



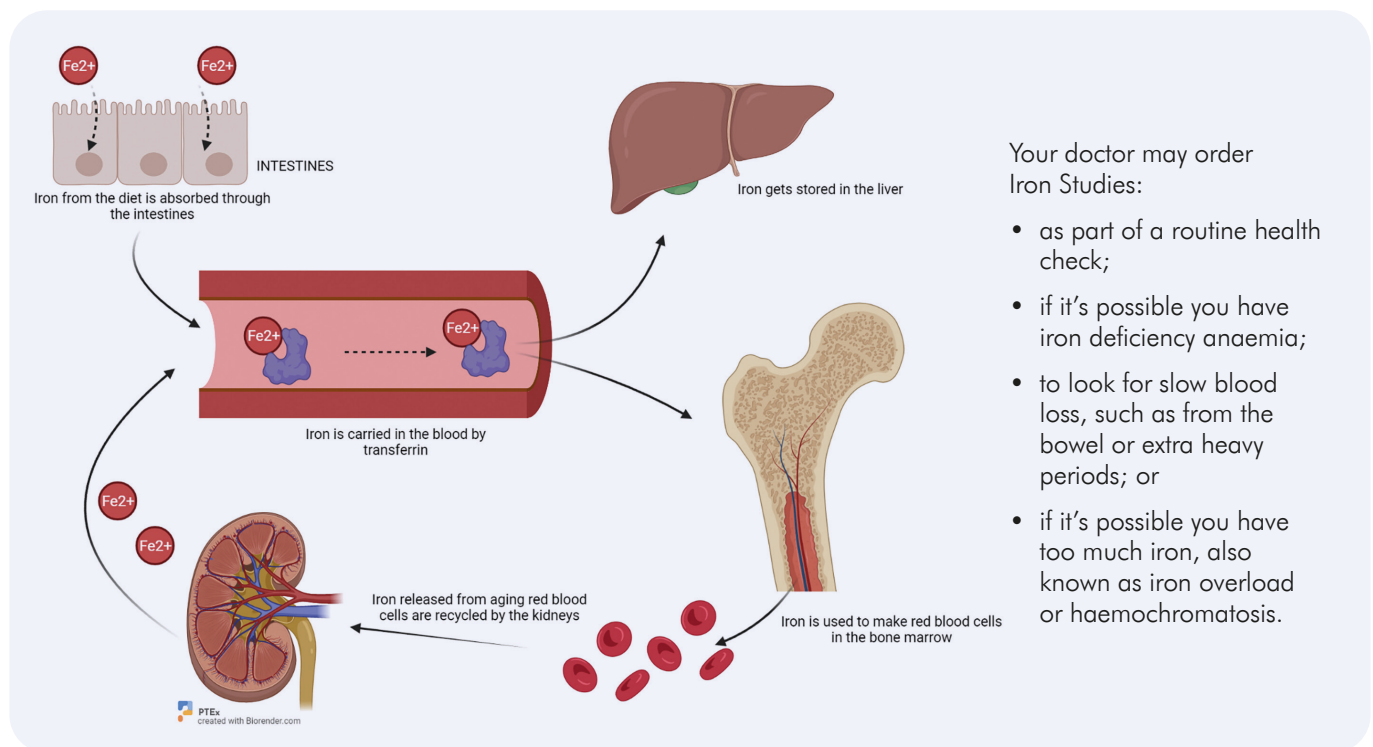
PATHOLOGY TESTS EXPLAINED

Information about pathology tests to help everyone take control of their health and make the right decisions about their care.

WHAT YOU SHOULD KNOW ABOUT YOUR **IRON STUDIES**

Iron Studies are a group of tests performed on the same blood sample. Together, they measure the amount of iron in your body.

Often Iron Studies are ordered along with other tests such as the Full Blood Count and Liver Function Tests. Iron is vital to health. Iron is used in many body processes. Its main job is to form part of haemoglobin, a substance in red blood cells that takes up oxygen from the lungs and releases it as the blood travels around the body.



Your doctor may order Iron Studies:

- as part of a routine health check;
- if it's possible you have iron deficiency anaemia;
- to look for slow blood loss, such as from the bowel or extra heavy periods; or
- if it's possible you have too much iron, also known as iron overload or haemochromatosis.



Iron deficiency anaemia

If you don't have enough iron, you can't produce the haemoglobin needed to take oxygen around your body. This is called iron deficiency anaemia, and it may leave you tired and short of breath. Low iron levels can be caused by many things including monthly periods, pregnancy, and bleeding in the stomach and intestines such as in inflammatory bowel disease and bowel cancer.



Iron overload and haemochromatosis

Having too much iron in your body can cause damage to your heart, liver and pancreas as well as your joints. The most common reason for iron overload is the inherited disorder, haemochromatosis.

We take in iron from the food we eat. It is absorbed through our small intestines. We don't have a mechanism for removing iron from the body so it's important that it takes in just what it needs and no more. There is a finely tuned regulatory system for making sure it does that. In hereditary haemochromatosis there is a breakdown in the process that controls iron absorption. The body acts as if there is an iron shortage and responds by absorbing more from food. This means there is more iron being taken in but no mechanism to get rid of it.



What can your results tell you?

Iron Studies measures blood iron levels and two substances involved in transporting and storing iron.

By looking at the levels of each of these in relation to the others, and taking into account your symptoms and medical history, your doctor can put together a picture of what's going on.

Substance	Results
Serum iron This is the amount of iron in your blood serum, the liquid part of the blood.	The serum iron level is usually low in iron deficiency, but it can also be low due to other causes such as infections. Serum iron is usually high if you have iron overload, but it can also be high if you have recently eaten a lot of iron-rich foods such as steak or liver. Serum iron levels fluctuate throughout the day and are too variable for diagnosing iron disorders by serum iron alone.
Transferrin This is a protein that attaches to iron and transports it around the body.	It is difficult to interpret iron levels in the blood without knowing how much of this binding protein is also present. Instead of transferrin you might have a test for TIBC (total iron binding capacity) or UIBC (unsaturated iron-binding capacity) – they all measure the amount of iron that can be transported in your blood.
Transferrin saturation This is calculated from your serum iron and transferrin results. It shows the amount of iron that the transferrin is carrying as a percentage of its carrying capacity. This is a more accurate indicator of the amount of iron in the body than either the serum iron or transferrin tests alone.	If you have iron deficiency, your transferrin saturation result is likely to be low. If you have iron overload, it's more likely to be high. A higher transferrin saturation result can be the earliest sign of haemochromatosis.
Ferritin This is another protein that attaches to iron. The amount of ferritin in the blood serum is the best measure of the amount of iron stored in the body – mainly in the liver.	A low ferritin is almost always due to iron deficiency. However, ferritin levels can be misleading. If you have an inflammatory disease, especially liver inflammation, this can cause high ferritin levels even if there is no iron overload.



What are reference intervals (reference ranges)?

Some of your results are shown in your report as a comparison against a set of numbers called reference intervals or reference ranges. This is the range of test results considered 'normal' for the general population. If a result in your report is outside this range, it can be flagged as high (H) or low (L). This does not necessarily mean that anything is wrong and depends on your personal situation. Your results need to be interpreted by your doctor.



What if you have abnormal results?

A great many conditions can affect your iron levels and interpreting the many variations in test results is complex. Anaemia has many causes, as does iron overload. It's important to talk with your doctor about what the results mean for your personal situation.

Sometimes, tests need to be repeated to see if the results change over time. This can indicate whether your condition is getting better or worse and whether any treatment you are having is working. You may need further, different tests. For instance, if your doctor suspects haemochromatosis you may need an HFE gene test. (See the PTE_x information sheet on haemochromatosis for this.)

For more detailed information on these and many other tests go to pathologytestsexplained.org.au



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www.pathologytestsexplained.org.au

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Click on the link to find information about what your tests are investigating or measuring and what your results can tell your doctor.