

Iron Deficiency Anaemia

Overview - What is iron deficiency?

Iron deficiency is the most common cause of anaemia (decrease in the number of red blood cells), affecting over one billion people in the world. Iron is essential for the formation of haemoglobin, the main component of red blood cells. Haemoglobin is essential to carry oxygen from the lungs to all tissues in the body.

Where does iron come from?

Iron comes from the diet. Sources of food containing high levels of iron include red meat and liver. Smaller amounts are found in white meats/fish, fortified breakfast cereals, beans, seeds/pulses, green vegetables, tofu and eggs.

How is iron deficiency diagnosed?

Blood tests measuring the body stores of iron (serum ferritin level) diagnose iron deficiency. When the level of red blood cells is also reduced, this is diagnostic of iron deficiency anaemia. Sometimes other blood tests are required to diagnose iron deficiency in circumstances when the ferritin level may be falsely raised.

What are the symptoms of iron deficiency anaemia?

Iron deficiency commonly causes tiredness, fatigue and pale skin. If severe, it can also cause breathlessness on exertion, hair changes/hair loss, nail changes, tinnitus (ringing in the ears) and occasionally strange cravings for non-food substances (pica). This is most commonly a craving for ice, but can also include dirt, coal and other substances.

What are the causes of iron deficiency?

The main causes of iron deficiency are:

1. **Inadequate iron in the diet.** Usually this affects people who are vegetarian/vegan or do not eat any red meat. This is easily remedied by modifying diet or taking iron supplements.
2. **Increased iron requirements** eg. Pregnancy, growing children, athletes.
3. **Reduced absorption of iron from the digestive system.** This most commonly happens due to coeliac disease (gluten intolerance), but can also occur due to other intestinal disorders or following intestinal surgery. It has been recently recognised that a bacteria (*H.pylori*) that can cause intestinal ulceration, can also affect iron absorption and eradication of the bacteria (with antibiotics) can reverse iron deficiency in some people
4. **Increased iron loss.** This is most commonly due to blood loss. Increased menstrual bleeding is a common cause of iron deficiency in women. In men and post-menopausal women, the most common cause for blood loss is bleeding from the intestine. Regular blood donors are at increased risk of iron deficiency.

What tests are done to identify the cause for iron deficiency?

The doctor will ask questions to identify the most likely reason for iron deficiency from the above list. Tests would be guided by the most likely reason and may include blood tests (to identify absorption problems), investigations to identify blood loss from the intestine (stool test for blood), telescope tests on the upper and lower intestine (gastroscopy and/or colonoscopy) or ultrasound of the pelvis in women with increased menstrual bleeding.

How is iron deficiency treated?

Iron deficiency is treated by taking iron replacement treatment.

Iron Replacement Therapies:

- If the reason for iron deficiency is inadequate iron intake, or increased iron loss, this can usually be given as tablet iron replacement.
- If the iron deficiency is due to reduced absorption from the intestine, tablet (oral) iron replacement may be ineffective. In this case (or if iron tablets cause significant side effects), iron replacement is given through the vein (intravenous).

- There are several safe iron preparations for intravenous administration; the treatment may be given in a hospital or at a doctor's surgery, depending on the available facilities. Injections of iron into the muscle (usually into the arm or buttock) are not recommended, as they may cause permanent discolouration of the skin, and are usually painful).

When is a blood transfusion needed?

A blood transfusion is different to iron replacement therapy. A blood transfusion is "pre-made" red blood cells from another person. As such it works much quicker than iron replacement therapy (where your own body makes the new red blood cells after the iron is given), but there are potential side effects from transfusions, and blood is a precious resource. Blood transfusions in iron deficiency are used only for severe anaemia, with associated symptoms related to the heart or lungs (chest pains, palpitations, and breathlessness).

Will the iron deficiency recur?

It is essential to identify the underlying cause for the iron deficiency anaemia. If this is identified and treated (eg. Diet changes, treatment for blood loss from the intestine), the iron deficiency will not recur.

Regular blood tests are recommended after treatment of iron deficiency, to monitor iron levels and identify drop in iron levels, prior to the development of anaemia.

Resources used to produce this information sheet.

- *Diagnosis and management of iron deficiency anaemia: a clinical update:*
<https://www.mja.com.au/journal/2010/193/9/diagnosis-and-management-iron-deficiency-anaemia-clinical-update>
- *Iron-are you getting enough?*
http://www.ausport.gov.au/ais/nutrition/factsheets/basics/iron_-_are_you_getting_enough
- *Oral preparations for iron deficiency anaemia treatment*
http://www.transfusion.com.au/transfusion_practice/anaemia_management/iron_deficiency_anaemia/oral_preparations

Last Updated: June 2, 2014

FURTHER QUESTIONS?

The information presented in this fact sheet is intended as a general guide only.

Patients should seek further advice and information about **iron deficiency anaemia** and their individual condition from their treating haematologist or doctor.

APPOINTMENTS

To make an appointment with a Melbourne Haematology specialist, please phone **03 9386 1360**

For additional information about blood disorders and their treatment, or to find out more about our specialist haematologists, visit the Melbourne Haematology website: www.melbournehaematology.com.au