

Sickle Cell Trait:

What You Need to Know...



About 1 out of every 12 African Americans has sickle cell trait and about 1 out of every 100 Hispanics has sickle cell trait. It is possible for a person of any race or nationality to have sickle cell trait.

What is Sickle Cell Trait?

Sickle Cell Trait (AS) is an inherited condition which affects the hemoglobin in your red blood cells.

- Hemoglobin is a protein in red blood cells. The job of hemoglobin is to carry oxygen through the body.
- Each person inherits two hemoglobin genes—one from each parent. A normal gene will make normal hemoglobin (A). A specific change in the hemoglobin gene will make sickled hemoglobin (S).
 - » Red blood cells with normal hemoglobin (A) are doughnut shaped;
 - » Red blood cells with sickle hemoglobin (S) are sickle or half-moon shaped.
- People with sickle cell trait have both normal hemoglobin (A) and sickle hemoglobin (S) in their red blood cells.

What is a Gene?

Genes are the instructions in our DNA that tell our bodies how to function. For example, genes determine eye color, hair color, and height. We inherit half our genes from our mother and half from our father.



How do you know if you have Sickle Cell Trait (AS)?

A simple blood test called a hemoglobin electrophoresis can tell your sickle cell status. Talk with your healthcare provider if you have more questions about hemoglobin trait or if you want to be tested.

It is important to know if you have sickle cell trait.

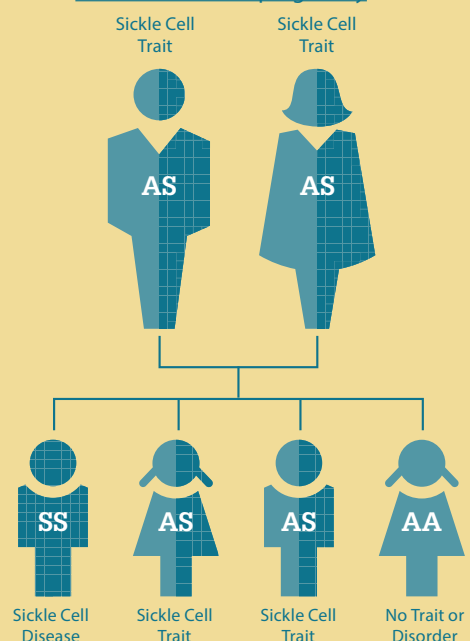
Sickle cell trait is inherited from your parents, like hair or eye color. If one parent has sickle cell trait, there is a 50% (1 in 2) chance with each pregnancy of having a child with sickle cell trait.

Sickle cell trait rarely causes any health problems. Some people may develop health problems under certain conditions, such as:

- Dehydration – from not drinking enough water
- Low oxygen – from over-exertion
- High altitudes – from low oxygen levels

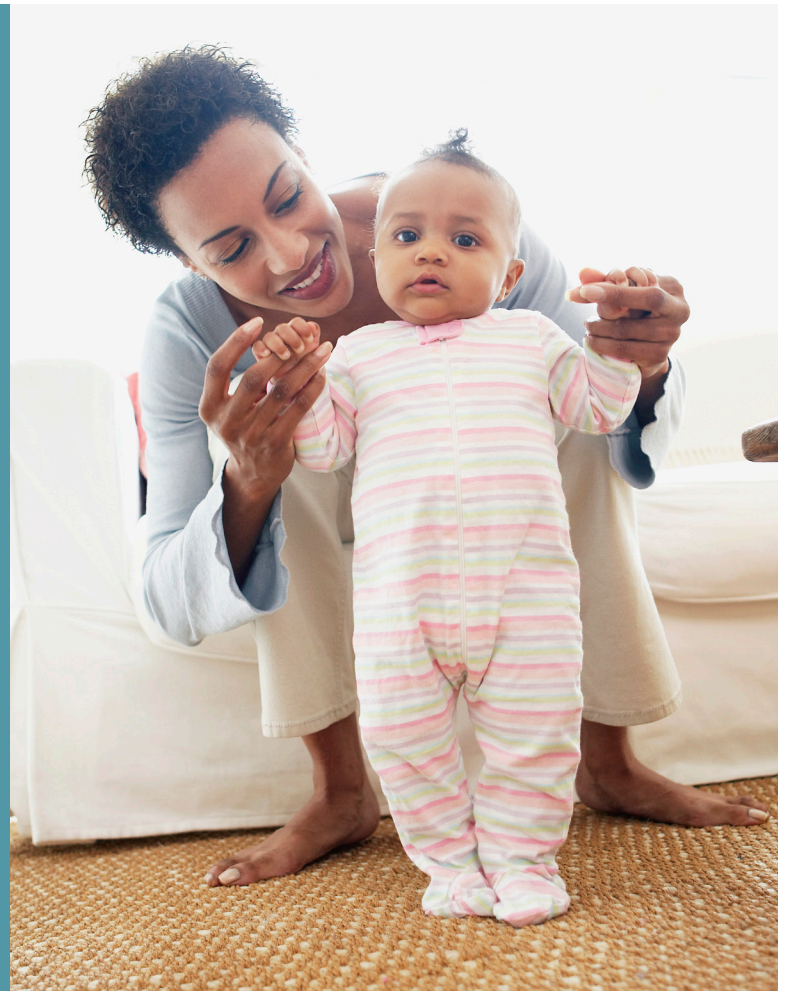
If both parents have sickle cell trait, there is a 25% (1 in 4) chance with each pregnancy of having a child with sickle cell disease. Sickle cell disease is a life-long illness that can result in serious health problems.

Chance with each pregnancy



What you should know if you have sickle cell trait...

1. You will carry sickle cell trait all your life
2. It is not a disease and cannot become sickle cell disease
3. Sickle cell trait rarely causes health problems
4. Sickle cell trait will not cause pain
5. Avoid extreme exercise, flying in unpressurized air crafts, or deep sea diving
6. You should alert your doctor about your sickle cell trait status if you are having surgery
7. Sickle cell trait will not cause anemia (low blood cell count, low hemoglobin) if this happens, talk to your healthcare provider
8. You can have hematuria (blood in the urine), but if this happens, make sure that other causes are considered too



Contact your local
Sickle Cell Disease organization or clinic at:

Minnesota Department of Health
Trait Educator
(651) 201-3548

Children's Hospitals & Clinics of MN- MPLS
(612) 813-5940

Duluth Clinic – Duluth
(218) 786-3625

Mayo Clinic – Rochester
(507) 284-2695

U of M Masonic Children's Hospital – MPLS
(612) 365-8100

Adapted with permission by the Minnesota
Department of Health's Newborn Screening
Program from the Sickle Cell Trait brochure created
by the Region 4 Midwest Genetics Collaborative's
Hemoglobinopathies Workgroup.



MDH Minnesota
Department of Health

www.health.state.mn.us/newbornscreening
email: health.newbornscreening@state.mn.us

The Region 4 Midwest Genetics Collaborative is funded by
the Health Resources and Services Administration (HRSA)
Maternal and Child Health Bureau (MCHB)
Cooperative Agreement H46MC24092.

The Region 4 Genetics Collaborative is a project of
the Michigan Public Health Institute.

Region 4 Midwest Genetics Collaborative includes Illinois,
Indiana, Kentucky, Michigan, Minnesota, Ohio, and Wisconsin