

## Hemoglobin E

### What is hemoglobin?

Hemoglobin is the part of red blood cells that carries oxygen to all parts of the body. The usual type of hemoglobin is called hemoglobin A. Genes that we inherit from each of our parents determine what type of hemoglobin we have.

### What is hemoglobin E?

Hemoglobin E is a hemoglobin protein that is very slightly different from the common Hemoglobin A, and shows up separately on special testing. It is different in that it behaves like a mild beta thalassemia trait. Thus Hemoglobin E itself can cause mild anemia with small red cells, but is not a disease.

### What is hemoglobin E trait?

Hemoglobin E trait means one gene for the usual hemoglobin (A) is inherited from one parent and one gene for hemoglobin E from the other parent, and the resulting mild anemia with small red blood cells and no symptoms is often mistaken for iron deficiency anemia. When someone inherits the gene for hemoglobin E from both parents, that person has homozygous (same genes) hemoglobin E. People with homozygous hemoglobin E have mild anemia with small red blood cells that is more severe than in trait but still does not cause problems.

### If homozygous and trait hemoglobin E do not cause problems, why do I need to know about it?

It is important to know about your (or your child's) hemoglobin E status because if someone with hemoglobin E marries someone with beta thalassemia trait then his or her children may be at risk for having hemoglobin E-beta thalassemia. You (or your child) does not have hemoglobin E-beta thalassemia.

### What is hemoglobin E-beta thalassemia?

When a person inherits one gene for hemoglobin E from one parent and one gene for "beta thalassemia" (low production of hemoglobin) from the other parent, it causes beta thalassemia with small red cells, anemia and a large spleen which may be severe enough to need red cell transfusions. It is particularly common in the East of India, in Bengal and neighboring states.

### What can I do if I have more questions?

If you have more questions, you can discuss these with your (or your child's) hematologist at QURE Hematology Clinic