

Folate

MDL Test Number: 656

Methodology: Immunoassay

CPT Codes: 82746



Specimen Collection Platform:

Serum in Serum Separator Tube (SST)

Turnaround Time:

24 - 72 hours

Stability:

Room temperature

Test Additions*:

30 days to add tests

Specimen Collection:



1. Immediately after blood collection, invert the tube(s) gently 5 times to ensure mixing of clot activator.



2. Allow the tube to rest upright for at least 30 minutes after collection to ensure proper clotting.



3. Centrifuge for at least 15 minutes at 2200-2500 RPM within one hour of collection.



4. Do not remove the stopper or pour off serum.



What is Folate?

Folate is a B vitamin that the body cannot make for itself. It comes from leafy green vegetables, beans and lentils, citrus fruit, and — in the United States since 1996 — from enriched grain products, which are required to have folic acid added to them. The body

needs folate to build DNA and to make red blood cells, and the requirement rises sharply in pregnancy.

The amount of folate in the blood responds quickly to what a person has eaten recently. A single meal or a supplement taken that morning can lift the result, which is why the sample is collected fasting. It also means the blood level describes recent intake more closely than it describes what the body has built up over months. The level can look normal in someone whose reserves are low, and it can look low in someone whose reserves are still adequate.

Why test for Folate?

Folate is measured when a shortage is suspected or when something has raised the body's requirement. It is commonly ordered to:

- **Investigate anemia**, especially the kind in which the red blood cells are larger than usual, which is nearly always caused by a shortage of either folate or vitamin B12.
- **Assess folate status in pregnancy or when a pregnancy is being planned**, when the requirement rises well above the usual intake.
- **Look for a cause of poor absorption**, such as celiac disease or another condition affecting the small intestine.
- **Follow patients after weight-loss surgery**, in whom folate and other vitamins are absorbed less well for life.
- **Evaluate people whose diet is limited**, and those in whom heavy alcohol use has reduced both intake and absorption.
- **Check folate alongside vitamin B12**, since the two shortages cause the same kind of anemia and are distinguished by the laboratory results rather than by symptoms.



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Special Instructions:

- **Fasting before the draw:** The patient must be fasting for this test. Folate rises with recent eating, so a sample taken after a meal or after a supplement can read higher than the person's usual level and hide a shortage. This applies whether folate is ordered on its own or together with vitamin B12.
- **Protecting the sample from light:** The sample should not be left in strong or direct light after it is drawn. Protecting it from light is part of collecting this test properly, and it is handled by the collection site and the laboratory.
- **Biotin supplements:** Biotin can make this result read falsely high, which is the direction that matters, because a falsely high folate can hide a real shortage. Ordinary doses sold for hair, skin, and nails stay below the level at which the manufacturer sees an effect, but very high daily doses do not. Patients should tell the ordering provider what they take and at what dose.
- **Methotrexate:** The manufacturer directs that this test not be used for patients who are currently receiving methotrexate. The drug is close enough in structure to folate to be picked up by the test, and it reaches levels far above anything the test is built to measure. Current or recent methotrexate treatment must be stated on the request.
- **Comparing results over time:** Different laboratories and different methods can give slightly different results on the same sample. Repeat testing should be done at the same laboratory whenever possible.

Limitations:

Every laboratory test has limits. For folate, the main ones are:

- The result describes recent intake more than long-term reserves. It can be normal in someone whose stores are running down, and low in someone whose stores are still adequate, so a single value is read alongside the diet, the symptoms, and the blood count rather than on its own.
- The manufacturer states that results near the lower end of the normal range should be interpreted with particular caution, because that is where the test separates a genuine shortage from an ordinary low-normal value least reliably.
- A sample that has broken down during collection or transport cannot be used for this test, because the hemoglobin released from the red cells raises the folate result, and a fresh sample has to be collected.
- Rarely, antibodies that some people carry after routine contact with animals or animal products can interfere with tests built this way and produce a result that does not fit the clinical picture.
- A folate result is one piece of a larger picture. It is meant to be read together with the patient's symptoms, medical history, and other test results — never on its own.

Reference Range(s):

Folate is reported in nanograms per milliliter (ng/mL). The manufacturer publishes a single adult range rather than separate ranges for women and men. It is worth knowing where that range comes from: it was carried across from the earlier version of this test, and the study behind it was done in the United States before folic acid was added to enriched grain products in 1996. Average folate levels in people not taking supplements roughly doubled after that change.

- **Adults: 3 – 17 ng/mL**

A result outside these ranges is not automatically a problem, and a result inside them does not rule one out. Only the ordering provider can interpret what a given number means for a given patient. Patients should always go by the reference range printed on their own laboratory report.

Analyte	Disorder	Expected Value*
Folate	Folate deficiency	↓
Folate	Celiac disease	↓
Folate	Malabsorption	↓
Folate	Normal early pregnancy	↓
Folate	Post-bariatric surgery state	↓

*↓ – Decreased.

What are some references that discuss the medical necessity of testing Folate?

1. Devalia V, et al. Guidelines for the diagnosis and treatment of cobalamin and folate disorders. *Br J Haematol*, 166, 496–513 (2014).
2. Rubio-Tapia A, et al. American College of Gastroenterology guidelines update: diagnosis and management of celiac disease. *Am J Gastroenterol*, 118, 59–76 (2023).
3. Achebe MM, Gafter-Gvili, A. How I treat anemia in pregnancy: iron, cobalamin, and folate. *Blood*, 129, 940–949 (2017).
4. Mechanick JL, et al. Clinical practice guidelines for the perioperative nutrition, metabolic, and nonsurgical support of patients undergoing bariatric procedures — 2019 update. *Obesity*, 28, O1–O58 (2020).
5. Jacques PF, et al. The effect of folic acid fortification on plasma folate and total homocysteine concentrations. *N Engl J Med*, 340, 1449–1454 (1999).



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