

A 3D illustration of several red blood cells, which are biconcave discs, floating against a dark background. The cells are rendered in a vibrant red color with a textured surface.

HEMOGLOBIN E

What is Hemoglobin?

Hemoglobin is the part of the blood that carries oxygen from the lungs to all parts of the body. There are different types of hemoglobin. Your hemoglobin type comes from the genes you inherit from your parents. Genes are instructions in each of our cells that determine a person's traits such as eye color, blood type and risk of disease. Hemoglobin A is the most common type and is normal.

What is Hemoglobin E Trait?

Hemoglobin E is not a disease and has nothing to do with sickle cell. Individuals with hemoglobin E trait (AE) test positive as a carrier of the gene. It occurs when a normal gene (hemoglobin A) is inherited from one parent and the Hemoglobin E gene is passed down from the other parent. Hemoglobin E trait (AE) does cause some of the red blood cells, called target cells, to look like a bull's eye on a dartboard. These target cells cause no problems and do not need special medical care.

Hemoglobin E is a type of hemoglobin that is common in people of southeastern Asian ancestry, including Thailand, Malaysia, Indonesia, Vietnam, Cambodia and Laos. People from southern China, the Philippines, India and Turkey can also carry Hemoglobin E.

What is Hemoglobin E Disease?

Hemoglobin E disease is a mild, inherited red blood cell disorder. People with this condition may have very mild anemia, but the condition typically does not cause any symptoms. Most people with hemoglobin E disease do not need any treatment.



Sickle Cell Foundation of Georgia, Inc.

2391 Benjamin E. Mays Dr. SW | Atlanta, GA 30311 | Phone: 404.755.1641 | Fax: 404.755.7955



HEMOGLOBIN E

Family Planning

This information is important for those who are planning to have children, particularly those of Southeastern Asian ancestry. Children born into your family may be at risk for a disease.

If both parents have Hemoglobin E Trait (AE), for each pregnancy there is a 25% chance that the child will have Normal (AA); a 50% chance the child will have Hemoglobin E Trait (AE); and a 25% chance for Hemoglobin E Disease (EE).

If one parent has Hemoglobin E Trait (AE) and one has Hemoglobin E Disease (EE), there is a 50% chance that the child will have Hemoglobin E Trait (AE) and a 50% percent chance the child will have Hemoglobin E Disease (EE).

If one parent has Hemoglobin E Trait (AE) and one has Beta Thalassemia Trait (A β Thal), then there is a 25% chance the child will have Normal (AA); a 25% chance the child will have Hemoglobin E Trait (AE); a 25% chance the child will have Beta Thalassemia Trait (A β Thal); and a 25% chance the child will have Hemoglobin E Beta Thalassemia Disease (E β Thal).

If one parent has Hemoglobin E Trait (AE) and one has Sickle Cell Trait (AS), then there is a 25% chance the child will have Normal (AA); a 25% chance the child will have Hemoglobin E Trait (AE); a 25% the child will have Sickle Cell Trait (AS); and a 25% chance the child will have Sickle Cell Hemoglobin E Disease (SE).

What do I do now?

Get yourself and family tested to see if you carry the trait for an abnormal hemoglobin. If you take the test, ask your provider to perform a hemoglobin electrophoresis for accurate results. See your provider or call the Foundation for genetic counseling about your test results. This provides you with the facts to make an informed decision before having children.

Visit sicklecellga.org



Sickle Cell Foundation of Georgia, Inc.

2391 Benjamin E. Mays Dr. SW | Atlanta, GA 30311

Phone: 404.755.1641 | Fax: 404.755.7955

