machine that gives air and oxygen to your baby's lungs through an ET tube (see below). There are different machines that deliver the air in different ways.

The machine can do all or some of the breathing for your baby. As your baby weans from the machine, your baby will do more breathing for themselves.

Oxygen is given under a small amount of pressure through little tubes that fit into the nostrils of your baby's nose. This helps keep the air sacs in the lungs open so that it is easier for your baby to breathe.



Tests

Your baby may have some or more of the following tests:

Blood tests – Your baby's blood can be tested for many things that tell us how well they are doing. Blood can be taken from a needle placed in a vein or artery. It may also be taken by pricking your baby's heel. There are some common tests that may be done:

- Blood gases tell us about your baby's breathing.
- A blood count or CBC tells us how many blood cells your baby has and whether there may be an infection.
- A blood culture can tell us more about infections in the blood.
- Electrolyte tests tell us about the type of fluid your baby needs.
- These are the most common blood tests that you will see done. There are many other tests that may be done on blood from your baby. Your baby's doctor or nurse can explain them to you when they are done.

Eye exam – A look at the blood vessels in the back of your baby's eyes to see how they are doing as they mature.

Hearing test – A test using sound to see if your baby's hearing has been affected. All babies in NICU have a hearing test before they go home, or it will be arranged to be done later.

"Picture" tests – There are a variety of ways that we may take pictures of the inside of your baby's body. These include:

- X-rays – the most common ones are done to look at the lungs.
- Ultrasounds – the most common ones are done to look at the brain or belly. Most premature babies will have an ultrasound of their brain when they are one week old or sooner.
- CT and/or MRI Scans – the most common ones are done to look at the brain.



These “picture” tests may happen at any time of the day, and often during the night as well. We will do our best to tell you when tests will be done. We will also let you know about results as soon as we can. Talk to your baby’s nurse if you would like to be with your baby during a test.



Treatments

- **Tube feedings** – Feedings are given through a small tube passed into one nostril or through the mouth and down into the stomach. This is called a “naso” or “oro-gastric tube”.



- **Intravenous (IV)** – An “IV” may be placed in one of your baby’s veins. It is attached by tubing to a bag or syringe. Fluids, medicines and nutrition can be given through it. Usually a hand or foot vein is used. A vein in the scalp may be used. If so, this means that a small amount of hair will be shaved. The nurses will keep this hair for you if they can. It is common for IV sites to be changed often because baby’s veins are small and fragile and often cannot handle an IV for a long time.

- **Umbilical Artery or Vein Catheter (UAC, UVC)** – This is a small tubing threaded into your baby’s artery or vein in the belly button (umbilicus). This can be used to give fluids, medicines and nutrients. It is also used to take blood samples.
- **Central Line** – It may not be possible to use a regular IV to give your baby the fluids and medicines they need. A longer line, called a “central line” may need to be placed. This will stay in place and last longer than an IV.
- **Medicines** – The most common are antibiotics, given to treat an infection. There are many medicines used to help babies. Most are given at certain times, or at a steady rate. Your baby’s nurse can tell you about the ones your baby is getting.
- **Bladder catheter** – This is a small tube that may need to be placed into your baby’s bladder. This helps us to see how much urine your baby is making.

Breathing help

If your baby has trouble breathing these are some of the ways we can help:



- **Endotracheal Tube (ET Tube)** – This is a tube that goes from your baby’s mouth or nose into the windpipe (trachea). It is secured with tape and is attached by tubing to a ventilator. It pushes air into your baby’s lungs.
- **Nasal CPAP (Continuous Positive Airway Pressure)** – Some babies who do not need a machine to breathe for them but do need a little help to breathe more easily may be given nasal CPAP.



- **Nasal prongs/cannula** – Small soft tubes are placed into your baby’s nose to give extra oxygen.



- **Nasal CPAP** – Tubes are placed into your baby’s nose through which a small amount of pressure is given.
- **Ventilator** – A breathing machine that gives air and oxygen into your baby’s lungs. The air goes in through a tube called an “ET tube” placed through your baby’s mouth into the windpipe leading to the lungs.

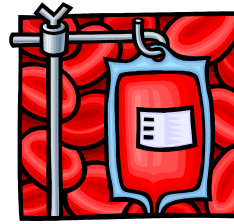
There are some things that we will not do until we have talked to you and you have agreed to it. We will talk to you about the risks and benefits as well as the options that you have. The surgery or procedure will not be done until you have had all your questions answered and have signed a consent form. In some cases when you are not able to be in the hospital consent can be taken over the phone.

Times when we will ask for further consent include:

- Surgery
- Tests that need dye to be infused
- Blood transfusion
- Medicines that are on trial
- Immunizations

In an emergency, a procedure may need to be done without your consent if it would harm your baby to wait.

Will my baby need a blood transfusion?



Your baby may need to have a transfusion to replace certain parts of the blood that are low. Blood carries oxygen to the body, fights infection and controls bleeding. A transfusion

is when your baby receives blood or a blood product through an intravenous (IV).

After a baby is born, the making of red blood cells slows down for a few weeks. Even if a baby is born with a normal amount of red blood cells, there are some common reasons why babies need a transfusion:

- Blood is taken for tests.
- An infection may decrease the making of red blood cells.
- An operation may cause your baby to lose blood.

What are blood products?

A blood product is part of whole blood. Whole blood is blood as it comes from someone who donates the blood. Whole blood can be separated into blood products. Your baby may need one or more of these products. The most common are:

- **Packed red blood cells:** the most common blood products needed. Red blood cells carry oxygen to all the cells in the body.
- **Platelets:** help blood to clot.
- **Plasma:** the pale-yellow liquid that carries blood cells. It contains clotting factors, which help blood to clot and stop bleeding.

There are other blood products which your baby may need. The doctors and nurses will explain them to you should your baby need them

Where does the blood come from?

The blood comes from the Canadian Blood Services. Blood is collected from donors who offer to give their blood for free. Before giving blood, donors are asked a long list of questions and have an interview with a nurse.



What are the risks?

The safety standards for the blood supply are very high. Each unit of blood is tested for many known diseases. Blood is not used if there are any concerns that it may transmit disease. There is still a very small chance of getting a disease or virus from donated blood. There is also a risk of a transfusion reaction that may cause the red blood cells to break.

Overall, the risk of your baby becoming ill due to a transfusion is very small. You must decide with your doctor if the risks of having a blood transfusion are higher than the risk of not having the transfusion.

Can I refuse?

If you do not want your baby to have a transfusion because of religious beliefs or for some other reason, you must inform your doctor. There are risks to your baby if your baby needs a transfusion and does not get one. Discuss these risks with your doctor.

Can my baby have my blood?

The Canadian Blood Services offers a way for parents to donate blood for their baby.

It is important to know that most studies show that this type of donation (called a **directed donation**) is no safer than blood from healthy volunteer donors.

In fact, blood donations from close family are more likely to cause a serious immune reaction. It may also mean that in the future, if your baby ever needs an organ transplant, they may not be able to get it from a family member. You need to think about this before you give your baby your own blood.

The only people who can direct their blood for your baby are the baby's:

- Parents
- Adoptive parents
- Legal guardians

The process to do this takes a number of steps. It may take up to 2 weeks for the blood to be ready for your baby. Therefore, this is not an option if your baby needs blood very soon.

Steps to Donate Blood for Your Baby (Directed Donations)

You must meet all the conditions set out by the Canadian Blood Services.

- You must have a physical exam and blood tests at a doctor's office to make sure you are healthy.
- Ask your baby's nurse for the forms that the doctor needs to complete.
- You should have your physical exam done by your own doctor. If you are from out-of-town, you can ask your baby's pediatrician to help arrange this or go to a Walk-in Clinic.
- Along with a check-up, the doctor will also need to take blood samples from you to check your hemoglobin level and to have your blood tested for CMV (cytomegalovirus) infection.
- If you don't know your blood type, this will need to be checked as well. Your blood type must be compatible with your baby's blood.

If you have more questions, call the Canadian Blood Services at 1-888-236-6283.

Next Review: June, 2026