i-screen

Sarah Hatcher

Your test results

Metabolic Balance Panel

Summary

Congratulations on taking the Metabolic Balance Panel which puts you in control of your health data!

Dr Matt Newport

Collection Date: 18 Sep 2023

Full blood count with differential

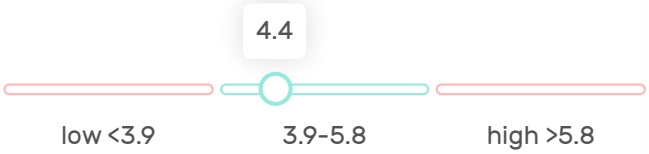
Your neutrophil count (a type of white blood cell) is slightly lower than normal. This is not necessarily of clinical significance in isolation, though may be due to a number of reasons including viral and bacterial infections, autoimmune diseases, vitamin B12 or folate deficiency, as well as certain medications.

A retest of your full blood count in 3 weeks may be considered - this should allow enough time for your results to normalise if this is due to a viral/bacterial infection - refer to our Full Blood Count for more information.

Your haemoglobin, other white cell subtype counts and platelets are normal.

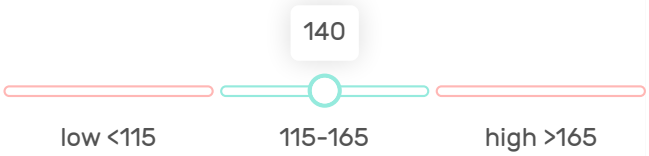
Red Blood Cell Count 4.4 x10*12/L

Responsible for carrying oxygen around the body. A high count can increase the risk of heart attack or stroke, whilst a low count can mean your body isn't getting the oxygen it needs.



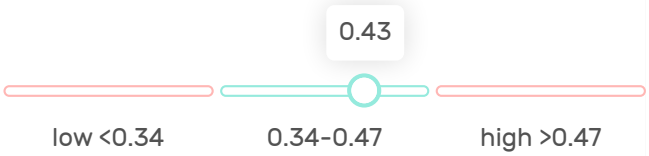
Haemoglobin 140 g/L

A good measure of your blood's ability to carry oxygen throughout your body. Elevated haemoglobin can be an indicator of lung disease, whilst a low result indicates anaemia.



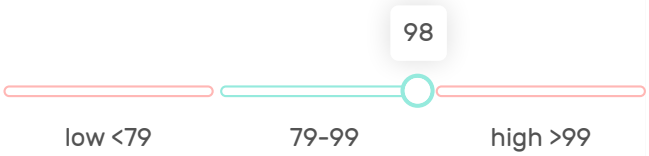
Haematocrit 0.43

A measure of the percentage of red blood cells in the total blood volume. Elevated haematocrit can increase the risk of heart attack or stroke.



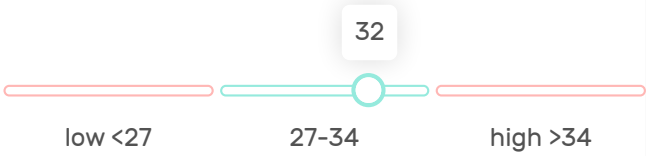
MCV 98 fL

MCV is a measure of the average size of the red blood cells. The MCV may be elevated in anaemia caused by vitamin B12 or folate deficiency. Whereas decreased MCV may be seen in iron deficiency anaemia for example.



MCH 32 pg

MCH is a calculation of the average amount of oxygen-carrying haemoglobin inside a red blood cell. Large red blood cells tend to have a higher MCH, while small red cells would have a lower value.

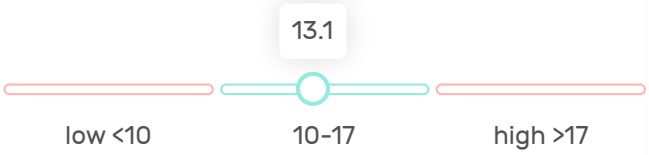


MCHC 324 g/L

MCHC is a calculation of the average concentration of haemoglobin inside a red cell. Decreased MCHC is seen in iron deficiency anaemia and conditions such as thalassaemia.

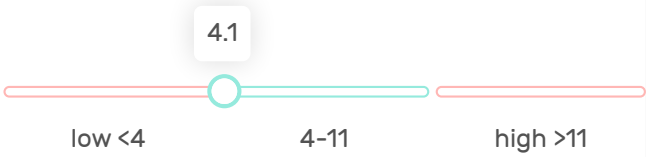
RDW 13.1 %

RDW is a calculation of the variation in the size of your red blood cells. A high RDW value may indicate the presence of certain medical conditions, such as anaemia, liver disease, or vitamin B12 or folate deficiency.



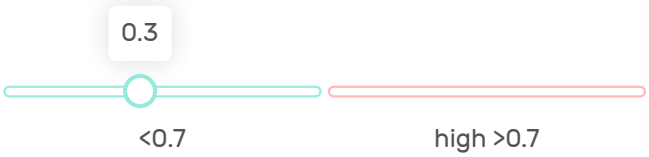
White Blood Cell Count 4.1 x10*9/L

Responsible for fighting infection. A high count can indicate recent infection and even stress, whilst a low count can result from vitamin deficiencies, liver disease and immune diseases.



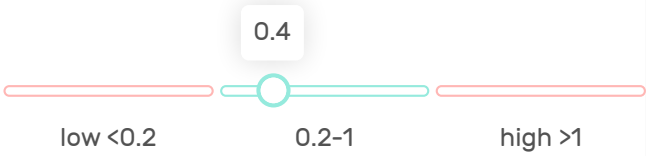
Eosinophils 0.3 x10*9/L

A type of white blood cell. Can increase in response to allergic disorders, inflammation of the skin and parasitic infections. They can also occur in response to some infections or to various bone marrow malignancies.



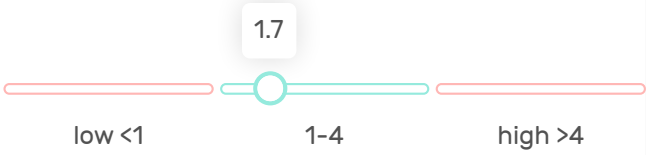
Monocytes 0.4 x10*9/L

A type of white blood cell. Can increase in response to infection as well as inflammatory disorders, and occasionally with some types of leukaemias. Decreased monocyte levels can indicate bone marrow injury or failure and some forms of leukaemia.



Lymphocytes 1.7 x10*9/L

A type of white blood cell. Can increase with bacterial or viral infection, leukaemia, lymphoma, radiation therapy or acute illness. Decreased lymphocyte levels are common in later life but can also indicate steroid medication, stress, lupus and HIV infection.

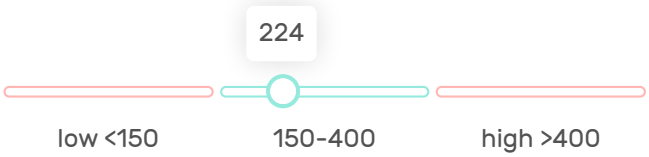


Neutrophils 1.7 x10*9/L

A type of white blood cell. Can increase in response to bacterial infection, inflammatory disease, steroid medication, or more rarely leukaemia. Decreased neutrophil levels may be the result of severe infection or other conditions.

Platelet Count 224 x10*9/L

Responsible for blood clotting and healing. A high count can indicate a risk of thrombosis, whilst a low count can lead to easy bruising.



UECs (Kidney Function)

Your estimated filtration rate (eGFR) is down toward the lower end of normal.

This may imply a degree of reduction in kidney function. This can be seen temporarily e.g. with infection, dehydration, certain medications or strenuous exercise and should typically resolve.

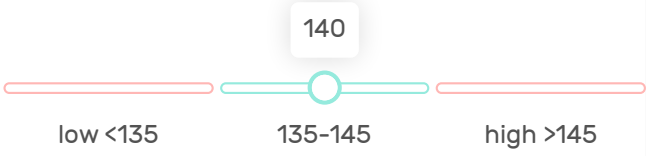
However, longer term and persistent declines in kidney function may also occur e.g. with ageing, diseases of the kidney itself or the effects of situations such as diabetes or high blood pressure. A reduced eGFR is a fairly common finding in individuals over the age of 65 years.

As such I would recommend GP follow up, as onward monitoring may be warranted.

*Note that testing for kidney disease usually also involves a urine sample - refer to our Kidney Check https://www.i-screen.com.au/tests/kidney-function-test for more information.

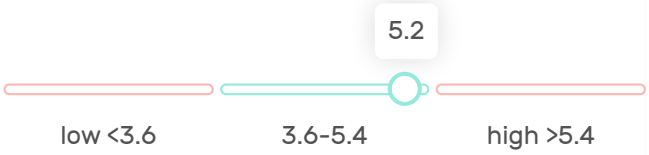
Sodium 140 mmol/L

Sodium is important for maintaining fluid balance in the body and for proper nerve and muscle function.



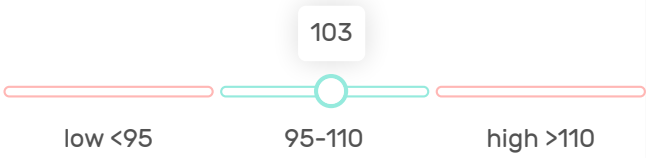
Potassium 5.2 mmol/L

Potassium is important for nerve and muscle function, including regulating heart rhythm, and is also involved in fluid balance.



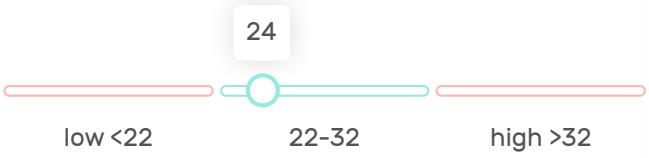
Chloride 103 mmol/L

Chloride is important for maintaining fluid balance and for the proper functioning of the digestive system.



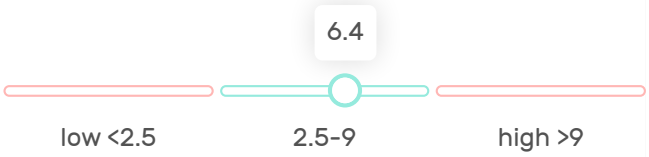
Bicarbonate 24 mmol/L

Higher than normal levels suggests trouble maintaining pH balance either by failing to remove carbon dioxide or because of an electrolyte imbalance. Elevations may be seen with severe vomiting, chronic lung problems and some hormonal disorders. Low levels may be seen with chronic diarrhoea, diabetic ketoacidosis and kidney failure.



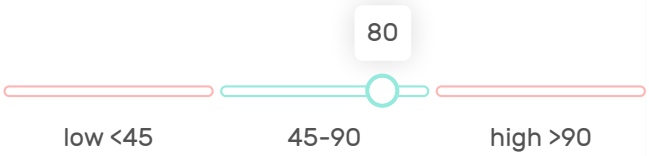
Urea 6.4 mmol/L

A high concentration of this waste product can indicate dehydration or that your kidneys aren't working properly.



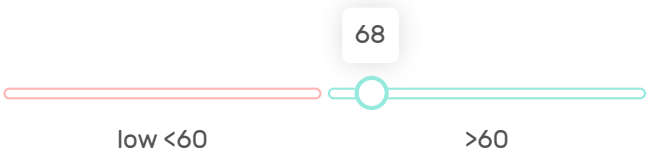
Creatinine 80 umol/L

A waste molecule generated from muscle metabolism, and an accurate marker of kidney function.



eGFR 68 ml/min

The estimated glomerular filtration rate (eGFR) measures how well your kidneys filter the wastes from your blood and is the best overall measure of kidney function.

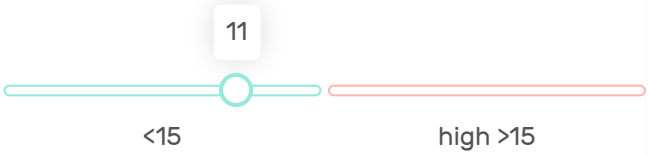


Liver Function (LFTs)

Your liver function results are within normal range which is a good indication that your liver is working as it should be.

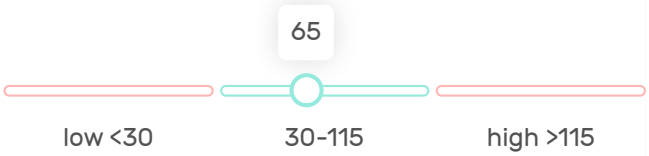
Bilirubin 11 umol/L

Bilirubin tests are use to screen for or to detect and monitor liver disorders or haemolytic anaemia.



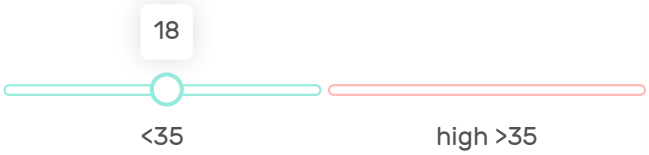
ALP 65 U/L

Alkaline phosphatase (ALP) is an enzyme located mainly in the liver and the bones. High levels can indicate liver disease.



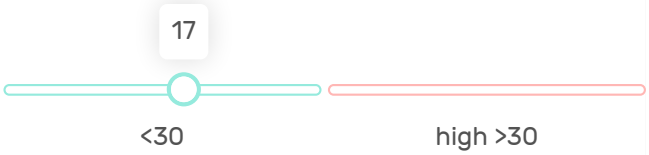
AST 18 U/L

Aspartate aminotransferase (AST) is an enzyme created mainly by the liver and the heart. High levels can indicate damage to your liver caused by alcohol, drugs or hepatitis.



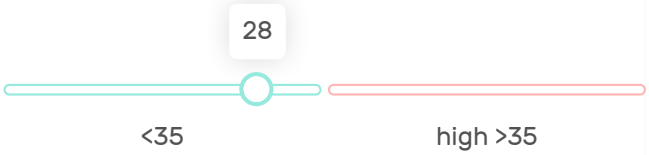
ALT 17 U/L

Alanine aminotransferase (ALT) is an enzyme mainly produced by the liver. A good indicator of liver damage caused by alcohol, drugs or hepatitis.



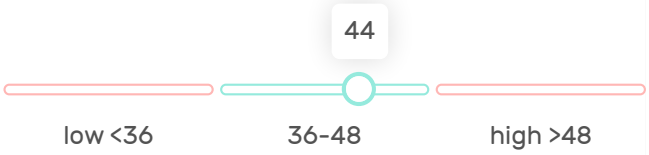
GGT 28 U/L

Gamma-glutamyl transferase (GGT) is a liver enzyme which can be used to diagnose alcohol abuse as it is typically raised in long term drinkers.



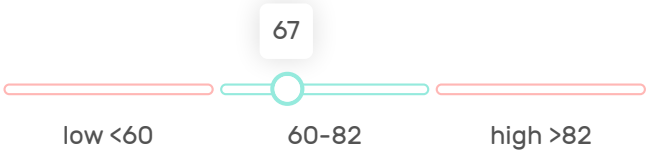
Albumin 44 g/L

Albumin is a protein which keeps fluid from leaking out of blood vessels, nourishes tissues, and carries hormones, vitamins, drugs, and ions like calcium throughout the body. Low levels can indicate malnutrition or other health problems.



Total Protein 67 g/L

A measure of all of the proteins in the plasma portion of your blood. Proteins are important building blocks of all cells and tissues - they are important for body growth and health.

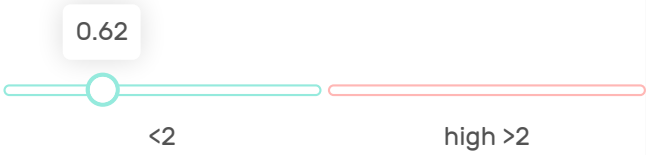


Inflammation

Your inflammation markers are within the normal range.

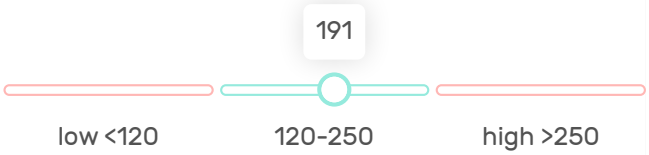
High sensitivity CRP 0.62 mg/L

A high-sensitivity C-reactive protein (hs-CRP) test measures low levels of CRP and may be used to help evaluate an individual for risk of cardiovascular disease



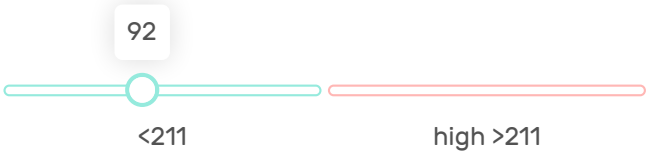
Lactate Dehydrogenase 191 U/L

LDH is an enzyme required during the process of turning sugar into energy for your cells. Only a small amount is usually detectable in the blood, however, when cells are damaged they release LDH into the bloodstream.



Creatine Kinase 92 U/L

When muscle cells are injured creatine kinase enzymes leak out of the cells and enter the bloodstream. Prolonged elevated creatine kinase after periods of rest can be a sign of overtraining.

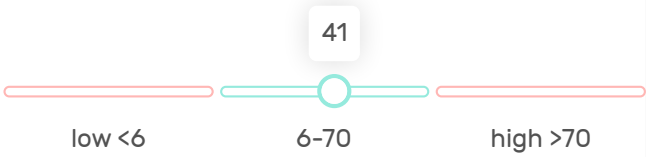


Pancreatic Function

Your pancreatic enzymes are within the normal range and don't show evidence of pancreatic inflammation.

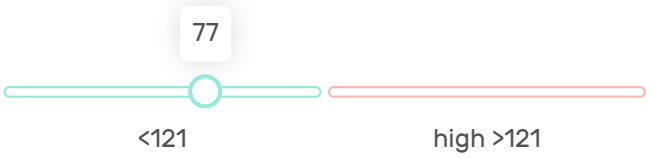
Lipase 41 U/L

An enzyme produced by the pancreas which is released into the digestive tract to help digest fatty foods.



Amylase 77 U/L

An enzyme made mainly by the pancreas which is released from the pancreas into the digestive tract to help digest starch in our food.

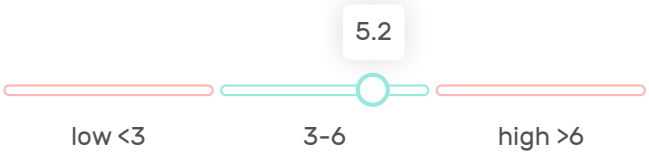


Blood Glucose

Your fasting glucose is within the normal range and doesn't indicate increased risk of diabetes.

Fasting glucose 5.2 mmol/L

If you have diabetes your body doesn't process glucose effectively.

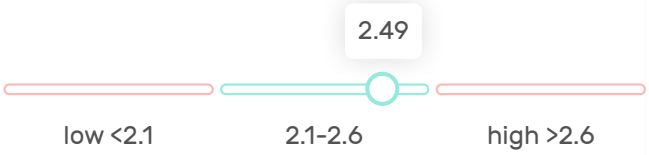


Bone Health

Calcium and phosphate work together to help build strong bones and teeth. Your markers are within the normal range and don't indicate an imbalance that could cause bone weakness.

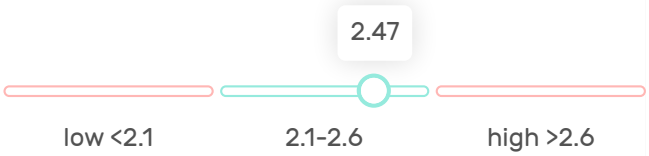
Calcium 2.49 mmol/L

Calcium is important in building strong bones and teeth, but it also plays a key role in other functions including muscle contraction, nerve function, blood clotting, and enzyme function.



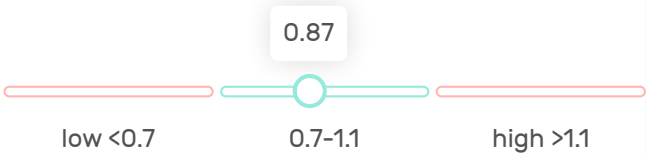
Calcium (corrected) 2.47 mmol/L

Corrected calcium adjusts for changes in serum albumin levels, providing a more accurate measure of the biologically active form of calcium, and is therefore a better reflection of the body's calcium status.



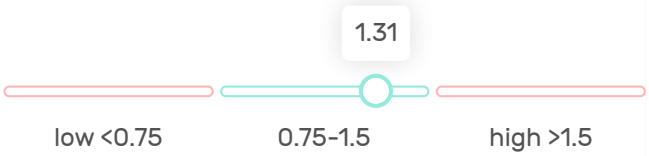
Magnesium 0.87 mmol/L

Magnesium and calcium work together closely to maintain strong bones, and magnesium deficiency has been associated with an increased risk of osteoporosis.



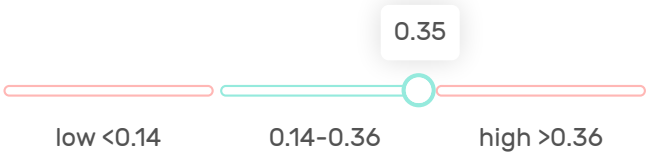
Phosphate 1.31 mmol/L

Phosphate is a mineral which is essential for the formation of bones and teeth. It is also essential for many other cellular processes including energy metabolism and the formation of DNA and RNA.



Urate 0.35 mmol/L

If too much urate is produced or not enough is excreted, it can accumulate and lead to gout – an inflammation that occurs in joints.



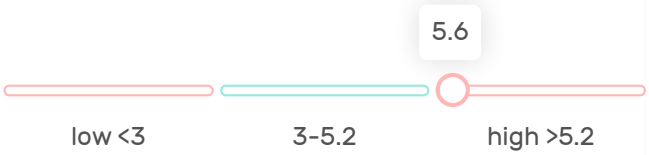
Cholesterol

Despite your elevated total cholesterol your LDL "bad" and non-HDL cholesterol are within the normal range, which typically indicates you are at relatively low risk of developing cardiovascular disease (assuming you are not already in a high risk category).

Similarly your HDL "protective" cholesterol and triglycerides are within range.

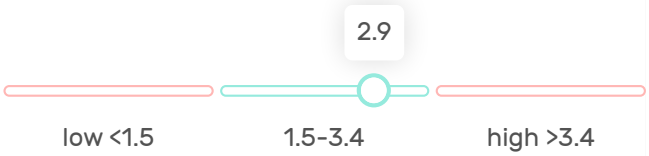
Total Cholesterol 5.6 mmol/L

Total cholesterol includes both HDL cholesterol and LDL cholesterol. Cholesterol is essential for many processes in the body, including the formation of cell membranes, the production of hormones, and the metabolism of vitamin D.



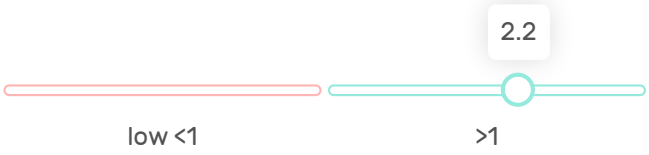
LDL 2.9 mmol/L

LDL cholesterol is often referred to as "bad" cholesterol, as it can contribute to the development of atherosclerosis, a condition where plaque builds up in the arteries and can increase the risk of heart disease.



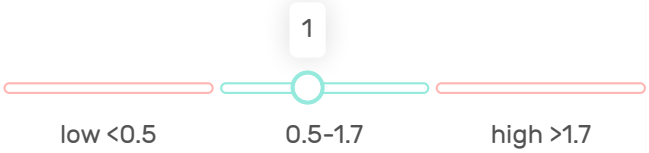
HDL 2.2 mmol/L

HDL cholesterol is often referred to as "good" cholesterol, as it helps remove excess cholesterol from the bloodstream and can protect against the development of heart disease.



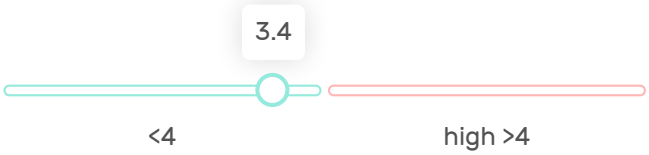
Triglycerides 1.0 mmol/L

Triglycerides are the main storage form of fatty acids in the body and a source of energy. High levels of triglycerides are associated with cardiovascular disease, obesity, type 2 diabetes, and metabolic syndrome.



Non-HDL Cholesterol 3.4 mmol/l

Non-HDL cholesterol is considered an effective lipid measurement for assessing cardiovascular disease risk as it is believed to reflect levels of 'bad' cholesterol.



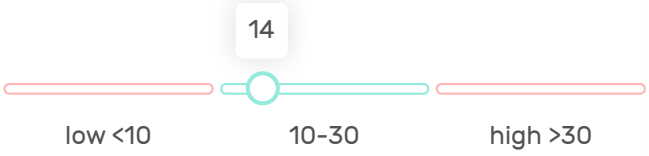
Iron Studies

Your ferritin levels are borderline, which can indicate a tendency toward iron deficiency. During reproductive years iron deficiency in women is usually due to heavy menstrual losses.

*Note that ferritin levels may be falsely elevated where there is inflammation.

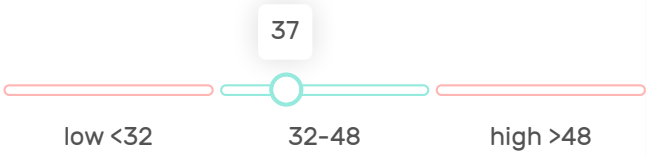
Iron 14 umol/L

An essential trace element is necessary for forming healthy red blood cells and for some enzymes.



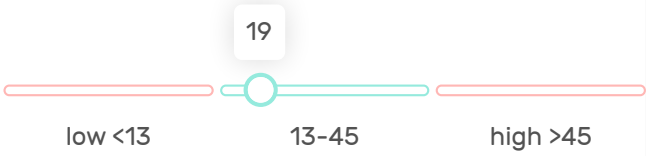
Transferrin 37 umol/L

A protein that binds iron and transports it around the body (also known as TIBC). High levels indicate iron deficiency.



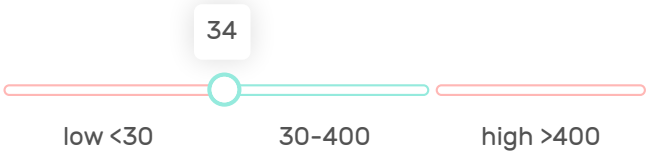
Transferrin Saturation 19 %

Low levels typically indicate iron deficiency, and high levels can indicate iron overload.



Ferritin 34 ug/L

Ferritin is a marker of iron stores in the body, and is used to assess iron status. Low levels can indicate iron deficiency, which is a common nutritional deficiency that can lead to anaemia, fatigue, and impaired immune function.



Thyroid Function

Your TSH levels are at the higher end of normal. When TSH levels are slightly higher than normal but your FT3 and FT4 levels are normal, it's called subclinical hypothyroidism. This usually happens when your thyroid is not working as well as it should, but not enough to cause significant symptoms yet. However, there is a risk that it may progress to clinical hypothyroidism in the future.

In people with subclinical hypothyroidism, up to 80% of them may have antithyroid antibodies present in their blood. These antibodies may indicate that their immune system is attacking their thyroid gland, though may also be found in individuals without any thyroid issues.

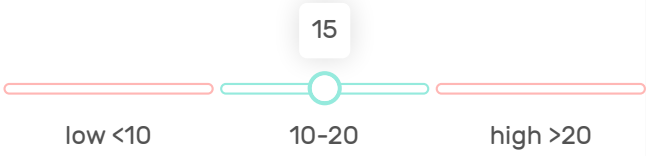
However, this said, your TSH here is still technically within range.

TSH 3.9 mIU/L

Communicates with the thyroid gland to produce T3 and T4 which regulate metabolic functions. High TSH thyroid test levels indicates an underactive thyroid, and low levels an overactive thyroid.

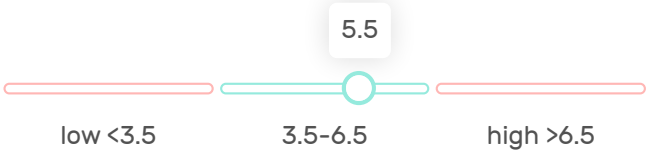
FT4 15 pmol/L

Measures the thyroxine that is freely circulating and able to regulate metabolism. High FT4 thyroid test levels indicate an overactive thyroid, and low levels an underactive thyroid.



FT3 5.5 pmol/L

Measures the triiodothyronine that is freely circulating. High FT3 thyroid test levels indicate an overactive thyroid, and low levels an underactive thyroid.



Recommendations

Take your blood pressure

Blood pressure is an important cardiovascular disease risk factor, and taking your blood pressure regularly is recommended. High blood pressure puts extra strain on your arteries and heart which over time can cause the arteries to become thicker and less flexible (making them more likely to become clogged up), or to become weaker. This can lead to a heart attack, a stroke, kidney disease or dementia.

Optimise your iron

Consider increasing the amount of iron rich food in your diet. Iron-rich food sources include meats, eggs, green leafy vegetables, (such as spinach, collard greens and kale), wheat germ, whole grain breads, cereals and raisins.

Check in with your GP

As always, please visit your GP to discuss your results. Laboratory investigations are an important aspect of healthcare, however they must be viewed in the wider context of your medical history, current health and concerns, physical examination findings and other investigations. These results do not replace the need for face to face medical consultation or regular visits to your local GP. A copy of your lab report is attached for your reference.