

UK NSC recommendation on newborn screening using pulse oximetry (PO)

The UK NSC's members recognise that heart disease in newborn babies is a very serious problem and can be devastating for their families. But the UK NSC agreed that further research is needed before they can make a recommendation on the use of PO as an extra test in the newborn and infant physical exam (NIPE).

Pulse oximetry can be used to measure the amount of oxygen in the blood. It has been used for many years in some hospitals in the UK by doctors when caring for unwell babies. This recommendation does not affect this clinical care.

The UK NSC has been considering screening all babies with pulse oximetry since 2012. This is because it became aware of evidence supporting the use of the test to screen all babies for very serious heart problems. These problems are called critical congenital heart disease (CCHD) and usually affect the baby in the first weeks of life.

Research showed that low levels of oxygen might also show other health conditions as well as very serious heart problems. These include infections and problems with the baby's lungs. But for many, low oxygen levels is a passing stage in a newborn baby's first hours.

If babies are screened with PO in the first hours of life, a small proportion will be found to have low oxygen levels, but less than 5 in a 100 of those would have serious heart conditions. That means 95/100 would have something else, and 50 of those 95 would simply be taking longer to achieve normal oxygen levels (but otherwise well). The committee was unable to find evidence to understand the effects on this bigger group of babies and their families.

It is also important to know that in the UK, screening for CCHD is part of the ultrasound screening programme at 18+0 to 20+6 weeks of pregnancy. It is also offered in the newborn period, and again at 6 to 8 weeks as part of the newborn and infant physical examination (NIPE).

Key findings supporting the UK NSC recommendation

Consultation

The diagnosis of CCHD can have a devastating impact on the families of the immediately affected baby, as well as their friends. The committee is grateful for those many responses from such families and friends. It is also received many responses from doctors.

The UK NSC supported a range of work to help consideration of adding PO screening to the NIPE programme. The committee consulted with the public on this major change to the NIPE programme.

The UK NSC members are very conscious that that CCHDs are a serious health problem and recognise that efforts to find the affected babies early are very important.

The UK NSC carefully considered all the evidence and consultation responses before deciding what recommendation to make about screening using PO. The result of the committee's consideration was that it needs further research on the effect on all babies before they can make a recommendation on a screening programme.

Funding for research

A high level of interest in screening using PO was shown in our consultation. Some interest in further research was also shown.

About 40% of units currently use PO but it is used in different ways. About 60% of units do not use PO. This means that it may still be possible to find out more about the test before the UK NSC advises the NHS on how to use it.

Funding has been made available for research on screening for CCHD and other significant conditions using PO. An advert has gone out inviting researchers to apply.

The UK NSC regularly reviews its recommendations on screening for different conditions in the light of new research evidence becoming available.

To find out more about the UK NSC's recommendation on newborn screening using pulse oximetry (PO), please visit:

legacyscreening.phe.org.uk/congenitalheartdisease

The UK National Screening Committee (UK NSC) advises ministers and the NHS in the 4 UK countries about all aspects of screening and supports implementation of screening programmes.

Find out more about the UK National Screening Committee at www.gov.uk/uknsc. The UK NSC evidence review process is described at www.gov.uk/government/publications/uk-nsc-evidence-review-process and a list of all UK NSC recommendations can be found at legacy.screening.nhs.uk/recommendations

The UK NSC secretariat is hosted by Public Health England (www.gov.uk/phe)