



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 B12 AND FOLATE TESTS

These are two tests that measure the levels of vitamin B12 and folate in your blood.

B12 and folate are tests that are not ordered generally and are only used in certain specific situations.

- When a full blood count test shows larger than normal red blood cells – which suggests anaemia (e.g. in chronic kidney disease, Crohn's disease)
- When an elderly person shows mental or behavioural changes.
- If someone has symptoms suggesting nerve damage
- When someone shows signs of malnutrition, or is known to have a disorder that affects the absorption of vitamins.
- If someone has chronic fatigue syndrome and previous test results suggests they may benefit from B12.
- As part of a pregnancy screen.

During pregnancy there is a need for more B12 and folate to cater for the rapidly growing baby. If a woman has low folate at the start of pregnancy, it will become even more depleted as time goes on. This may lead to premature birth or the baby may be born with a condition such as spina bifida.

Over time, a deficiency of either B12 or folate can lead to a condition in which your red blood cells become enlarged. This is called macrocytic anaemia. This production of larger but fewer red blood cells means your blood is unable to carry as much oxygen as it should.



Another type of macrocytic anaemia called megaloblastic anaemia also shows changes in the bone marrow. In this case, your lab results will also show lower numbers of white blood cells, red blood cells and platelets.

A deficiency of B12 can also result in varying degrees of nerve damage.

B12 and folate deficiencies are not common in Australia where most people have a generally healthy diet and there is a program of fortifying cereals, breads and grain products.

A healthy adult typically has enough B12 stored to last three to five years. Since folate is stored in the body in smaller quantities than vitamin B12, it must be consumed more regularly.

B12 and folate deficiencies can take months or even years to show up in adults. Infants and children show signs of deficiency more quickly because they haven't had time to store sufficient amounts.

People at risk of deficiency include:

- The elderly
- Those with a condition that prevents them from absorbing enough B12 and folate such as pernicious anaemia, coeliac disease, Crohn's disease, ulcerative colitis, Helicobacter pylori, parasites/worms, reduced stomach acid (from long-term antacid use), and previous stomach surgery (gastric bypass).
- Heavy drinkers
- Vegetarians and vegans
- Those with long-term use of certain medications
- Pregnant women who need increased amounts of B12 and folate

Vitamin B12 and folate work with vitamin C to help the body make new red and white blood cells, repair cells, and make DNA and RNA. B12 is also important for nerve health.

B12 and folate cannot be produced in the body and so must be supplied by the diet.



What can your results tell you?


NORMAL B12 and folate levels may mean that you do not have a deficiency and that your symptoms are due to another cause. However, normal levels may reflect the fact that your stored B12 and/or folate have not yet been fully depleted.

If you have a **NORMAL** or **LOW NORMAL** B12 result but a deficiency is still suspected, your doctor may order a methylmalonic acid (MMA) test which is an early indicator of B12 deficiency.

LOW B12 and/or folate levels mean that you have a deficiency. Further tests may be done to investigate the underlying cause.

HIGH levels of B12 are uncommon and not usually clinically monitored. Someone with chronic myeloproliferative neoplasm, diabetes, heart failure, obesity, AIDS, or severe liver disease, may have an increased vitamin B12 level. Taking oestrogens, vitamin C or vitamin A can also cause high B12 levels.

B12 and folate tests cannot tell you the severity of a deficiency or the cause.



What if you have abnormal results?

A great many conditions can be associated with low B12 and folate levels.

It's important to talk with your doctor about what the results mean for your personal situation.

Biotin found in some supplements can interfere with testing. Certain medicines can affect the test results.

Your doctor will advise you on which ones to stop taking. Ask for specific instructions.

Fasting for 6-8 hours before your blood sample is collected is required because food can affect the results of your test.



What happens next?

Sometimes, some 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 to see what's causing your symptoms.

You can only receive a Medicare rebate for a vitamin B12 serum test once every 12 months, in line with current best practice.



Having a medical test

The choice of tests your doctor makes will be based on your medical history and symptoms. Make sure you tell them everything you think might help.

You play a central role in making sure your test results are accurate. Do everything you can to make sure the information you provide is correct and follow instructions closely.

Talk to your doctor about any medication you are taking. Find out if you need to fast or stop any particular foods or supplements. These may affect your results.



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.



5 questions to ask your doctor

Why does this test need to be done?

Do I need to prepare (such as fast or avoid medications) for the sample collection?

Will an abnormal result mean I need further tests?

How could it change the course of my care?

What will happen next, after the test?



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

Please use this QR code to access more information



www.pathologytestsexplained.org.au

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When you have pathology tests you can have your results sent directly to your My Health Record.

You'll find a direct link to the Pathology Tests Explained website embedded in the pathology results pages of your record.

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