

## Folate Deficiency

A deficiency of folate can occur when your dietary consumption of folate is inadequate, when your body's need for folate is increased, and when your body loses more folate than usual. These conditions may be caused by poor diet (anorexia), drinking too much alcohol, pregnancy, lactation, depleted stores of folate and malabsorption. Some medications may also interfere with absorption of folate. Liver disease (hepatitis) and kidney disease may also contribute to folate deficiency.



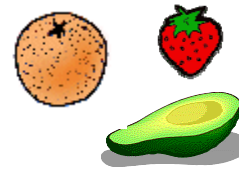
## Signs of Folate Deficiency

Signs and symptoms of folate deficiency are often subtle. Diarrhea, loss of appetite, and weight loss can occur. Additional signs are weakness, sore tongue, headaches, heart palpitations, irritability, and behavioral disorders. Women with folate deficiency who become pregnant are more likely to give birth to low birth weight and premature infants, and infants with neural tube defects. In adults, anemia is a sign of advanced folate deficiency. In infants and children, it can lead to slow growth rate.

## Sources of Folate

### Fruits:

- 1 cup orange juice
- 1/4 cantaloupe
- 1 medium banana
- 1/2 Papaya
- 8 medium strawberries
- 1/2 of a medium avocado
- 1 medium orange



### Dark green leafy vegetables:

- 1 cup raw or 1/2 cup cooked spinach, mustard greens, collards, or turnip greens

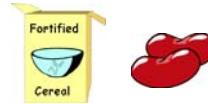
### Other vegetables:

- 5 spears cooked asparagus
- 1/2 cup cooked broccoli
- 1/2 cup cooked Brussels sprouts
- 1/2 cup cooked okra



### Other foods:

- 3oz. braised cooked liver
- 3/4 cup ready to eat cereal
- 1/2 cup cooked black, kidney, navy and pinto beans
- 1/2 cup cooked black-eyed peas
- 1/2 cup cooked chick peas (garbanzos)
- 1/2 cup cooked lentils
- 1 ounce peanuts
- 1/2 cup egg noodles
- 1/2 cup long grain rice



The average diet does not furnish enough folate. It is important to take folic acid as a supplement!

Our bodies absorb synthetic folic acid better than natural folate.



National Institute of Health

## References

FDA	<a href="http://vm.cfsan.fda.gov/~dms/fdafolc.html">http://vm.cfsan.fda.gov/~dms/fdafolc.html</a>
IHND	<a href="http://vvv.com/healthnews/folate.html">http://vvv.com/healthnews/folate.html</a>
March of Dimes	<a href="http://www.modimes.org">http://www.modimes.org</a>
National Institutes of Health	<a href="http://www.cc.nih.gov/ccc/supplements/folate.html">http://www.cc.nih.gov/ccc/supplements/folate.html</a>
University of Florida	<a href="http://grove.ufl.edu/~folc/foodfolate.html">http://grove.ufl.edu/~folc/foodfolate.html</a>
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# Jefferson County Public Health

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## FOLATE & FOLIC ACID [foe-lik-a-sid]



### Mineral Supplement

Vitamin B<sub>9</sub>



## INDICATIONS

- Promote Normal Fetal Development
- Prevent Birth Defects
- Reduce Incidence of Neural Tube Defects
- Prevent Pernicious Anemia & Cancer
- Liver Disease & Kidney Dialysis

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## Mechanisms of Action: How it Works

**Folate** is a form of water soluble vitamin B which occurs naturally in food. Folate gets its name from the Latin word "folium" which means leaf. **Folic acid** is a synthetic form of this vitamin found in fortified foods and supplements. Both are needed for DNA synthesis to build and maintain healthy cells. Folate helps to prevent changes to DNA



*Folic Acid promotes normal fetal development for a healthy baby.*

that may lead to cancer. Folic acid is well absorbed from the GI tract, intramuscular or subcutaneous sites. Half of all body stores are in the liver. Folic acid also enters breast milk and crosses the placenta. All people need folate to make red blood cells and prevent anemia. For pregnancy, folic acid should be taken both before conception and for the first trimester. Folic acid may be needed by people who abuse alcohol, anyone taking anti-convulsants or other medications that interfere with the action of folate, liver disease, or who are receiving dialysis treatment for kidney disease.

**Folic acid is good for you!**

### Therapeutic Effects: Before Pregnancy

**Neural tube defect** is a serious birth defect that causes disability or death. It is the *number 1* disabling birth defect in the United States affecting one and two infants out of every 1,000 births. There are two main types of neural tube defects, known as spina bifida and anencephaly. Spina bifida is a defect producing incomplete closure of the spinal column. Neural tube defects usually occur before a woman realizes that she is pregnant. A baby with anencephaly has no developed brain and dies shortly after birth. *These conditions develop within 18-30 days after conception, so it is extremely important to take and maintain adequate folic acid intake throughout your childbearing years.*

### Therapeutic Effects: First Trimester

The first trimester is extremely important to the baby's nervous system to develop properly. Getting enough folic acid reduces your risk that the baby will develop neurological problems. Studies have also shown that folic acid helps to prevent cleft lip and palate.

### Therapeutic Effects: Other

If you are breastfeeding your baby, folic acid helps in lactation to increase milk production. Folic acid stimulates the production of red blood cells, white blood cells, and platelets.



RDA: 400 mcg; Pregnancy 600mcg; Lactation 500mcg

### Adverse Effects

Self medicating with vitamin supplements should **not** exceed recommended daily allowances (RDA). The effectiveness of megadoses for treatment of various medical conditions is unproven and may cause side effects. Folic acid may make urine more intensely yellow. Notify your health care professional if rash occurs, which may indicate hypersensitivity. Follow-up exams are **extremely** important to monitor you and your baby's progress! Studies in women show no fetal harm.

### Interactions

May mask symptoms of vitamin B<sub>12</sub> deficiency.

### Contraindications

- Anticonvulsant medications such as dilantin, phenytoin and primidone.
- Methotrexate (for cancer)
- Triamterene (diuretic)
- Metformin
- Sulfasalazine (for inflammation related to Crohn's disease and ulcerative colitis.)

### How Supplied

**Natural foods:** view BACK page.

**Synthetically fortified foods**

**Synthetic Vitamins**

### Duration

Since folic acid is a water-soluble vitamin, it is rapidly absorbed and should be replaced with daily intake.