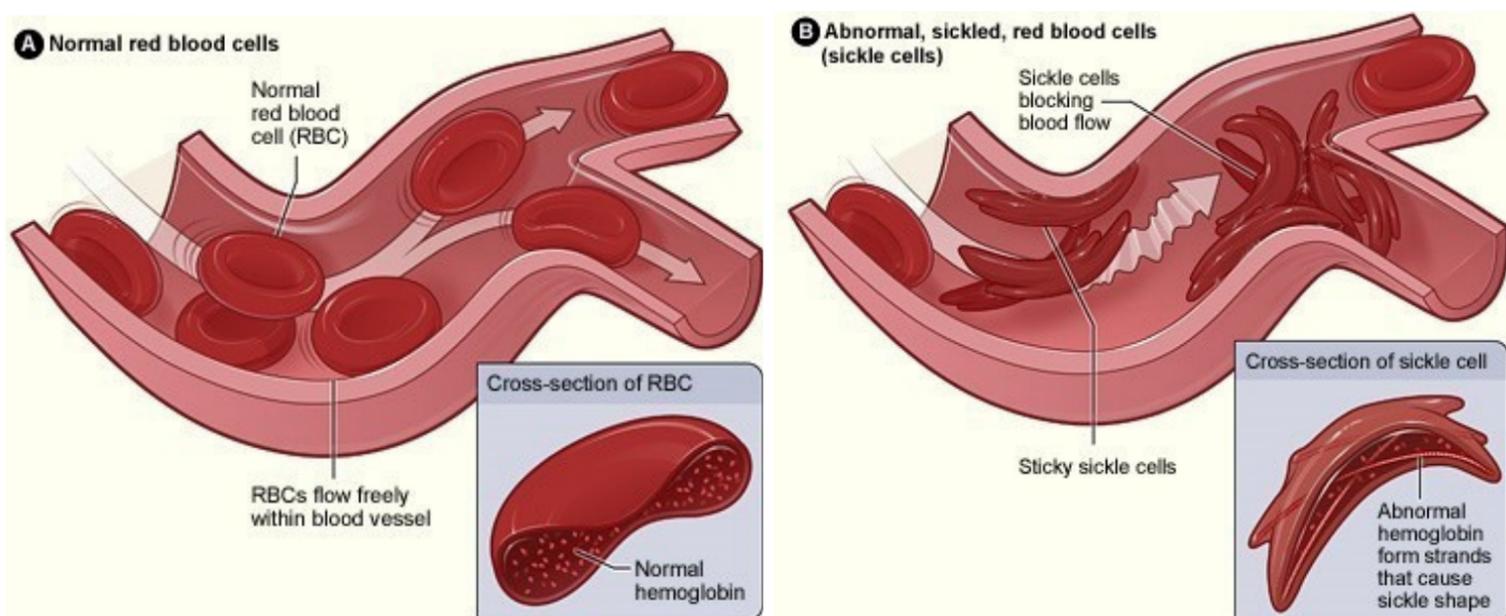


# Genetics: Sickle beta plus thalassemia

Sickle beta plus thalassemia (THAL-UH-SEE-ME-AH) is a blood condition that is similar to sickle cell anemia. Sickle cell anemia 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 even stroke.

## 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.

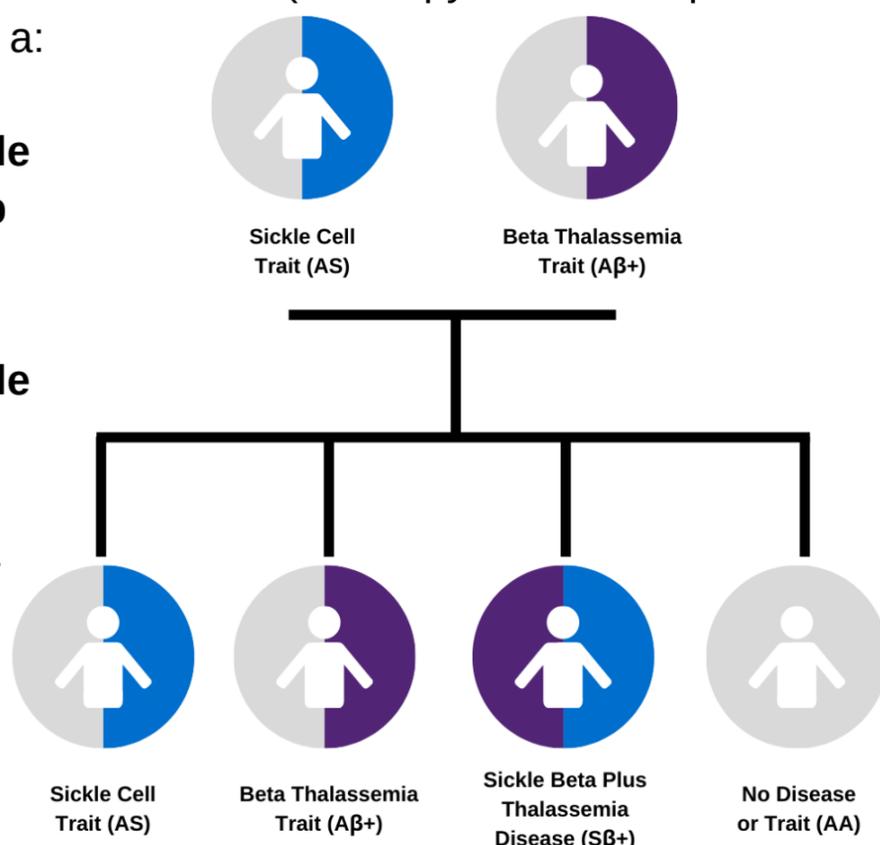
**Beta thalassemia** causes your child's body to make less normal hemoglobin (Hb-A). When this happens, your child's body makes more sickled cells and has symptoms similar to sickle cell anemia. The amount of sickled cells is different in each child with beta thalassemia. When a person has one copy of Hb-S and one copy of beta thalassemia, it is called sickle beta thalassemia. **In general, people who have sickle beta plus thalassemia make more normal hemoglobin than people who have sickle beta zero thalassemia.**

## How does a person get sickle beta plus thalassemia?

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

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

- 25% (1 in 4) chance any of their children will have **sickle beta plus thalassemia (Hb S $\beta$ + Thal).**
- 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 **beta thalassemia trait.**
- 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  
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