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*Educated Patients Lead to Better Care.*

## Pulse Oximetry Screening: Simple Test Saves Lives

Each year, approximately 1 of every 110 babies is born with a heart defect. When a heart problem is present at birth, it is called **congenital heart disease**. Heart defects are the most common type of birth defect, causing 24 percent of birth-defect-related infant deaths.

Some congenital heart defects may not require immediate treatment or, in very mild cases, may never need to be treated at all. However, serious heart defects in newborns can be life threatening and require immediate, emergency treatment. **Critical congenital heart defects (CCHD)** are heart defects that require treatment within the first year of life.

For many babies, the first step toward successful treatment is a quick, painless test called **pulse oximetry**. Many states now require hospitals to perform pulse oximetry screening before a newborn is sent home.



### What Is Pulse Oximetry Screening?

You may have heard of a baby being born “blue.” Infants whose blood is not carrying enough oxygen throughout the body may have a bluish discoloration of their skin. This is called **cyanosis**. It can be a signal of a serious congenital heart defect, but it is not always easy to detect. For example, some babies appear to be perfectly healthy while in the hospital, but problems begin after the baby has gone home. For some babies, the defect is not unmasked until days after birth, when the heart does not undergo some normal structural changes that help the heart to circulate oxygen-rich blood to the body.

**Pulse oximetry screening** helps identify critical congenital heart defects by testing oxygen levels in a newborn’s blood. The test takes only a few minutes to perform, is painless,

and does not require that blood be drawn. The device used to perform the test is a **pulse oximeter**, which consists of a sensor that emits light in different wavelengths to measure how much oxygen is in the blood. A sticker or bandage is used to temporarily attach a sensor to the baby’s finger, earlobe, or foot.

The sensor monitors how much oxygen is in the baby’s blood in both arms and both feet. A newborn baby should have an oxygen saturation of greater than 95 percent and a difference of no more than 3 percent in the saturation in the arms and feet. The test is performed three times, an hour apart, ideally when the baby is 24 to 48 hours old.

If the test indicates that a baby has low oxygen saturation, further tests, such as an echocardiogram (ultrasound of the heart), should be performed, and a **pediatric cardiologist** (a heart doctor specializing in children’s care) may join the baby’s care team.

**Note:** The information contained herein does not, and is not intended to, constitute comprehensive professional medical services or treatment of any kind. This information should not be used in place of medical diagnosis or medical advice and must be considered as an educational service only.



## Questions to Ask Your Doctor About Pulse Oximetry Testing

In 2011, the U.S. Department of Health and Human Services recommended that all newborn babies undergo pulse oximetry screening. Many, but not all, states have enacted legislation requiring that pulse oximetry be performed before a baby is sent home from the hospital. The following questions can help you determine if pulse oximetry screening is performed at your hospital or birthing center.

### Before Your Baby Is Born

- Do laws in this state require pulse oximetry testing for newborns?
- Does this hospital/birthing center test all newborns?
- If pulse oximetry testing is not routine at this hospital/birthing center, can I request it for when my baby is born?
- If my newborn's blood oxygen saturation is low, what happens next?

### Before You Take Your Baby Home

- If my baby and I are discharged from the hospital sooner than 24 hours after delivery, will my newborn still be screened?
- How accurate is pulse oximetry screening?
- Will I be with my newborn during testing?
- Will I be notified of the screening results, even if my newborn's oxygen saturation level is normal?

## What Should I Do If I Have More Questions?

**Ask them.** Contact your healthcare provider and ask all of your questions. Any time you have health questions, the conversations you have with your doctor are the key to successful results. Ask every question you have.

SecondsCount.org was developed by the Society for Cardiovascular Angiography and Interventions Foundation (SCAI), the medical society for interventional cardiologists.

**For more about pulse oximetry and other cardiovascular tests for babies and children, visit SecondsCount's "Guide to Pediatric Tests" on [www.SecondsCount.org](http://www.SecondsCount.org).**



You can watch as Derek A. Williams, DO, FSCAI, Associate Professor, Wake Forest Baptist Health – Brenner Children's Hospital in Winston-Salem, North Carolina, explains how pulse oximetry testing is used in the care of newborn babies, and how this simple and non-invasive test can help detect congenital heart defects and save lives. To watch the video, visit [www.SecondsCount.org](http://www.SecondsCount.org).

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