Oklahoma Parents Center, Inc.
Fact Sheet

Sickle Cell Trait (SCT) and Sickle Cell Disease (SCD)

What is Sickle Cell Trait?

Sickle Cell Trait (SCT) is not a mild form of sickle cell disease. Having SCT simply means that a person carries a single gene for sickle cell disease (SCD) and can pass this gene along to their children. Most people with SCT do not have any symptoms of SCD, such as pain crises. However, in rare cases, the following conditions could be harmful for people with SCT:

- Increased pressure in the atmosphere (such as from scuba diving);
- Low oxygen levels in the air (such as from extreme physical activity);
- Dehydration; and
- High altitudes.

Sickle Cell Trait (SCT) cannot turn into Sickle Cell Disease (SCD).

What is Sickle Cell Disease?

Sickle Cell Disease (SCD) is a genetic condition that is present at birth. In SCD, the red blood cells become hard and sticky and look like a C-shaped farm tool called a "sickle." The sickle cells die early, which causes a constant shortage of red blood cells and when they travel through small blood vessels, they get stuck and clog the blood flow. There is a 1 in 4 chance with each pregnancy when both parents have at least one abnormal beta-globin gene.

SCD is inherited when a child receives two sickle beta-globin genes - one from each parent.

SCD causes many symptoms like anemia (causes a person to feel tired, weak or short of breath), severe pain, or even stroke.

However, there are many types of Sickle Cell Disease (SCD), determined by the types of abnormal hemoglobin (Hb) a person makes. The most common types of SCD are:

- **HbSS:** People with this type of SCD inherit a sickle cell gene ("S") from each parent. This is commonly called sickle cell anemia.
- **HbSC:** People with this type of SCD inherit a sickle cell gene ("S") from one parent and from the other parent a gene for an abnormal Hb called "C".
- **HbS beta-thalassemia:** People with this type of SCD inherit one sickle cell gene ("S") from one parent and one gene for beta-thalassemia, another type of anemia, from the other parent. There are two types of beta-thalassemia: "zero" and "plus".

It is unknown how many people in the United States is impacted by Sickle Cell.

What is sickle cell screening?

A blood test for hemoglobin S or sickle hemoglobin can tell if the hemoglobin is normal, carries SCD or SCT, or if there is any other type of abnormal hemoglobin. This is done by having a complete blood count (CBC) and hemoglobin electrophoresis, high performance liquid chromatography (HPLC) or DNA testing.

How can I (or my child) get screened?

At birth:
All infants born in the United States after 2006 should have already been screened as part of the newborn screening process at the hospital.

In adulthood:
Screening may be done as part of the care received from a primary care physician. Ask the physician, local health-clinic, or community based sickle cell disease organization for testing locations nearby.

This publication was developed in collaboration with Supporters of Families with Sickle Cell Disease. http://www.sicklecelloklahoma.org/

Adapted from these documents: *Fact Sheet: Sickle Cell Trait*, *Fact Sheet: Getting Screened to Know Your Sickle Cell Status, and Infographic: Get Screened for Sickle Cell Trait*. **Centers for Disease Control and Prevention (CDC).**

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