

Cooling your baby to protect their brain

Why does my baby need cooling?

Your baby might have a condition called hypoxic-ischemic encephalopathy (HIE). This is caused by a lack of oxygen and/or blood in the brain during or right after birth. Other organs like the heart, kidneys, liver and intestines can also be affected by less oxygen and/or blood flowing to them.

Signs that your baby may have HIE are seen after birth and may include difficulty waking your baby up, sleepiness, tight or floppy muscles, seizures or uncommon movements and breathing problems. One way to lessen brain damage is to cool your baby (decrease their body temperature). This is called “total body cooling”. Your medical team feels this will help your baby and reading this information can help you understand how and why we use this treatment.

What causes HIE?

We do not always know why this happens, but it can be caused by less blood flow from the placenta to the baby, the placenta separating from the uterus wall, squeezing of the umbilical cord, or a rupture of the uterus.

What is total body cooling?

Your baby's body temperature will be maintained at 33 – 34°C. This helps in slowing down brain activity. Your baby will lie on a cooling blanket that has water running through it. The water temperature will adjust to warm or cool your baby. This treatment is usually started within 6 hours of your baby's birth if they show signs of HIE and continues for 72 hours.

What are the benefits of cooling?

Research shows that if the brain is cooled just a few degrees below normal body temperature soon after birth, it will slow down brain activity, and lessen the chance of brain damage. Cooling improves the chance that your baby will not have severe injuries and increases the chance that they will live without a serious disability.

Who will take care of my baby?

Many health professionals will take care of your baby and will work together with you: neonatologists, nurses, respiratory therapists, neonatal fellows, nurse practitioners, physician assistants, residents, dieticians, pharmacists, occupational therapists and lactation consultants.

What happens during the time my baby is receiving the treatment?

While caring for your baby, the medical team will watch your baby's heart rate, breathing and temperature. They will also be checking your baby's brain activity with a monitor. This is not painful. Since cooling can slow down blood flow to the intestines, your baby will not be given any feeds through the mouth. Instead, they will be provided nutrition and hydration through intravenous (IV) therapy.

It is normal for your baby to have a slower heart rate and breathing rate during cooling, and for them to be quiet and sleepy. It is important that your baby rest. Cooling can be uncomfortable for your baby so they will receive medicine to keep them comfortable. Your baby will be given medication for pain before painful or uncomfortable procedures. You can help your baby during these procedures if appropriate, by holding their body (placing one hand on their head and one on their legs) to help them make them feel safe.

After 72 hours, your baby will be slowly rewarmed to normal body temperature. This rewarming takes up to 6 hours. Soon after your baby may be ready to eat. If you are breastfeeding, you can pump and store milk until your baby is ready to eat.

Are there any risks for my baby?

Research has shown there are no major risks of this treatment. There are a few rare side effects, but usually there are more benefits than risks. We will be watching your baby very closely during cooling, and we will monitor their breathing patterns, heart rate and blood work.

What happens after cooling is done?

Usually, the day after your baby's temperature is warmed to normal, they will have a brain MRI. This test takes about 45 to 60 minutes. Your baby will need some medication to feel sleepy during the MRI. The results of the MRI will help the medical team understand if there is any brain injury. You will be told your baby's results once they are available.

How can you help your baby during this time?

You are welcome to be with your baby during this time and you may be able to hold your baby in the cooling blanket. Very often, your baby will need to rest and might be sensitive to touch and/or noise. Your baby's nurse will help you take part in their care and explain when to gently touch, sing and talk to them.

We realize this is a difficult time for you and your family. Any member of your baby's team will be happy to answer your questions and concerns.