

## Who needs a folic acid supplement?

Eating a balanced, varied diet can help meet folic acid recommendations. Before taking a dietary supplement, people should consider how much folate and folic acid they are getting from the foods they eat.

All women of childbearing age are encouraged to consume 400 mcg of folic acid daily by eating fortified breakfast cereals or taking a dietary supplement. Many birth defects occur in the early stages of pregnancy, before a woman knows she is pregnant. Pregnant women and others always should follow the advice of their health-care providers and let their health-care providers know when they are adding vitamins and other supplements to their diets.



## How much folate or folic acid is “too much”?

Folate has no “upper limit” from foods, and people face little risk from too much folic acid from fortified foods. The upper limit for folic acid supplements is 1,000 mcg/day.

An important note for older adults, vegetarians and supplement users: Too much folic acid from supplements can hide vitamin B12 deficiency, which could result in anemia and/or permanent nerve damage. Be sure to discuss any vitamins or other supplements you take with a medical-care provider.



## Everyone needs folic acid.

For more information about folic acid, visit these Web sites:

**Centers for Disease Control and Prevention**  
[www.cdc.gov/ncbddd/folicacid/about.html](http://www.cdc.gov/ncbddd/folicacid/about.html)

**National Institutes of Health – Office of Dietary Supplements**  
<http://dietary-supplements.info.nih.gov/factsheets/folate.asp>

**Linus Pauling Institute/Oregon State University**  
<http://lpi.oregonstate.edu/infocenter/vitamins/fa/>

**March of Dimes**  
[www.marchofdimes.com](http://www.marchofdimes.com)

Written by:

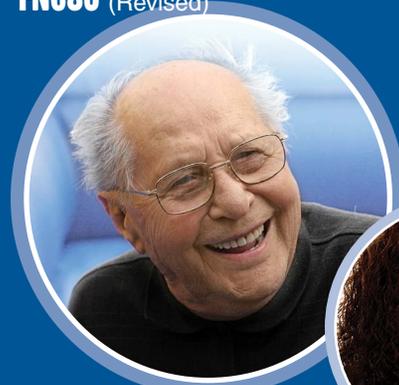
**Julie Garden-Robinson, Ph.D., R.D., L.R.D.**  
Food and Nutrition Specialist, NDSU Extension Service

**For more information about nutrition and health, visit [www.ag.ndsu.edu/food](http://www.ag.ndsu.edu/food)**

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# Folic Acid:

## A Vitamin Important at Any Age



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## What is folic acid?

Folic acid is a B vitamin the body needs for healthy cells and blood. Many times folic acid is referred to as folate, which is the natural form of the vitamin found in foods such as leafy green vegetables, dry edible beans and citrus fruits. Folic acid is the man-made form of the vitamin found in fortified breakfast cereals, bread, pasta, rice and vitamin supplements.



## Why is folic acid important to health?

The body uses folic acid to produce cells, including red blood cells, so it is important for men and women at all ages. Folic acid has been shown to help prevent up to 70 percent of birth defects of the brain and spinal cord, also known as neural tube defects. All women of childbearing age need folic acid before and during pregnancy. Adequate folic acid during pregnancy also may help prevent cleft lip/palate and other birth defects.

Some studies suggest folic acid may reduce risk of heart disease and stroke by reducing the level of homocysteine (a type of amino acid or protein building block) in the bloodstream. Researchers have linked high blood-homocysteine levels with increased risk for heart disease/ stroke and osteoporosis.

Researchers have found folic acid may reduce the risk of certain types of cancer, especially colon cancer. The latest studies suggest a link between too little folic acid and Alzheimer's disease; however, more studies need to be conducted in this area to better understand the impacts.



## How much folate or folic acid do people need?

Most people get some folate from their daily diet. Table 1 shows the recommended dietary allowances (RDAs) for folate set by the Food and Nutrition Board of the Institute of Medicine. Eating a variety of foods or in some cases, supplementation, can meet these recommendations.



**Table 1: Recommended Dietary Allowances for Folate for Children\*\* and Adults.**

Age (years)	Males and Females (mcg/day*)	Pregnancy (mcg/day)	Lactation (mcg/day)
1-3	150	N/A	N/A
4-8	200	N/A	N/A
9-13	300	N/A	N/A
14-18	400	600	500
19+	400	600	500

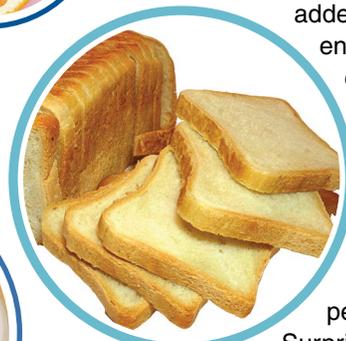
\*mcg/day means micrograms per day.

\*\*An RDA has not been set for infants under age 1; their needs are met through breast milk or formula.

Source: National Institutes of Health - Office of Dietary Supplements

## What foods contain folic acid or folate?

A variety of foods contain folic acid and/or folate, as you can see in Table 2. Folic acid has been added to some grain foods, such as enriched pastas, breads, rice and cereals. A few have 100 percent of the folic acid you need each day. Read Nutrition Facts labels on foods to learn more.



Folate is found in foods such as leafy green vegetables, cooked dry edible beans, broccoli, peanuts, citrus fruit and others. Surprisingly, folic acid added to foods and vitamin pills is easier for the body to use than the folate naturally occurring in foods.

**Table 2. Examples of Food Sources of Folate and Folic Acid.**



Food	Micrograms (mcg)	% DV**
*Breakfast cereals fortified with 100% of the DV, ¼ cup	400	100
Beef liver, cooked, braised, 3 ounces	185	45
Cowpeas (blackeyes), immature, cooked, boiled, ½ cup	105	25
*Breakfast cereals, fortified with 25% of the DV, ¼ cup	100	25
Spinach, frozen, cooked, boiled, ½ cup	100	25
Great Northern beans, boiled, ½ cup	90	20
Asparagus, boiled, 4 spears	85	20
*Rice, white, long-grain, parboiled, enriched, cooked, ½ cup	65	15
Vegetarian baked beans, canned, 1 cup	60	15
Spinach, raw, 1 cup	60	15
Green peas, frozen, boiled, ½ cup	50	15
Broccoli, chopped, frozen, cooked, ½ cup	50	15
*Egg noodles, cooked, enriched, ½ cup	50	15
Broccoli, raw, 2 spears (each 5 inches long)	45	10
Avocado, raw, all varieties, sliced, ½ cup sliced	45	10
Peanuts, all types, dry roasted, 1 ounce	40	10
Lettuce, romaine, shredded, ½ cup	40	10
Wheat germ, crude, 2 Tablespoons	40	10
*Bread, white, 1 slice	35	10
Tomato juice, canned, 6 ounces	35	10
Orange juice, chilled, includes concentrate, ¾ cup	35	10
Turnip greens, frozen, cooked, boiled, ½ cup	30	8
Orange, all commercial varieties, fresh, 1 small	30	8
Egg, whole, 1 large	25	6
Cantaloupe, raw, ¼ medium	25	6
Papaya, raw, ½ cup cubes	25	6
Banana, raw, 1 medium	20	5
*Bread, whole wheat, 1 slice	20	5

Source: Adapted from National Institutes of Health—Office of Dietary Supplements

\*Items marked with an asterisk (\*) are fortified with folic acid as part of the Folate Fortification Program.

\*\*%DV is Percent Daily Value, which is a reference value used on Nutrition Facts labels to help consumers plan a healthy diet. A food providing 5% of the DV or less is a low source while a food that provides 10% to 19% of the DV is a good source. A food that provides 20% or more of the DV is high in that nutrient.