

FOLATE

Folate (vitamin B9) is one of the water-soluble B complex vitamins. Folate is the word used when vitamin B9 is found in dietary sources, while Folic Acid is the word used when vitamin B9 is made available to the body from supplements. Folate is essential for numerous bodily functions. Humans cannot make folate in their body, so it all has to come from dietary sources or supplements. The human body needs folate to synthesize DNA and repair DNA. It is especially important in aiding rapid cell division and growth, which is why it's important to have lots of folate during infancy and pregnancy. The human body also requires folate to produce healthy red blood cells and prevent anemia.

The National Institute of Nutrition in Hanoi has assessed that a large part of the Vietnamese population is still at risk of Folate deficiency. Folate deficiency before and during early pregnancy is a major cause of serious birth defects. It is estimated that there are about 3000 neural tube birth defects and infantile paralysis a year in Vietnam because of folate deficiency. In adults, folate deficiency can increase risk of deaths from heart disease and stroke.

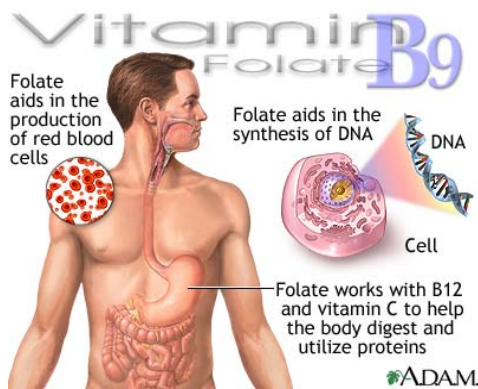


Table 1: Recommended Dietary Allowances (RDAs) for Folate [2]

Age	Male	Female	Pregnant	Lactating
Birth to 6 months*	65 mcg	65 mcg		
7–12 months*	80 mcg	80 mcg		
1–3 years	150 mcg	150 mcg		
4–8 years	200 mcg	200 mcg		
9–13 years	300 mcg	300 mcg		
14–18 years	400 mcg	400 mcg	600 mcg	500 mcg
19+ years	400 mcg	400 mcg	600 mcg	500 mcg

Sources of Folate

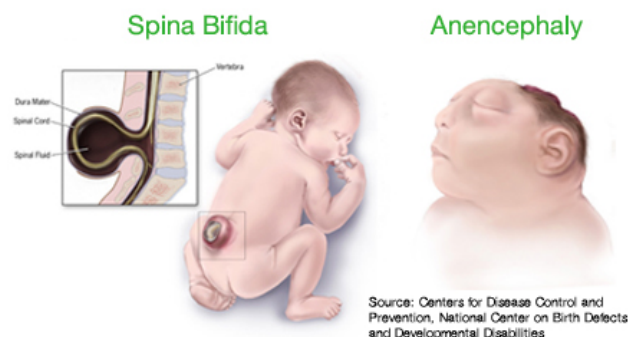
Folate is found naturally in a wide variety of foods, including vegetables (especially dark green leafy vegetables like spinach, morning glory, turnip greens or mustard greens), fruits and fruit juices, nuts, beans, peas, dairy products, poultry and meat, eggs, seafood, and grains. Spinach, liver, yeast (found in bread), asparagus, and Brussels sprouts are among the foods with the highest levels of folate. Folate is stored in the liver, so eating 85g beef liver, for example, will give you half your daily requirement for folate. Rice can also be a good source of folate. There are some types of rice that have been fortified with folate. If it is possible, you should buy fortified rice for you and your family. Lettuce, avocado, green peas, peanuts, oranges, papaya, banana, eggs, beef and chicken all contain varying amounts of folate. So it's easy to see that if you eat a wide variety of food, especially fresh fruits and vegetables, you should get enough folate everyday.



Folate Deficiency

Isolated folate deficiency is uncommon, it usually occurs with other nutrient deficiencies because of its strong association with poor diet, alcoholism, and, sometimes, malabsorptive disorders. Megaloblastic anemia, is the primary clinical sign of a deficiency of folate or vitamin B12. Symptoms of megaloblastic anemia include weakness, fatigue, difficulty concentrating, irritability, headache, heart palpitations, and shortness of breath. Folate deficiency can also produce soreness and shallow ulcerations in the tongue and oral mucosa; changes in skin, hair, or fingernail pigmentation.

Women with insufficient folate intakes are at increased risk of giving birth to infants with neural tube defects (NTDs) although the mechanism responsible for this effect is unknown. A NTD is an opening in the spinal cord or brain that occurs very early in human development. It can result in Spina Bifida, and a condition where the brain and spinal cord is underdeveloped, or there are membranous sacs in the brain. Inadequate maternal folate status has also been associated with low infant birth weight, preterm delivery, and fetal growth retardation. It is also suggested that low folate levels could have a role to play in the development of depression. People who are most at risk of folate deficiency are people with alcohol dependence, women of childbearing age and pregnant women, or people with malabsorptive disorders (where the gut is unable to absorb vitamins and minerals, for example celiac disease, inflammatory bowel disease or Crohn's disease).



What to do if you have a folate deficiency:

Folate deficiency by itself is very rare. This means that if you have a folate deficiency, you are also likely to have other vitamin deficiencies, particularly vitamin B12. So if your doctor tells you that you have a folate deficiency, you should ask them to also check your vitamin B12 levels. If you have a mild folate deficiency, you should always try to correct it through changing your diet first. This means eating lots of green leafy vegetables, fruit, dairy, and meat. If you eat a well balanced diet that follows the principles of the food pyramid, then you should be able to get enough folate and other b complex vitamins from your diet.

If you have folate related anaemia, it is likely that you will need to take folic acid supplements. It possible that you will need to be on folic acid supplements for up to 8 weeks before your anaemia is corrected.



If you have a folate deficiency because of an underlying medical disorder, such as problems with your gastrointestinal tract, you will need to treat this.