

# Hemoglobin E Trait:



# What You Need to Know...

Hemoglobin E trait is common and can occur in any race or ethnicity. It is most common in individuals of Southeast Asian descent. You may have heard of sickle cell trait before, while not exactly the same, sickle cell trait and hemoglobin E trait are similar.

## What is hemoglobin E trait?

Hemoglobin E trait (AE) 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 hemoglobin E (E).
  - » Red blood cells with normal hemoglobin (A) are doughnut shaped;
  - » Red blood cells with hemoglobin E (E) are smaller than normal.
- People with hemoglobin E trait have both normal hemoglobin (A) and hemoglobin E (E) 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 hemoglobin E trait (AE)?

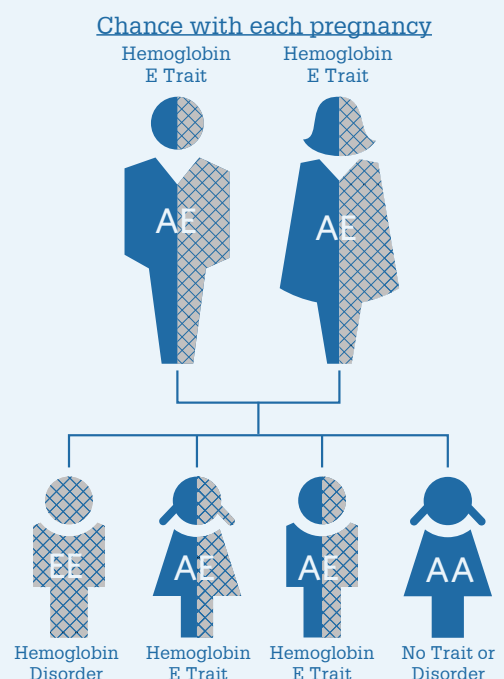
A simple blood test called a hemoglobin electrophoresis can tell your hemoglobin type. Talk with your healthcare provider if you have more questions about hemoglobin trait or if you want to be tested.

## It is important to know if you have hemoglobin E trait.

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

**Hemoglobin E trait is not a disease**, and usually has no symptoms. You may have hemoglobin E trait and not know it.

If both parents have an abnormal hemoglobin trait, like hemoglobin E trait, there is a 25% (1 in 4) chance **with each pregnancy** of having a child with a hemoglobin disorder. Hemoglobin disorders are life-long illnesses that can result in serious health problems.



## What you should know if you have hemoglobin E trait...

1. You will always have trait.
2. It is not a disease and can never become a disease.
3. Hemoglobin E trait does not cause health problems.
4. Hemoglobin E trait will not cause anemia (low blood cell count, low hemoglobin count) if this happens, talk to your health care provider.
5. It is important to know your hemoglobin trait status for future family planning for yourself and your family.



Contact your local hemoglobin specialist at:

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.



**Region 4**  
Midwest Genetics  
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