

# Folic Acid deficiency Anaemia

## Folic Acid Deficiency Anemia

**Definition of disease:** Folic acid deficiency anemia happens when your body does not have enough folic acid. Folic acid is one of the B vitamins, and it helps your body make new cells, including new red blood cells. Your body needs red blood cells to carry oxygen. If you don't have enough red blood cells, you have anemia, which can make you feel weak and tired.

**Pathophysiology:** Folates are present in natural foods and tissues as polyglutamates because these forms serve to keep the folates within cells. In plasma and urine, they are found as monoglutamates because this is the only form that can be transported across membranes. Enzymes in the lumen of the small intestine convert the polyglutamate form to the monoglutamate form of the folate, which is absorbed in the proximal jejunum via both active and passive transport. Within the plasma, folate is present, mostly in the 5-methyltetrahydrofolate (5-methyl THFA) form, and is loosely associated with plasma albumin in circulation. The 5-methyl THFA enters the cell via a diverse range of folate transporters with differing affinities and mechanisms (ie, adenosine triphosphate [ATP]-dependent H<sup>+</sup> cotransporter or anion exchanger). Once inside, 5-methyl THFA may be demethylated to THFA, the active form participating in folate-dependent enzymatic reactions. Cobalamin (B-12) is required in this conversion, and in its absence, folate is "trapped" as 5-methyl THFA.

**Genetics:** Hereditary folate malabsorption (HFM) is characterized by folate deficiency with impaired intestinal folate absorption. If there are members in the family with this it could be more likely that cause of the anemia.

**Epidemiology:** Data from the National Health and Nutrition Examination Survey (NHANES) 1999-2000 indicate the prevalence of low serum folate concentrations (< 6.8 nmol/L) decreased from 16% before folic acid fortification to 0.5% after folic acid fortification.[14] In elderly persons, the prevalence of high serum folate concentrations (>45.3 nmol/L) increased from 7% before fortification to 38% after fortification. Disease Described: Folic acid deficiency anemia happens when your body does not have enough folic acid. Folic acid is one of the B vitamins, and it helps your body make new cells, including new red blood cells

**Signs/Symptoms:** Feel weak and tired. Feel lightheaded. Be forgetful. Feel grouchy. Lose your appetite and lose weight. Have trouble concentrating.

**Diagnosis:** CBC Folate

**Treatment:** Give folic acid supplements, taken by mouth or given through a vein. If you have low folate levels because of a problem with your intestines, you may need treatment for the rest of your life. Diet changes can help boost your folate level. Eat more green, leafy vegetables and citrus fruits

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