TEST

Folic acid - test

A folic acid test measures folate in your blood to help identify vitamin B9 deficiency.

WHAT IT MEASURES
Folate, the form of vitamin B9 circulating in blood

SAMPLE
Blood from a vein

FASTING NEEDED?
Sometimes, if your laboratory requests several hours without food

HOW LONG IT TAKES
Usually 5 to 10 minutes

RESULTS IN
Usually a few days, varying by laboratory

USED FOR
Diagnosing folate deficiency and investigating certain anemias

MAIN LIMITATION
Recent food or supplements can change serum folate quickly

Overview

A folic acid test is a blood test that measures folate, also called vitamin B9. Folic acid is the manufactured form used in supplements and fortified foods, but laboratories usually report the result as folate .

Most laboratories measure serum or plasma folate , which mainly reflects recent food and supplement intake. Some offer red blood cell folate , which may indicate folate status over a longer period but is more difficult to measure and is not always more useful.

Your body needs folate to make DNA and healthy blood cells. Too little can contribute to megaloblastic anemia, in which red blood cells become unusually large and do not work normally.

Why the test is ordered

The test is most often used to investigate possible folate deficiency, especially when a complete blood count shows anemia or unusually large red blood cells.

It may also be ordered if you have symptoms such as tiredness, weakness, shortness of breath, or a sore tongue, or if you have risk factors including poor nutrition, heavy alcohol use, coeliac disease, or another condition that reduces nutrient absorption.

A vitamin B12 test is often ordered at the same time. Folate and B12 deficiencies can cause similar blood-cell changes but require different assessment and treatment.

Who should have the test

You may be offered a folate test if you have:

Routine testing is not usually needed for everyone. People who are pregnant or planning pregnancy are commonly advised to take folic acid without first having a blood test. Testing may still be appropriate if deficiency, poor absorption, or another blood disorder is suspected.

The test cannot show the cause of a low level by itself. Your diet, medicines, health conditions, blood count, and vitamin B12 result must also be considered.

- Anemia or unusually large red blood cells
- Symptoms and risk factors suggesting poor nutrition or absorption
- A condition or medicine associated with reduced folate
- A previous low result that needs follow-up

How to prepare

Follow the laboratory or clinic's instructions. Some laboratories ask you not to eat for several hours because a recent meal can raise serum folate; others do not require fasting.

Tell the healthcare professional about vitamins, nutritional drinks, and medicines you use. Folic acid and multivitamin supplements can quickly affect the result. Do not stop prescribed medicine or a pregnancy supplement unless the responsible healthcare professional tells you to.

You can usually drink water before the test. Good hydration may make the blood draw easier.

What happens during the test

A healthcare worker places a band around your upper arm, cleans the skin, and inserts a needle into a vein, usually inside your elbow. A small amount of blood is collected into a tube.

You may feel a brief scratch or sting. The needle is removed and pressure is applied. Collection usually takes only a few minutes.

The sample may be tested for folate alone or alongside a complete blood count, vitamin B12, iron tests, or other blood tests.

Understanding your results

Your report will show your result and the laboratory's reference range. Ranges and measurement methods vary, so results must be interpreted in their clinical context.

A low serum folate result may support folate deficiency when it fits with your symptoms, diet, and blood count. However, it can also reflect a short period of poor intake.

A result within or above the reference range makes current deficiency less likely, but a recent folate-rich meal or supplement may temporarily raise serum folate before longer-term stores recover.

High folate is often caused by supplements or fortified food and does not usually identify a disease by itself. Vitamin B12 should still be considered because folic acid can improve blood-count changes caused by B12 deficiency without correcting possible nerve effects.

What affects the results

Factors that may affect serum folate include:

Red blood cell folate can be affected by a recent transfusion, vitamin B12 deficiency, and conditions that change how quickly red blood cells are made or destroyed.

Large biotin supplements interfere with some laboratory methods. Ask whether this applies to the laboratory's assay rather than stopping biotin on your own.

- Recent food or supplements: Folate-rich food, fortified products, folic acid, multivitamins, and nutritional drinks may raise it
- Recent poor intake: Eating very little may lower it
- Sample damage: Broken red blood cells can release folate and falsely raise the result
- Medicines: Methotrexate, trimethoprim, sulfasalazine, and some anti-seizure medicines can affect folate
- Alcohol: Heavy use can reduce intake, absorption, and folate processing

- Pregnancy: Folate needs increase, and blood-volume changes can affect interpretation
- Absorption problems: Coeliac disease, bowel inflammation, or bowel surgery may cause low folate

Accuracy and limitations

A folate test is not a perfect yes-or-no test for deficiency. Serum folate may appear normal after a recent meal or supplement, or low after a brief period of poor intake.

Red blood cell folate reflects a longer period, but results can be affected by differences between laboratory methods, transfusion, B12 deficiency, and altered red blood cell turnover. It is not always a better first test.

Neither test identifies why folate is low. A complete blood count can detect anemia and large red blood cells, while B12 testing helps distinguish deficiencies that can look similar. Homocysteine may rise with either deficiency, but kidney problems, age, medicines, and other factors can also raise it.

Results are most reliable when the folate level, blood count, diet, medicines, and medical history point in the same direction.

Risks and complications

The risks are those of a routine blood draw. You may have a small bruise, mild soreness, or brief faintness.

Applying pressure after the needle is removed usually limits bruising. Tell the person taking blood if you have previously fainted during blood tests.

What happens next

A normal result may need no further action if your blood count and other tests are reassuring. If symptoms or blood-count changes continue, your healthcare professional may investigate another cause.

A low result is usually reviewed with your vitamin B12 level, complete blood count, diet, alcohol intake, medicines, and possible absorption problems. Further testing may be needed if the cause is unclear.

Follow-up after treatment is usually routine. Your healthcare professional may monitor

symptoms or repeat a blood count; another folate test is not always necessary.

The result alone is rarely an emergency. Seek emergency help for chest pain, severe difficulty breathing, fainting that does not quickly resolve, or new severe confusion. Contact a healthcare service promptly for rapidly worsening shortness of breath, marked weakness, or a fast heartbeat that persists at rest.

Common questions

Can I drink coffee before a folic acid test?

If you have been asked to fast, drink only water unless the laboratory says otherwise. If fasting is not required, coffee is unlikely to affect folate directly, but milk, fortified products, or food may influence the result.

Does the time of day matter?

Usually not. Recent food or supplement use matters more. A morning appointment may be easier if fasting is required.

Can I exercise before the test?

Normal activity does not usually affect folate. Follow any additional instructions if other blood tests are being collected.

Should I stop taking folic acid first?

Do not stop a prescribed supplement without advice. Tell the healthcare professional and laboratory what you take, the amount, and when you last took it.

Why is vitamin B12 tested at the same time?

Both deficiencies can cause anemia and large red blood cells. Testing B12 helps distinguish them because folic acid can improve blood-count changes without treating B12-related nerve problems.

Is serum folate the same as red blood cell folate?

No. Serum folate mainly reflects recent intake. Red blood cell folate covers a longer period but has more measurement and interpretation limitations.

Sources

- National Institutes of Health Office of Dietary Supplements: Folate Fact Sheet for Health Professionals

- World Health Organization: Guideline on optimal serum and red blood cell folate concentrations
- MedlinePlus: Vitamin B Test
- Devalia V, Hamilton MS, Molloy AM. Guidelines for the diagnosis and treatment of cobalamin and folate disorders, British Journal of Haematology, 2014
- Green R. Indicators for assessing folate and vitamin B12 status and monitoring interventions, American Journal of Clinical Nutrition, 2011