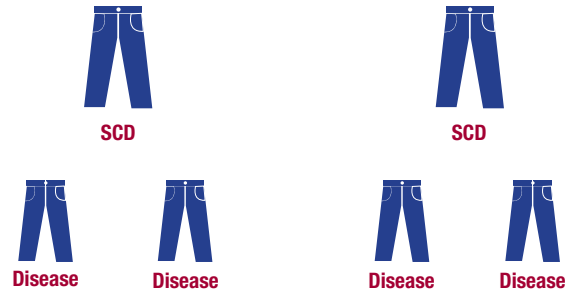


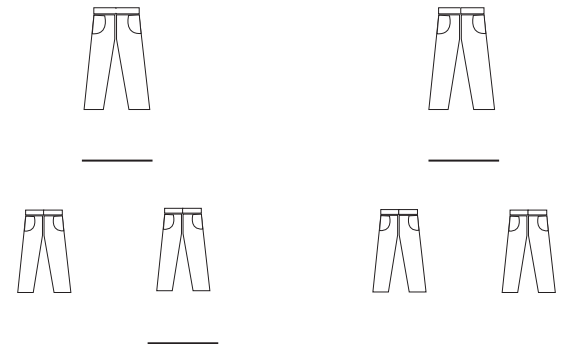
If my partner has sickle cell disease, hemoglobin SS disease, will my children inherit sickle cell disease?

Yes, your children will inherit sickle cell disease. If you have sickle cell disease and have a child with a person who has sickle cell disease (hemoglobin SS disease), all of your children will have sickle cell disease.



What will my children inherit?

- With each birth, what is your chance of having a child with sickle cell disease if your partner has sickle cell disease (SS) ____?
- With each birth, what is your chance of having a child with sickle cell disease if your partner has sickle cell trait (AS) ____?
- With each birth, what is your chance of having a child with sickle cell disease if your partner has normal hemoglobin (AA) ____?



Knowing your risk **before** you have a child will help you make wise decisions about family planning.



This document is not intended to replace counseling by a trained health care professional or genetic counselor. Our aim is to promote active participation in your care and treatment by providing information and education. Questions about individual health concerns or specific treatment options should be discussed with your doctor. For general information on sickle cell disease and other blood disorders, please visit our website at www.stjude.org/sicklecell.

Produced by the St. Jude Children's Research Hospital departments of Hematology, Patient Education, and Biomedical Communications.

Funds were provided by St. Jude Children's Research Hospital, ALSAC and a grant from the Plough Foundation.

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Produced by BMC revised 02/14 (S7614)

St. Jude Children's Research Hospital

Genes
for Teens with
**Sickle Cell
Disease**



What are genes?

- Genes determine specific traits that are passed down to you, or inherited, from your parents. These traits are things like eye color, hair color, skin tone, physical features, and the type of hemoglobin in your blood.
- Genes are pieces of DNA that help make you who you are.
- You inherit one set of genes from your mother and one set of genes from your father.

What is sickle cell disease?

- Sickle cell disease affects part of the red blood cells, called hemoglobin.
- Hemoglobin helps carry oxygen from the lungs to the rest of the body.

How are genes related to sickle cell disease?

- Everyone has 2 hemoglobin genes. One gene is passed down from the mother and one is from the father.
- People with sickle cell disease inherit a hemoglobin S gene from one parent and another abnormal hemoglobin gene from the other parent.

What is sickle cell trait, and how is it different from the disease?

People with sickle cell trait, called AS, inherit the normal hemoglobin A gene from one parent and an abnormal hemoglobin S gene from the other parent.

- Having the sickle cell trait does not mean you have sickle cell disease.
- If you have the trait, you can pass it to your child.
- If you and your partner both have the trait, you might have a child with sickle cell disease.

Are there different types of sickle cell disease?

Yes, sickle cell disease is a name for a group of disorders that have sickle hemoglobin. These are the most common types of sickle cell disease in the United States:

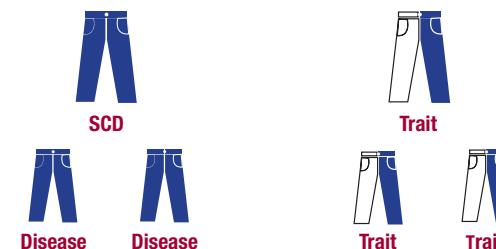
- ◀ Homozygous sickle cell disease (hemoglobin SS disease)
- ◀ Sickle hemoglobin C disease (hemoglobin SC disease)
- ◀ Two types of sickle beta thalassemia disease:
 - Sickle beta plus thalassemia disease (hemoglobin S β ⁺ disease)
 - Sickle beta zero thalassemia disease (hemoglobin S β ⁰ disease)

How did I inherit sickle cell disease?

- People can inherit sickle cell disease in 3 different ways:
 - If both parents have sickle cell trait (AS) or
 - If one parent has sickle cell trait (AS) and the other parent has another abnormal hemoglobin gene.
 - If both parents have sickle cell disease.
- If you have hemoglobin SS disease, you inherited 2 hemoglobin S genes; one from each parent.
- If you have hemoglobin SC disease, you inherited a hemoglobin S gene from one parent and a hemoglobin C gene from the other parent.
- If you have hemoglobin S β disease, you inherited a hemoglobin S gene from one parent and a hemoglobin β gene from the other parent.

If my partner has sickle cell trait, will my children inherit sickle cell disease?

Yes, your children may inherit sickle cell disease. If you have sickle cell disease, and your partner has sickle cell trait, with each birth there is a 1 out of 2 chance that your children will inherit a hemoglobin disease (50 percent chance). There is also a 1 out of 2 chance that your children will inherit a hemoglobin trait.



If my partner has normal hemoglobin A, will my children inherit sickle cell disease?

No, if you have sickle cell disease and your partner has normal hemoglobin A, each child will inherit a hemoglobin trait. You will not have a child with sickle cell disease if your partner has normal hemoglobin A.

