

# Call for Europe-wide screening of babies for heart defects

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All babies across Europe should be routinely screened for critical congenital heart defects (CCHD) within 24 hours of their birth, say a group of experts led by a University of Birmingham Professor and

Honorary Consultant Neonatologist at Birmingham Women's Hospital.

The European Pulse Oximetry Screening Workgroup (EPOSW), a group of neonatologists and paediatric cardiologist, including Presidents of leading European Neonatal Scientific Societies, has published a consensus statement recommending screening with [pulse oximetry](#) for all [babies](#) across Europe.

CCHD occur in around two in every 1,000 newborn babies, and are a leading cause of infant death. Timely diagnosis is crucial for the best outcome for these babies, but current screening methods may miss up to 50% of affected newborn infants, and those sent home before diagnosis frequently die or suffer major morbidity. However, babies with CCHD often have low blood [oxygen levels](#) which can be detected quickly and non-invasively by pulse oximetry screening (POS), using a simple sensor placed on [newborn infants'](#) hand and foot.

This medical device monitors the oxygen saturation of a patient's blood through their skin, as opposed to measuring oxygen levels directly through a blood sample.

EPOSW's statement, published in *Lancet Child Adolescent Health*, is a culmination of almost a decade's work and calls for POS in all European countries for newborn babies after six hours of life or before discharge - preferably within 24 hours of birth.

The recommendations follow the PulseOx study led by a team from University of Birmingham and Birmingham Women's Hospital in 2011 which screened over 20,000 newborn babies for critical heart defects using POS. This study, and an important meta-analysis of the test published by the same team in 2012, has led to POS being used by an increasing number of hospitals in the UK and Europe. However, to date, only a few countries such as Poland, Ireland and Switzerland have issued

national guidelines recommending universal screening with pulse oximetry.

Senior author Professor Andrew Ewer, of the Institute of Metabolism and Systems Research at the University of Birmingham, said: "These recommendations are the culmination of almost a decade's work driven by one focus; to prevent as many babies as possible from dying as a result of undetected heart defects.

"Surgical and catheter interventions for CCHD now lead to excellent outcomes for most cases of CCHD, but timely detection is essential.

"POS improves early detection of CCHD in newborn babies by identifying those with low oxygen saturations.

"POS has been shown to be simple, quick, painless, consistent and cost-effective and acceptable to both staff and parents.

"We have tried to create common, shared, flexible, and evidence-based recommendations for use and standardisation of POS for early detection of CCHD across Europe.

"These recommendations should be considered at a national level as an approach to better identify CCHD, and other life-threatening conditions, in newborn babies."

**More information:** Manzoni et al (2017). 'Pulse oximetry screening for critical congenital heart defects: a European consensus statement'. Lancet Child Adolescent Health.

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