

Newborn pulse oximetry screening test for babies born at home

Information for parents

All babies born in NHS Lothian will have a routine pulse oximetry test in the first 24 hours after birth.

What does the test involve?

The test is very quick, taking less than 5 minutes in total and is **completely harmless and painless**. It involves measuring the oxygen level (sometimes called oxygen saturations) in your baby. We do this by wrapping a small sensor around your baby's right hand. This sensor is connected to a machine called a pulse oximeter, which measures the oxygen levels by shining a light through the skin. This is repeated with the sensor placed on your baby's foot. It is important to get both these readings for the test.

We aim to do the screening test within the first 24 hours of your baby's life. This is slightly different timing compared to babies born at hospital, who will have their oxygen levels measured within 6 hours, but is still within the accepted time where the screening test works well.

Why are we doing this screening test?

We are measuring oxygen levels in newborn babies to try to identify the small number of babies who have an **unidentified serious heart defect**. We know that these babies usually appear healthy at birth but often have lower oxygen levels. The test identifies babies with lower oxygen levels so we can check these babies very carefully to identify a possible heart defect before the baby becomes unwell.

Babies with other conditions such as **breathing problems, infections and circulation problems** can have low oxygen levels too and the test may also identify these babies.

What if my baby passes the test?

If your baby's oxygen levels are within normal limits, no further pulse oximetry testing is necessary at this time. Your baby will stay with you at home. They should still have their routine newborn examination ("baby check").

Passing the test is very reassuring but does **not always mean that there is no problem**. A small proportion of babies (about 1 in every 8,000) who pass the test may still have a serious heart problem- therefore it is still important for us to carry out the routine physical examination of your newborn. If you are concerned about your baby's wellness at anytime, it is important that you contact your midwife, GP or NHS24.

What if my baby does not pass the test?

There are 2 reasons why your baby might not pass the test:

1. Their oxygen levels are low (less than 90%). This happens in about **3 babies in every 1000 (0.3%)**. These babies are deemed **'test positive'**. You will need to come to hospital urgently (e.g. in the same hour). Some babies may need to travel to hospital by ambulance. Your midwife will advise you if this is the case. In the hospital you will be seen by a doctor or specialist nurse straight away. [See "What will happen if my baby is Test Positive?" section below].
2. More commonly, a baby will **not pass the test first time** but their oxygen levels will only be slightly low. This happens in about **3 in every 100 (3%)** babies. This might cause some worry for you, but we know that the lungs of some babies adapt to being born at a slower rate than others – this is normal and these babies are healthy. Because we know this, if your baby's oxygen levels are only **slightly reduced** in the first test and the baby **appears healthy**, then the test will be repeated a second time about 1 to 2 hours later. This is called a **Retest**. You will probably need to come to hospital for the retest, as we are unable to guarantee that your midwife will be able to come back to perform the retest 1 – 2 hours later.

What if my baby has a retest?

9 out of 10 babies will pass the Retest and these babies will be treated as healthy (Test Negative). It is important that your baby's oxygen levels are re-checked to make sure they are normal. You will need to come to hospital for the saturations to be re-checked. Those babies who do not pass the Retest (**Test Positive**) will be seen by a doctor or specialist nurse used to looking after babies. [See "What will happen if my baby is Test Positive?" section below].

What will happen if my baby is Test Positive?

About 7 in every 1000 babies tested (0.7%) will be **Test Positive** (either after the first or second test). Your baby will need to stay in hospital for further tests and you will be able to stay in hospital with them. Most babies will have blood tests and x-rays to try to find out the cause of the low oxygen levels. Some babies may also have an ultrasound of their heart called an 'echocardiogram' or 'echo' for short.

Of the babies admitted to hospital with a positive test:

- 2 in every 10 will be healthy – these babies are usually in the Neonatal Unit (NNU) for less than 12 hours
- 7 in 10 will have a breathing problem or infection and most will benefit from the test by early diagnosis and treatment of a potentially serious illness
- 1 in 10 will have a heart problem and they will benefit from early diagnosis and treatment.