

## **Critical Congenital Heart Disease Screening**

### **What is Critical Congenital Heart Disease?**

Congenital heart disease (CHD) is the most common birth defect. Infants with CHD have abnormal structure to their heart which creates abnormal blood flow patterns. Approximately eight of every 1,000 infants born have a form of CHD. Some forms of CHD cause no or very few problems in the health, growth, and development of the baby.

Critical CHD (CCHD) includes more serious forms of CHD and usually requires intervention in the first year of life. CCHD can bring a significant risk of morbidity and mortality if not diagnosed soon after birth. Failing to detect critical CHD while in the newborn nursery may lead to critical events such as cardiogenic shock or death. Survivors who present late are at greater risk for neurologic injury and subsequent developmental delay.

### **Why is Pulse Oximetry used to screen CHD?**

Pulse ox is used to measure how much oxygen is in the blood. Pulse ox is a routinely used test that can be used to monitor an baby's oxygen level during a procedure or treatment. It can also be helpful in determining if an baby's heart and lungs are healthy. Pulse ox can also help to identify babies with low levels of oxygen in their blood that may have serious heart problems. A midwife may refer you to your doctor, who will do more testing such as an ultrasound of the heart, or echocardiogram (or "echo") when a low pulse ox reading is identified. The echo will screen for a serious problem in the structure of the heart or the blood flow through the heart. Pulse ox can identify a baby with serious CHD soon after birth.

### **What is Pulse Oximetry?**

Pulse oximetry, or "pulse ox," is a simple, non-invasive and painless test that is used to measure the percent oxygen saturation of hemoglobin in the arterial blood and the pulse rate. Pulse ox was invented in the 1970's and is now widely used and accepted in clinical care; it is often thought to be a basic vital sign.

### **How is Pulse Oximetry Performed?**

The pulse ox is placed by a sticky strip, like a Band-aid TM , with a small red light, or "probe," on the baby's hand or foot. The probe is attached to a wire, which is attached to a special monitor that shows the pulse ox reading. The pulse ox test takes just a few minutes to perform. You can help comfort your baby and keep him or her warm, calm, and quiet while the test is being performed.

### **What is a normal reading?**

A pulse ox reading of 95 to 100 percent is normal in healthy babies. Babies with heart or lung problems may have lower readings. A low pulse oximetry reading can be normal in newborns whose lungs and heart are adjusting after birth. If your baby has a problem with his or her heart or lungs, your midwife will tell you what constitutes a normal pulse ox range for your child. It is possible that your baby's doctor will order additional tests.

**Can a baby have serious CHD with a normal pulse ox reading?**

It is possible that the pulse ox test will not detect all forms of problems in the baby's heart. Your baby should continue to have normal visits with his or her midwife, and primary care doctor. If a problem with the heart is suspected, your primary care doctor will advise you.

**Who should be screened?**

All babies should be screened. The test will be done after the baby is born when he or she is older than 24 hours (at your first home visit). The pulse ox test will be done if the baby isn't already thought to have a problem with the heart or lungs. The test is non-invasive and painless.