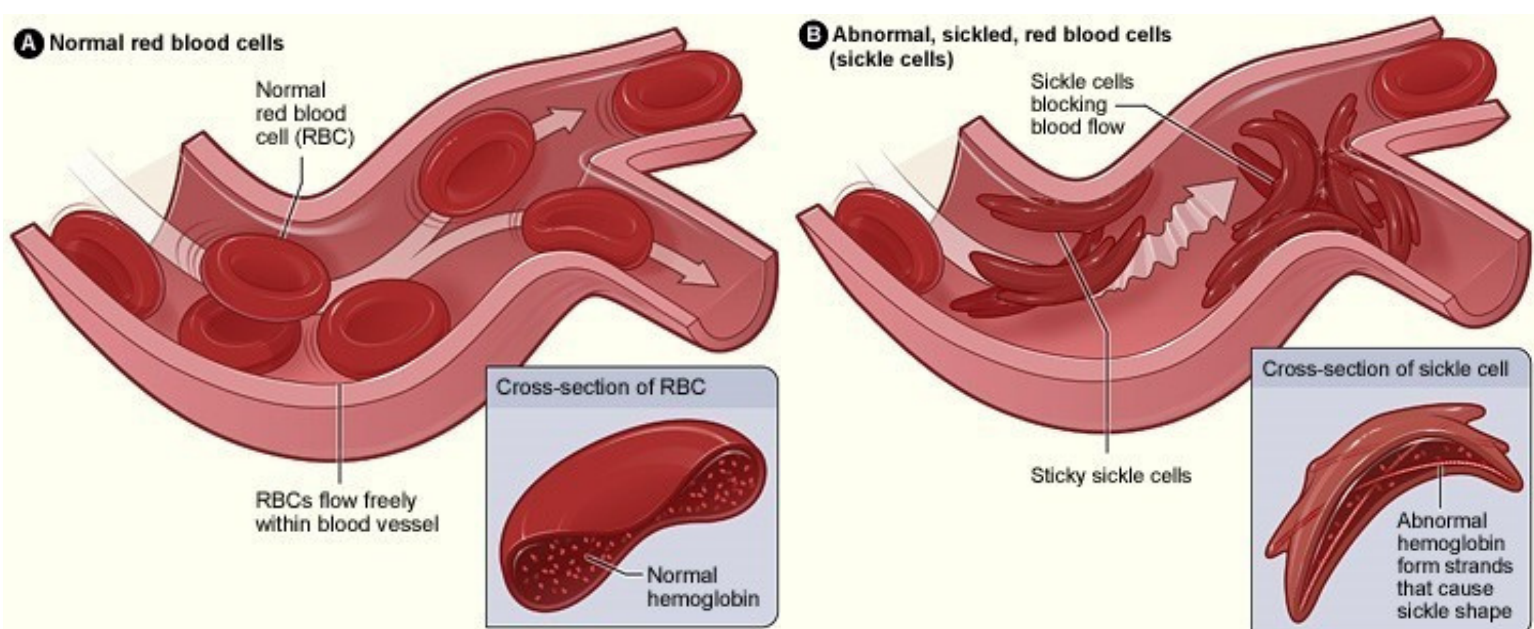


# Genetics: Hemoglobin SC Disease

## What is hemoglobin SC disease?

Hemoglobin SC disease is the second most common form of sickle cell disease (SCD). SCD is a disease that causes red blood cells (RBCs) to have an abnormal shape.



**Sickle red blood cells can get stuck in blood vessels and block the flow of blood and oxygen in the body.** When this happens it can cause severe pain, serious infections, organ damage, or stroke. SC disease is very similar to sickle cell anemia, but may be less severe.

## What is hemoglobin and what does it do?

Red blood cells contain hemoglobin (HEE-MUH-GLOW-BIN). Hemoglobin is a protein that carries oxygen around the body. There are several types of abnormal hemoglobin. **Sickled hemoglobin** is the type that causes sickle cell anemia. It is usually written as Hb-S. A person needs two copies of Hb-S to have sickle cell anemia - one copy from each parent.

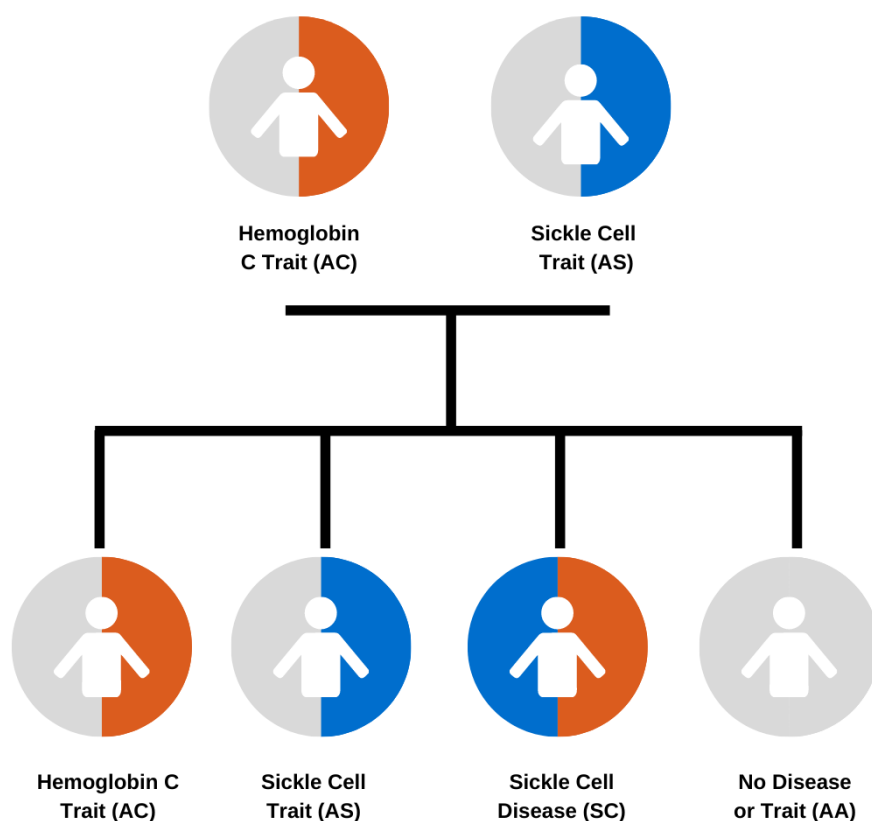
Another abnormal hemoglobin is **hemoglobin C**, or Hb-C. Like Hb-S, it does not function like normal hemoglobin. When a person has one copy of Hb-S and one copy of Hb-C, they have hemoglobin sickle C disease, often called SC disease.

## How does a person get SC Disease?

SC disease is genetic disorder, meaning it is passed on from parents to their children just like hair, eye, and skin color. **You are born with SC disease. It is not contagious. Both boys and girls have an equal chance of getting SC disease.**

If one parent has sickle cell trait (one copy of the sickle cell anemia gene) and one parent has hemoglobin C trait (one copy of the hemoglobin C gene) then there is a:

- 25% (1 in 4) chance any of their children will have **hemoglobin SC disease (SC)**.
- 25% (1 in 4) chance any of their children will have **sickle cell trait (AS)**.
- 25% (1 in 4) chance any of their children will have **hemoglobin C trait (AC)**.
- 25% (1 in 4) chance any of their children will be **unaffected (AA)**.



If you have questions about you or your family's trait/disease status, please contact our genetic counselor: **Kristin Clemenz, MS: 312-227-4817**

If you have questions or concerns about your child's health and/or treatment, please contact the sickle cell care team: **312-227-4813 (M-F 9am to 5pm)**, **312-227-4000 (After hours, ask for hematologist on call)**

## The Comprehensive Sickle Cell Program

Division of Hematology, Oncology and Stem Cell Transplantation  
Ann & Robert H. Lurie Children's Hospital of Chicago  
225 East Chicago Avenue, Box 30  
Chicago, IL 60611

Lurie  
Children's  
Sickle Cell  
Program

