Sickle Cell Disease and Trait

The Georgia Comprehensive Sickle Cell Center at Grady Health System, Atlanta GA
www.SCInfo.org

What is Sickle Cell Disease ?

Sickle Cell disease is a group of inherited red blood cell disorders. It is the most common genetic disease in the US. Over 70,000 Americans have sickle cell disease.

Normal red blood cells are round like doughnuts, and they move through small blood tubes in the body to deliver oxygen. Sickle red blood cells become hard, sticky and shaped like sickles used to cut wheat. When these hard

and pointed red cells go through the small blood tube, they clog the flow and break apart. This can cause pain, damage and a low blood count, or anemia.

What makes the red cell sickle?

There is a substance in the red cell called hemoglobin that carries oxygen inside the cell. One little change in this substance causes the hemoglobin to form long rods in the red cell when it gives away oxygen. These rigid rods change the red cell into a sickle shape.

How do you get sickle cell anemia?

You inherit the abnormal hemoglobin from both parents who may be carriers with sickle cell trait or parents with sickle cell disease. You can not catch it. You are born with the sickle cell hemoglobin and it is present for life.

Is Sickle Cell only in African Americans?

Sickle cell is in many nationalities including African Americans, Arabs, Greeks, Italians, Latin Americans and people from India. All races should be screened for this hemoglobin at birth. In the US, 1 out of 10 African Americans have sickle cell trait and 1 out of 625 newborns have the disease.

How can I be Tested?

A simple blood test called the hemoglobin electrophoresis can be done by your doctor or local sickle cell foundation. This test will tell if you are a carrier of the sickle cell trait or if you have the disease.

Newborn Screening

Most States now perform the sickle cell test when babies are born. The simple blood test will detect sickle cell disease or sickle cell trait . Other types of traits that may be discovered include: Hemoglobin C trait, Hemoglobin E trait, Hemoglobin Barts - which indicates an alpha thalassemia trait

What is sickle cell trait?

Sickle cell trait is a person who carries one sickle hemoglobin producing gene inherited from their parents and one normal hemoglobin gene. Normal hemoglobin is called type A. Sickle hemoglobin called S. Sickle cell trait is the presence of hemoglobin AS on the hemoglobin electrophoresis. This will NOT cause sickle cell disease. Other hemoglobin traits common in the United States are AC and AE traits.

Are there different types of sickle cell disease?

There are three common types of sickle cell disease in the United States.

1. Hemoglobin SS or or sickle cell anemia
2. Hemoglobin SC disease
3. Hemoglobin sickle beta-thalassemia

Each of these can cause sickle pain episodes and complications, but some are more common than others. All of these may also have an increase in fetal hemoglobin which can protect the red cell from sickling and help prevent complications. The medication hydroxyurea also increases fetal hemoglobin.

Where can I get more information?

Visit the Sickle Cell Information Center on the internet at www.SCInfo.org or call the following:
The Georgia Comprehensive Sickle Cell Center at Grady Health System 404-616-3572
The Sickle Cell Foundation of Georgia Inc. 404-755-1641
Sickle Cell Disease Association of America 1- 800-421-8453