Q: Why did my baby have this test?
A: All babies born in Connecticut have this test to check for Sickle Cell Trait, Hemoglobin C Trait, or Sickle Cell Disease.

Q: What is Hemoglobin?
A: To understand Hemoglobin C, it is helpful to understand a little more about our blood. Hemoglobin is a protein found in red blood cells that carries oxygen and gives blood its red color. The way hemoglobin is made in the body depends on the genes a child gets from both parents. Most people have the type of hemoglobin called hemoglobin A (also called normal or adult hemoglobin). However, there are many different types of hemoglobin found in people throughout the world. Hemoglobin C is one type; sickle hemoglobin is another type.

HEMOGLOBIN C TRAIT

Q: What is Hemoglobin C Trait?
A: Babies with Hemoglobin C Trait have some red blood cells that look like a bull’s eye, and are called target cells.

Q: Will Hemoglobin C Trait make my baby sick?
A: No! Hemoglobin C Trait is not a sickness. It is good to know about it. But it should not cause health problems for your baby.

Q: How do babies get Hemoglobin C Trait?
A: If the baby gets a C gene from one parent and a non-C gene from the other parent, the baby has Hemoglobin C Trait. Parents pass the C genes on to their children the same way they pass on the genes for skin color or eye color.

If both parents have Hemoglobin C Trait

| A = Normal Hemoglobin Gene / C = Hemoglobin C Gene |

<table>
<thead>
<tr>
<th>C Trait</th>
<th>Parents</th>
<th>C Trait</th>
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<tbody>
<tr>
<td></td>
<td>A</td>
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<th>Children</th>
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<tr>
<td>A A</td>
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<td>A C</td>
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Both Hemoglobin A genes
1 in 4 chance with each pregnancy of having a baby with 2 normal hemoglobin genes

Hemoglobin C Trait
2 in 4 chance with each pregnancy of having a baby with Hemoglobin C Trait

Hemoglobin C Disease
1 in 4 chance with each pregnancy of having a baby with Hemoglobin C Disease.
HEMOGLOBIN C DISEASE

Q: What is Hemoglobin C Disease?
A: If the baby gets a Hemoglobin C gene from both parents, only hemoglobin C is made in the body. When only Hemoglobin C is present, the red blood cells are broken down in the body a little faster than usual. This can cause mild to moderate anemia, but people with Hemoglobin C Disease usually have no serious health problems. It will still be important for your baby to have regular medical care.

SICKLE HEMOGLOBIN C DISEASE

Q: What is Sickle Hemoglobin C Disease?
A: Sickle Hemoglobin C Disease is also known as “SC Disease”. SC Disease is a kind of Sickle Cell Disease. Children with SC Disease will need special medication and special medical care throughout their life. Babies with SC Disease get the C gene from one parent and the Sickle Cell gene from the other parent.

It can cause a higher risk of certain infections, painful episodes, and an enlarged spleen. This disease causes the red blood cells to sometimes change from a very flexible round shape into a rigid crescent or “sickle” shape. Sickle-shaped red blood cells can prevent the usual flow of blood and oxygen to body organs. It is very important that people with Sickle Hemoglobin C Disease receive regular medical care.

If one parent has Hemoglobin C Trait and one parent has Sickle Trait

A = Normal Hemoglobin Gene / C = Hemoglobin C Gene / S = Sickle Gene

Parents

C Trait

Sickle Trait

Children

Hemoglobin C Trait: 1 in 4 chance with each pregnancy of having a baby with C Trait
Sickle Trait: 1 in 4 chance with each pregnancy of having a baby with Sickle Trait
SC Disease - 1 in 4 chance with each pregnancy of having a baby with SC Disease if one parent has C Trait and one has Sickle Trait

PARENTS

Q: Do all parents have C genes?
A: No, C genes run in some families and not in others. We find C genes mostly in people from Africa, the Caribbean Islands, Greece, Malta, Sardinia, Turkey, Sicily, and Southern Asia. Families who trace their roots to these places might carry the C gene.

Q: How can parents know if they have the Hemoglobin C gene or S gene?
A: You have to ask for a special blood test, called Hemoglobin electrophoresis. A little blood will be taken from your finger or arm. Ask your doctor or health care clinic.

FOR MORE INFORMATION CONTACT:

Yale/New Haven Hospital
Sickle Cell Service 203-785-4640

Connecticut Children’s Medical Ctr.
Sickle Cell Service 860-545-9630

CT Department of Public Health
860-509-8081