



## What is Folate?

Folate is an important nutrient that is naturally present in many foods. It functions as a coenzyme or cosubstrate in various reactions, including the formation of DNA and RNA, and metabolism of amino acids (1).

## What are folate sources?

Folate is naturally present in a wide variety of foods, including vegetables, fruit, nuts, beans, seafood, eggs, dairy products, poultry, and grains. Folic acid is obtained as a dietary supplement and also from enriched bread, cereals, flours, cornmeal, pastas, rice, and other grain products, due to mandatory folic acid fortification programs in the United States (2).

## What are the signs of folate deficiency?

Folate deficiency is typically associated with serum levels less than 3.5 ng/mL or whole blood levels less than 150 ng/mL. Folate deficiency usually occurs due to poor diet, alcoholism, and malabsorptive disorders (3).

The primary clinical sign of deficiency is megaloblastic anemia, which causes weakness, fatigue, difficulty concentrating, irritability, headaches, heart palpitations, and shortness of breath (1). Females with low folate intake are at increased risk of giving birth to infants with neural tube defects, low birth weights, preterm delivery, and fetal growth retardation (4).

## How much folate do I need?

Folate requirements vary depending on age and pregnancy/breastfeeding status (1). Infants under 6 months require 65 mcg dietary folate equivalents (DFE) and 80 mcg DFE for infants 7-12 months. The recommended dietary allowance for 1-3 years is 150 mcg DFE, with gradually increasing recommendations until the adult value of 400 mcg DFE by 14 years of age.

Pregnant women should obtain 600 mcg DFE each day, while breastfeeding women should obtain 500 mcg DFE each day. It is recommended that this added requirement be obtained from dietary supplements as folic acid alone or as part of a prenatal vitamin.

# Folate Information Sheet

## Who is at risk of folate deficiency?

Individuals who consume high amounts of alcohol are at increased risk of folate deficiency, due to alcohol inhibition of folate absorption, acceleration of folate breakdown, and increased excretion from the body (4).

Pregnant women have an increased risk of folate deficiency, due to the increased demands for folate required for the developing fetus. All pregnant women, as well as those trying to conceive, should take vitamin supplements that

include folic acid to reduce the risk of neural tube defects and other complications (1).

Malabsorptive disorders, such as celiac disease and inflammatory bowel disease, can increase the risk of folate deficiency (3). A common genetic polymorphism in the MTHFR gene, known as 677C>T, is also associated with an increased risk of folate deficiency, due to an impaired ability to convert folate to its active form, 5-MTHF (5).

## Where can I find more info?

Visit [www.genetrackdiagnostics.com](http://www.genetrackdiagnostics.com) for full test information, including specimen collection requirements

### CONTACT US:

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### NOTE:

This brochure is provided for general information purposes only. It is not intended to replace medical advice from a health professional.

### References:

- (1) Folate: Fact Sheet for Health Professionals. (2020, June 3). NIH.
- (2) Food Standards: Amendment of Standards of Identity For Enriched Grain Products to Require Addition of Folic Acid. (1996, March 5). Federal Register, 61 (44), 8781-8797.
- (3) Carmel R. (2005). Folic Acid. In M. Shils, M. Shike, A. Ross, B. Caballero, & R. J. Cousins, Modern Nutrition in Health and Disease. 11th ed., Baltimore: Lippincott Williams & Wilkins. 470-481.
- (4) Bailey LB, & Caudill MA. (2012). Folate. In J. W. Erdman, I. A. Macdonald, & S. H. Zeisel, Present Knowledge in Nutrition. Washington, DC: Wiley-Blackwell. 321-342.
- (5) Scaglione F, & Panzavolta G. (2014). Folate, folic acid and 5-methyltetrahydrofolate are not the same thing. Xenobiotica, 44 (5), 480-488.