

Neonatal Pulse Oximetry Screening

What is a Newborn pulse oximetry screening test?

Your newborn baby will undergo a routine pulse oximetry test, usually within the first 12 hours after birth. A pulse oximeter is a special machine which is used routinely throughout the world to measure the amount of oxygen in the blood. They are very simple to use – a small probe is wrapped around your baby's hand or foot and connected to the machine which then measures the oxygen levels by shining a light through the skin.

It is very quick – the whole test takes less than 5 minutes – and completely harmless and painless.

We are measuring blood 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 potentially serious conditions such as breathing problems, infections and circulation problems often have lower oxygen levels too and the test may also identify these babies. The midwife looking after you will explain the test beforehand and answer any queries you may have.

A doctor or specialist nurse will check all babies who do not pass the test to see if further tests or treatments are required. They will explain what is happening with your baby at each step.

What if my baby passes the test?

If your baby passes the test (Test Negative) this means the baby's oxygen levels are within normal limits and no further pulse oximetry testing is necessary at this time. Your baby will continue with routine care before discharge, including a newborn physical examination (NIPE).

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 8000) who pass the test may still have a serious heart problem, therefore it is still important to observe the baby for any change in condition and carry out the routine physical examination.

What if my baby does not pass the test?

About 3 in every 100 (3%) babies will not pass the test first time but the oxygen levels will only be slightly low. 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 the babies oxygen levels are only slightly reduced in the first test and the baby appears healthy then we will repeat the test a second time about 1 to 2 hours later (Retest).

9 out of 10 babies will pass the Retest and these babies will be treated as healthy (Test Negative). It is important that the baby's oxygen levels are normal before going home and so very occasionally this will lead to a slight delay in discharge (1 to 4 hours).

Those who do not pass the Retest (Test Positive) will be seen by a doctor or specialist nurse used to looking after babies. They will examine your baby and may do tests to try to find out why the oxygen levels are low.

About 3 babies in every 1000 (0.3%) tested will have very low oxygen levels on the first test which means that they will be seen by a doctor or specialist nurse used to looking after babies straight away (Test Positive). They will examine your baby and may do tests to try to find out why the levels are so low (including checking for a heart problem as needed) [see reverse].

What will happen if my baby is Test Positive?

About 7 in every 1000 babies tested (0.7%) of babies will be Test Positive (either after the first or second test).

This might cause you to worry but the doctor or specialist nurse will check your baby straight away and explain what is happening.

More than half of the babies (6 out of every 10 or 60%) who test positive are healthy and they just have slow adaptation to birth. Five out of these 6 babies will develop normal oxygen levels very quickly and need no investigation or treatment.

Five out of every 10 babies who test positive (3.5 out of every 1000 babies tested) will need further investigations and almost all will be admitted to the Neonatal Unit (NNU) for further assessment. This may make you worried, but the doctor or nurse will explain what is happening. Most babies will have blood tests, x-rays and other investigations to try to find out the cause of the low oxygen levels.

Of the babies admitted to NNU:

2 in every 10 will be healthy - these babies will have tests that were unnecessary and may have a delayed discharge, but they are usually on 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 all benefit from early diagnosis and treatment.

The Trust cannot accept any responsibility for the accuracy of the information given if the leaflet is not used by Royal Devon staff undertaking procedures at the Royal Devon hospitals.

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