

What is Sickle Cell Disease?

SCD is a group of inherited red blood cell disorders. Healthy red blood cells are round, and they move through small blood vessels to carry oxygen to all parts of the body. In someone who has 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. Also, when they travel through small blood vessels, they get stuck and clog the blood flow. This can cause pain and other serious problems such as infection, acute chest syndrome and stroke.



Types of SCD

Following are the most common types of SCD:

HbSS

People who have this form of SCD inherit two sickle cell genes ("S"), one from each parent. This is commonly called *sickle cell anemia* and is usually the most severe form of the disease.

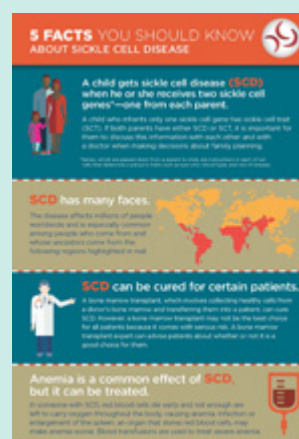
HbSC

People who have this form of SCD inherit a sickle cell gene ("S") from one parent and from the other parent a gene for an abnormal hemoglobin called "C". Hemoglobin is a protein that allows red blood cells to carry oxygen to all parts of the body. This is usually a milder form of SCD.

HbS beta thalassemia

People who have this form 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: "0" and "+". Those with HbS beta 0-thalassemia usually have a severe form of SCD. People with HbS beta +-thalassemia tend to have a milder form of SCD.

Infographic: 5 Facts You Should Know About Sickle Cell Disease



Did you know SCD affects people from many parts of the world? 

There also are a few rare types of SCD:

HbSD, HbSE, and HbSO

People who have these forms of SCD inherit one sickle cell gene ("S") and one gene from an abnormal type of hemoglobin ("D", "E", or "O"). Hemoglobin is a protein that allows red blood cells to carry oxygen to all parts of the body. The severity of these rarer types of SCD varies.

Sickle Cell Trait (SCT)

HbAS

People who have SCT inherit one sickle cell gene (“S”) from one parent and one normal gene (“A”) from the other parent. This is called *sickle cell trait* (SCT). People with SCT usually do not have any of the signs of the disease and live a normal life, but they can pass the trait on to their children. Additionally, there are a few, uncommon health problems that may potentially be related to sickle cell trait.

[Learn more about sickle cell trait »](#)

Cause of SCD

SCD is a genetic condition that is present at birth. It is inherited when a child receives two sickle cell genes—one from each parent.

Diagnosis

SCD is diagnosed with a simple blood test. It most often is found at birth during routine newborn screening tests at the hospital. In addition, SCD can be diagnosed before birth.

Because children with SCD are at an increased risk of infection and other health problems, early diagnosis and treatment are important.

You can call your local sickle cell organization to find out how to get tested.

Complications and Treatments

People with SCD start to have signs of the disease during the first year of life, usually around 5 months of age. Symptoms and complications of SCD are different for each person and can range from mild to severe.

There is no single best treatment for all people with SCD. Treatment options are different for each person depending on the symptoms.

[Learn about complications and treatments »](#)

Cure

The only cure for SCD is bone marrow or stem cell transplant.

Bone marrow is a soft, fatty tissue inside the center of the bones where blood cells are made. A bone marrow or stem cell transplant is a procedure that takes healthy cells that form blood from one person—the donor—and puts them into someone whose bone marrow is not working properly.

Bone marrow or stem cell transplants are very risky, and can have serious side effects, including death. For the transplant to work, the bone marrow must be a close match. Usually, the best donor is a brother or sister. Bone marrow or stem cell transplants are used only in cases of severe SCD for children who have minimal organ damage from the disease.

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SCD Fact Sheet



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