

Hemoglobin D

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 D?

Hemoglobin D means the hemoglobin protein is slightly different from the common Hemoglobin A, and will show up separately on testing. It was originally described from Punjab and from Los Angeles, and although it is different it behaves like normal hemoglobin A. Hemoglobin D does not cause anemia and is not a disease.

What is hemoglobin D trait?

Hemoglobin D trait means one gene for the usual hemoglobin (A) is inherited from one parent and one gene for hemoglobin D from the other parent, and there are no symptoms. When someone inherits the gene for hemoglobin D from both parents, the person has homozygous (same genes) hemoglobin D. People with homozygous hemoglobin D also have no health problems, but it may cause mild anemia in the first few months of life.

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

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

What is hemoglobin D-beta thalassemia and hemoglobin SD disease?

When a person inherits one gene for hemoglobin D from one parent and one gene for "beta thalassemia" (low production of hemoglobin) from the other parent, it causes mild thalassemia with small red cells, anemia and a larger spleen. Similarly, if a person inherits one gene for hemoglobin D and one gene for sickle cell disease it causes mild sickle cell disease with infrequent pain crises.

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