

## Vitamins and other Supplements

### Folic Acid and Multivitamins

Women who might be pregnant need 0.8 to 1 milligram (mg) of folic acid (Folate or Folacin) daily. This is the same as 800 to 1,000 micrograms (mcg). Folic acid is a B vitamin that can decrease birth defects. It is best to be on these at all times while trying to get pregnant and particularly by day 14 of a pregnancy. Over-the-counter prenatal vitamins at Walgreens have a reasonable amount. One of these a day is all that most women need. Folic acid is also found in leafy green vegetables and legumes (especially dried beans), liver, oranges, peanuts, sunflower seeds, and wheat germ. But even fortified diets do not usually have enough folic acid. Folic acid pills are usually needed.

5 mg of folic acid a day is better than 1 mg particularly if you are on seizure medication or have had a neural tube defect before. But long term use of 5 mg of folic acid a day can hide a B12 deficiency. Short term use to cover day 14 to 30 after ovulation in a pregnancy appears to be good. One approach is increase the dose to 5 mg daily at ovulation and continue for 30 days if you are pregnant. Another approach is to increase to 5 mg daily when your period is due and continue until your period starts or until 21 days after a positive pregnancy test. Extra folic acid is available at \$0.02 per pill or \$0.05 per mg for 0.4 mg tablets over the counter or as a prescription at \$0.20 per 1 mg. *(NOTE: If you have changes that make these instructions easier to understand, please tell me.)*

### 81 mg Aspirin

Low dose 81 milligrams (mg) aspirin daily can decrease miscarriages in some women. This is the same dose as baby aspirin and is less than a normal 325 mg aspirin. One concern is that this can cause bleeding but the risk is small. Aspirin is usually stopped by 12 weeks of pregnancy. The baby's heart may not develop completely if aspirin or NSAIDs such as Aleve or Motrin are taken in the last month of pregnancy.

### Other Supplements

Most prenatal supplements contain 27 milligrams per day of iron. This is the amount recommended for pregnant women. Some ready-to-eat and cooked cereals are fortified with iron. When you are pregnant, choose these cereals to help meet your increased need for iron. Choose cereals that say "iron fortified."

All fluid milk, including fat-free and low-fat milk, is fortified with vitamin D. Yogurt may also be fortified with vitamin D. Some calcium-fortified fruit juices and soymilk also have vitamin D added. Use 5 mcg (= 200 IU) of vitamin D daily.

B-12 (2.6 mcg), zinc (12 mg), selenium (70 mcg) and calcium ( 1,200 mg) daily are in many prenatal vitamins and appear to be useful in development of a baby.

300 mg of essential fatty acids (DHA and EPA as in omega 3 fish oils) daily may help with development of the brain and vision. This may also decrease premature delivery.

Some salt is fortified with iodine, an essential mineral. Choose salt that is labeled "iodized salt." But remember, keep the amount of salt and sodium you eat low.

### Too Much?

A high dose of some nutrients in a supplement, in particular vitamin A, can be harmful to your baby. Too much vitamin A from supplements can cause birth defects.

### Links

<http://www.mypyramid.gov/>  
<http://www.mypyramid.gov/mypyramidmoms/index.html>  
<http://ods.od.nih.gov/index.aspx>

## Folic Acid and Multivitamins

Folic acid - 0.8 to 1 milligram (mg) daily

Increase folic acid to 5 mg daily at ovulation and continue for 30 days if you are pregnant

Increase to 5 mg daily when your period is due and continue until your period starts or until 21 days after a positive pregnancy test.

Aspirin - 81 milligrams (mg) daily can decrease miscarriages in some women.

This can cause bleeding but the risk is small.

Aspirin is usually stopped by 12 weeks of pregnancy.

Iron - 27 milligrams per day

Vitamin D - 5 mcg or 200 IU daily

B-12 - 2.6 mcg daily

Zinc - 12 mg daily

Selenium - 70 mcg daily

Calcium - 1,200 mg daily

Essential fatty acids - 300 mg as in omega 3 fish oils daily.

Iodine - Use iodized salt, but keep the amount of salt and sodium low.

<http://www.mypyramid.gov/>

<http://www.mypyramid.gov/mypyramidmoms/index.html>

<http://ods.od.nih.gov/index.aspx>

<http://www.danmartinmd.com/vitaminssupplements.pdf>

University of California at Berkeley Wellness Letter. New York: Health Letter Associates, November 1992; 9(2):1-2

New England Journal of Medicine, December 24, 1992

Update '93. Mayo Clinic Health Letter, February 1993

Moore ME: Should folic acid be added to food? Physicians Weekly, March 15, 1993;10:10

Carlson S and Aupperle P. Nutrient requirements and fetal development. OBG Management Nov 07 Supplement s1-s8

---

Food	Folic Acid (micrograms)
Wheat germ (2 tablespoons)	50
Broccoli, chopped, cooked (1/2 cup)	53
Pineapple juice, canned (1 cup)	58
Breakfast cereal, fortified (1 ounce, dry)	100*
Spinach, frozen, cooked (1/2 cup)	102
Peanuts, dry-roasted (1/2 cup)	106
Orange juice, fresh or frozen (1 cup)	109
Sunflower seeds, dry-roasted (1/2 cup)	136
Chick peas, dried, cooked (1/2 cup)	141
Oatmeal, fortified, prepared (3/4 cup)	150
Black-eyed peas, dried, cooked (1/2 cup)	175
Lentils, dried, cooked (1/2 cup)	179

---

\*The label would express this as "25% of the U.S.R.D.A."

Omega 3 is an essential fatty acid. The two key components of Omega 3 are EPA (Eicosapentaenoic acid) and DHA (Docosahexanoic). Essential fatty acids only come from the diet.

Centers for Disease Control and Prevention: Folic acid-preventable spina bifida and anencephaly. JAMA (Editorials) 1993; 269(10):1292-1293

Consumption of folic acid should be kept below 1.0 milligrams because doses above this level may be associated with difficulties in diagnosing pernicious anemia. Furthermore, caution is taken to prevent excessive use of multivitamins, particularly those containing vitamin A since excess vitamin A may cause birth defects.

Werler MM, Shapiro S, Mitchell AA: Periconceptional folic acid exposure and risk of occurrent neural tube defects. JAMA 1993; 269(10):1257-1261

Folic acid must be taken early as the embryologic formation of the neural crest (day 17) and closure of the neural tube (day 20-23) is such that this occurs before many patients know they are pregnant.

Ob Gyn News July 15, 2005, Volume 40, 14, Page 7. Infertility Treatment Tied to Neural Tube Defects.

Dr. Yvonne Wu of the University of California at San Francisco reports that neural tube defects were 11.7 times more likely after clomiphene exposure than in the control group. Infertility patients had a 4.8 fold increase risk. This risk was for exposure from 60 days before the date of conception to 15 days after. They point out that Clomid is still in the blood stream for more than a month and would be circulating at the time of neural tube closure

Risks appear to be related to the dose of Clomid and the dose with neural tube defects had an average of 5.7 cycles of Clomid compared with 2.7 courses with no neural tube defect. This data is based on 4 of 18 patients with a history of infertility and 3 of 18 who are on clomiphene. In the neural tube defect population, 22% had infertility and 17% were on clomiphene. In the control group, 6% had infertility and 2% were on clomiphene. The reported risk was about 1 in 6,000 in the control group and 1 in 700 with clomiphene exposure. This included women who had been on clomiphene in the 2 months before pregnancy occurred.

DCM Note: Although it may not be reasonable to draw conclusions based on 4 of 110,000 births, using 2 mg to 5 mg of folic acid daily in early pregnancy appears reasonable for this concern. This dose is high enough to hide pernicious anemia but is otherwise a reasonable dose. Some prenatal vitamins have 1 mg and additional 1 mg tablets are available with a prescription. This is taken daily and needs to be started by the 14<sup>th</sup> day of pregnancy and continued top the 30<sup>th</sup> day of pregnancy.

The use of folic acid is not generally a health concern. But, in a small number of women, it may hide a B12 deficiency. That B12 deficiency would take several months to occur. If 2 mg folic acid is used for more than 6 months, doing blood B12 levels may be reasonable.

Dr. Ernest B. Hook, American Society of Human Genetics was reported in Ob/Gyn News, December 15, 1996 as concluding that folic acid use is associated with decreased malformation, but increased miscarriage. Additional implications were an increase in fertility rate by 3.4% and an increase in live birth rate by 1.7%. He is at the School of Public Health at the University of California, Berkeley.

Ridker, Paul M, et.al. A randomized trial of low-dose aspirin in the primary prevention of cardiovascular disease in women. N Engl J Med 352: 1293-1304, 2005

Low-dose aspirin decreases the risk of a first myocardial infarction in men, with little effect on the risk of ischemic stroke. Aspirin lowers the risk of stroke without affecting the risk of myocardial infarction or death from cardiovascular causes, leading to a nonsignificant finding with respect to the primary end point in women.

39,876 initially healthy women 45 years of age or older received 100 mg of aspirin on alternate days or placebo and were monitored for 10 years for a first major cardiovascular event.

477 major cardiovascular events were confirmed in the aspirin group, as compared with 522 in the placebo group, for a nonsignificant reduction in risk with aspirin of 9 percent. With regard to individual end points, there was a 17 percent reduction in the risk of stroke in the aspirin group, as compared with the placebo group, owing to a 24 percent reduction in the risk of ischemic stroke and a nonsignificant increase in the risk of hemorrhagic stroke. As compared with placebo, aspirin had no significant effect on the risk of fatal or nonfatal myocardial infarction or death from cardiovascular causes.

Gastrointestinal bleeding requiring transfusion was more frequent in the aspirin group than in the placebo group.

Subgroup analyses showed that aspirin significantly reduced the risk of major cardiovascular events, ischemic stroke, and myocardial infarction among women 65 years of age or older.

In this large, primary-prevention trial among women, aspirin lowered the risk of stroke without affecting the risk of myocardial infarction or death from cardiovascular causes, leading to a nonsignificant finding with respect to the primary end point.