



8945 Ridge Avenue
Suite 3 - 4 - 5
Philadelphia, PA 19128
215-483-8558
andorrapediatrics.com

Alpha Thalassemia Trait

Will alpha thalassemia trait make my baby sick?

No. Alpha thalassemia trait, alpha thal trait for short, is not an illness. Your baby will not have to get special medical care because of alpha thal trait.

Alpha thal trait may be diagnosed when a child has a routine complete blood count (CBC). The CBC may show a low hemoglobin and low MCV. Another blood test called an alpha gene analysis, will help to make the final diagnosis. A low hemoglobin and low MCV can also be caused by iron deficiency.

Before your baby takes iron, she should have her blood iron level checked. If her iron level is low, it will be all right to give her iron. A child with alpha thal trait, low hemoglobin and normal iron levels, does not require iron treatment.

What is thalassemia?

Thalassemia is a disease of red blood cells. People with thalassemia do not make enough hemoglobin. This results in a low hemoglobin (anemia) and red blood cells that are smaller in size and paler than normal.

There are mild, moderate, and severe forms of thalassemia. Alpha thal trait is a mild form of thalassemia. Alpha thal trait is found equally in both boys and girls.

How did my baby get alpha that trait?

She inherited alpha thal trait the same way she got the color of her eyes, the shape of her nose and the texture of her hair. Genes are the building blocks that determine the make-up of your baby. She got it from the genes that her mother and father passed on to her.

Each person has four alpha genes, two from each parent. If a baby has only two alpha genes, she has alpha thal trait.

Your baby probably got one alpha gene from each parent, or perhaps she got two from one parent

and none from the other. In either case, she ended up with two instead of four alpha genes.

What exactly is hemoglobin?

Hemoglobin is inside the red blood cells. It helps them carry oxygen from the air in our lungs to all parts of the body. Hemoglobin also gives blood its deep red color. Hemoglobin is made up of two parts: Proteins called globin, and iron chemicals called heme: (Heme + globin = Hemoglobin)

What is alpha thalassemia?

The usual hemoglobin in our red blood cells is hemoglobin A. Hemoglobin A is made of two types of globin: alpha and beta. In alpha thalassemia, not enough alpha globin is made in the red blood cells.

Alpha thal trait - what does that really mean?

Alpha thal trait is a mild form of alpha thalassemia. In alpha thal trait, there is enough alpha globin for normal health.

Your baby may have a slightly lower hemoglobin (anemia). Her red blood cells might be a little small in size and look paler. None of these things will make her sick or require special medical attention.

Alpha thal trait is more common in people from tropical and sub-tropical parts of the world.

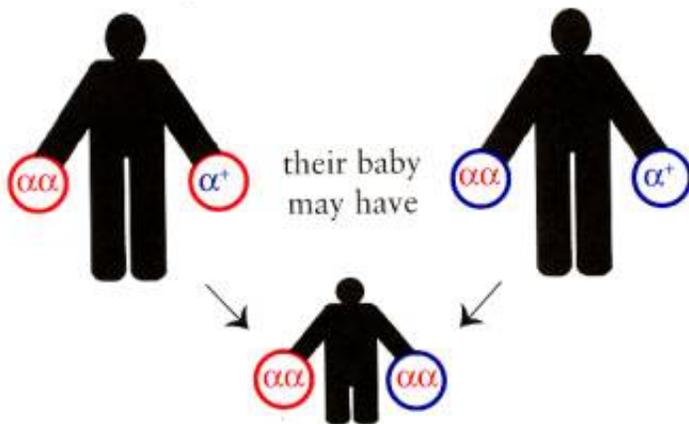
Should we, the parents, take a blood test?

Before you have your next baby, we suggest that you and your partner get special blood tests. We all have two sets of genes for hemoglobin. One set is passed on to the baby from each parent.

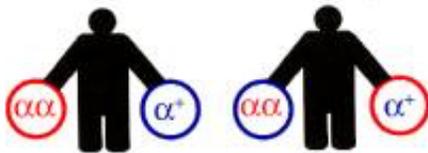
Only if both you and your partner are tested can you know exactly what kind of hemoglobin condition your next child could have. Look carefully at the inheritance pattern for the possibilities of having a baby with alpha thalassemia.

Inheritance Pattern for Alpha Thalassemia

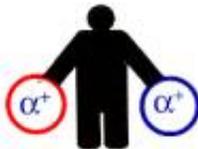
When each parent is a “silent” carrier of alpha thalassemia ($\alpha\alpha/\alpha^+$)



$\alpha\alpha/\alpha\alpha$ (normal alpha gene number, 4)
or



$\alpha\alpha/\alpha^+$ (silent carrier of alpha thalassemia;
alpha gene number, 3)
or



α^+/α^+ (alpha thalassemia trait;
alpha gene number, 2)

Note: Alpha genes are inherited in pairs, one pair ($\alpha\alpha$) from each parent. A person with normal alpha genes has four ($\alpha\alpha/\alpha\alpha$). Alpha thalassemia may result in a total of 3, 2, 1 or 0 alpha genes. There are two common types of alpha thalassemia:

alpha-plus (α^+) and alpha-zero (α^0)

In α^+ thalassemia, one of the 2 α genes is removed (deleted) α^- ; and, in α^0 thalassemia, both α genes are deleted --. In this example we have shown alpha-plus (α^+) thalassemia.

Prepared by Janet Fithian and Kwaku Ohene-Frempong, M.D. Comprehensive Sickle Cell Center, The Children's Hospital of Philadelphia, for the Sickle Cell Disease Association of America

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