

Hypoxic ischaemic encephalopathy (HIE)

This information sheet aims to answer some commonly asked questions about hypoxic ischaemic encephalopathy.

IMPORTANT: This is general information only. Ask your doctor or midwife/nurse about what care is right for you.

If your baby was very unwell at birth they may have developed a condition called hypoxic-ischaemic encephalopathy (HIE).

What is HIE?

Hypoxic means not enough oxygen, *Ischaemic* means not enough blood flow, and *Encephalopathy* means brain injury.

HIE may happen when not enough oxygen or blood goes to the baby's brain, and this causes the brain to be injured. The brain injury may be mild, moderate or severe. HIE can also affect the lungs, liver, heart and kidneys.

Some babies make a recovery and don't have any lasting effects. Other babies may have mild, moderate or severe problems as they get older. Sadly a few babies with HIE will die.

What are the signs of HIE?

If your baby has HIE, some of the signs they may show are:

- more alert than expected
- irritable
- sleepy
- floppy
- jittery or fitting (abnormal movements)

Your baby's healthcare team will talk with you about what this means for your baby.

Why does your baby have HIE?

It is not always possible to know why or when your baby had the brain injury. HIE can develop before, during or after birth for different reasons. Your doctor will talk with you about the possible reasons for your baby's HIE.

Where will your baby be treated?

The type and place of treatment depends on how serious the HIE is (mild, moderate or severe).

Your baby will have close care by their healthcare team for at least the first 6 hours after birth. Your baby may be in the neonatal unit (nursery) during this time. You will be able to visit and spend time with them.

Babies with mild HIE usually get better. Sometimes mild HIE gets worse and extra treatment is needed. Your healthcare team will talk with you about this.

Babies with moderate or severe HIE usually need care in a neonatal intensive care unit (NICU). Your baby may need to be transferred to another hospital that can provide this care. Your baby's healthcare team will talk with you about this.

What will happen in intensive care?

Your baby's heart rate, breathing pattern, blood pressure and temperature will be monitored. Blood tests will also be taken. Your baby's brain function will be monitored, and/or scans may be taken to see how severe the injury is.

In the intensive care unit your baby may be fed through an intravenous (IV) drip. This gives fluids, nutrients and medicines into your baby's veins. If you are breastfeeding, you will be supported to pump/express your milk.

Depending on how sick your baby is, they may also receive a treatment that cools their body temperature. This is known as therapeutic hypothermia and may start at the hospital where your baby was born.



What is therapeutic hypothermia?

Cooling babies a few degrees below their normal body temperature soon after birth may lessen their brain damage. Your baby is kept cool for three days and then slowly rewarmed back to normal body temperature.

The cooling itself is not painful, but your baby will be assessed often and will be given medication such as morphine (if needed) to keep them comfortable.

While your baby is being kept cool they will not be able to feed as the lower body temperature can affect their stomach and bowel.

What can you do?

You can visit your baby in the NICU. The healthcare team looking after your baby will show you ways that you can be involved in your baby's care. Be sure to ask any questions you have.

In the early days of this type of brain injury your baby needs a lot of rest. Usually while your baby is being cooled you will not be able to hold or cuddle your baby, as your body temperature may warm them up too quickly. Some babies are very sensitive to noise and touch. Being able to touch, talk or sing to your baby may depend on how your baby responds.

You will be able to hold your baby when they have been rewarmed.

You will be encouraged and supported to visit your baby regularly. Mums can express their breast milk, so it is ready for when your baby is ready to start feeding.

Be sure to look after yourself as well. You have just had a baby and need time to eat, rest and recover.

This can be a difficult time for you. Your healthcare team including the social worker and Aboriginal and Torres Strait Islander liaison officer are here to support and guide you.

What about the future?

It is very hard to know exactly what will happen long term for your baby until your health care team has had time to observe and assess them. The healthcare team will talk with you about your baby's physical health, examination and the results from the tests and scans, and what they may mean for your baby's future.

When your baby is well enough they are usually transferred back to the hospital where they were born. Information about your baby will be sent to their healthcare team.

After your baby goes home, it is important you go to all the follow-up appointments. This is so your baby can be checked for any problems or difficulties with their expected development.

Babies who have HIE may have problems with learning, speaking, walking and movement. Finding problems early means help can be given to your baby as soon as possible. Your healthcare provider will talk with you about what this means for your baby.



Image: Person holding a baby's hand

Support & Information

13HEALTH (13 432584) is a phone line that provides health information, referral and services to the public.

<https://www.qld.gov.au/health/contacts/advice/13health>

Pregnancy, Birth & Baby Helpline 1800 882 436 (free call) offers free, confidential, professional information and counselling about conception, pregnancy, birthing and postnatal care. <https://www.health.gov.au/pregnancyhelpline>

Lifeline 13 11 14 offers a telephone crisis support service. <https://www.lifeline.org.au>

Preterm Infant's Parent Association (PIPA) 1300 773 672 <https://www.pipa.org.au/>

Red Nose Grief and Loss Support Line (1300 308 307) available 24/7 for anyone affected by the loss of a pregnancy, stillbirth or death of a baby or child www.rednosegriefandloss.org.au

Child Health Service provides newborn drop-in services, early feeding and support, child health clinics. Refer to <https://www.childrens.health.qld.gov.au/community-health/child-health-service> for your nearest service

Australian Breastfeeding Association 1800 686268 (breastfeeding helpline). Community based self-help group offers information, counselling, and support services, on breastfeeding issues <https://www.breastfeeding.asn.au>