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Parent Information Guide:

Thalassaemia trait and iron deficiency: information for parents

What is thalassaemia trait?

Thalassaemia trait (also called being a *thalassaemia carrier*) means a child has inherited a change in one of the genes that helps make haemoglobin, the protein in red blood cells that carries oxygen. Children with thalassaemia trait are usually well. They may have smaller red blood cells and sometimes a mild anaemia, but this is not the same as thalassaemia disease, and it usually does not need treatment.

Why can it look like iron deficiency?

Both thalassaemia trait and iron deficiency can cause red blood cells to look small and pale on a blood test. This means thalassaemia trait can sometimes be mistaken for iron deficiency anaemia, and iron deficiency can also make it harder to confirm whether a child has thalassaemia trait.

Why is it important to correct iron deficiency first?

For beta thalassaemia trait, one of the main laboratory clues is a raised HbA2 level on haemoglobin analysis. If a child is iron deficient, the HbA2 level can be lower than expected, which may mask beta thalassaemia trait and make the test look normal or less clear than it really is. For that reason, if iron deficiency is present, it should usually be treated first, and thalassaemia testing may then need to be repeated after iron stores have recovered.

What usually happens in practice?

If a child has small red blood cells on a blood test, clinicians will often check iron studies, especially ferritin [a blood test that helps show the body's iron stores]. If iron deficiency is found, this is treated first. Once the iron deficiency has been corrected, repeat blood tests or haemoglobin analysis may be more reliable for checking for thalassaemia trait.



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Does thalassaemia trait itself need treatment?

Thalassaemia trait itself usually does not need treatment. Children with thalassaemia trait do not need iron supplementation; However, iron deficiency does need treatment if it is present. Iron should be given but only when blood tests show true iron deficiency. Taking prescribed iron supplementation when it is not needed is not helpful, and may be even harmful.

Why does knowing about thalassaemia trait matter?

Knowing that a child has thalassaemia trait can help avoid repeated worry about “low iron” when the real cause is inherited small red blood cells. It can also become important later in life, because carrier testing may be relevant for family planning if a future partner is also a carrier.

Key messages for parents

- Thalassaemia trait is common, inherited, and usually does not make a child unwell.
- It can look like iron deficiency on a routine blood count.
- Iron deficiency should be identified and must be treated first before relying on testing for beta thalassaemia trait, because iron deficiency can affect the result.
- Do not start iron supplements unless a clinician has confirmed iron deficiency with blood tests.

When should you seek medical advice?

Please speak to your GP or paediatrician if your child has:

- tiredness, pallor, poor appetite, or other symptoms of anaemia,
- a blood test showing persistent small red blood cells,
- a family history of thalassaemia, or
- blood results suggesting iron deficiency that do not improve as expected.

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