

FOLIC ACID

Is making NEWS Again

by Ronald L. Myers, CNC

Wednesday, March 3, 2004

NEW YORK (Reuters Health) - The results of a study conducted in Sweden indicate that high levels of folate obtained from food sources may protect against ovarian cancer. The benefits were found to be primarily among women who consumed at least two drinks of alcohol per week.

Previous reports have shown that dietary levels of folate, a B vitamin also known as folic acid, are inversely related to the risk of breast and colorectal cancer. In contrast, few studies have looked at the association between folate intake and ovarian cancer risk.

To investigate, Dr. Alicja Wolk, from the Karolinska Institute in Stockholm, and colleagues analyzed data from a population-based group of more than **60,000** women living in Sweden. The subjects ranged in age from 38 to 76 years and all were cancer-free at study enrollment, between 1987 and 1990.

By follow-up in mid-2003, a total of 266 women had developed ovarian cancer, the researchers report in the current issue of the Journal of the National Cancer Institute (March 3, 2004).

Overall, women with the highest level of folate in their diet (at least 204 micrograms/day) were 33 percent less likely to develop ovarian cancer than those with the lowest levels (less than 155 micrograms/day).

NOTE—This degree of risk reduction with a relatively low dose of folic acid is significant. Most multi-vitamins provide 400mcg of folic acid per tablet.

Saturday, March 6, 2004

SAN FRANCISCO, (United Press International) - A new study suggests folate enriched flour may have an unintended effect of preventing thousands of deaths in the United States from heart attack and stroke.

Folate was added to grain products in 1996 after studies showed conclusively that the vitamin helps prevent spina bifida, a disabling birth defect.

But researchers at the federal Centers for Disease Control and Prevention also detected a sudden drop in mortality rates from heart attack and stroke beginning in 1996, the San Francisco Chronicle reported Saturday. The report was released Friday in San Francisco.

Imagine the power of nutrition in running the body if the small amounts of folic acid referred to above can **prevent** cancer, heart attack and stroke!! Next, consider how **FORTUNATE** your patient's are to have found someone like you to care for them. A practitioner who understands that, in fact, nutrition does run the body, and that by using nutrition to Balance Body Chemistry all symptoms, all conditions can be relieved.

In this issue on folic acid, let's look at the many benefits this water soluble B vitamin provides to the human body. Folic acid was identified and named in the 1940's and is now known to take part in a wide range of metabolic processes, from synthesis of genetic material to transmission of nerve signals.

FOLIC ACIDS ROLE IN PREVENTING CARDIOVASCULAR PROBLEMS

Several studies from such renowned peer-reviewed journals as the British Medical Journal; JAMA; The Lancet and the Archives of Internal Medicine have shown the significance of relatively small doses of folic acid in preventing or reducing cardiovascular disease. Due to space considerations, one of the more striking studies is presented below.

BOSTON, MASSACHUSETTS—Researchers at the Harvard School of Public Health have released a major study which shows that a higher intake of folic acid and vitamin B-6 (pyridoxine) protects women against nonfatal heart attacks (myocardial infarction) and fatal coronary heart disease (CHD). The study involved over 80,000 female nurses who in 1980 completed food frequency questionnaires. By 1994, 658 of the women had suffered a nonfatal heart attack (MI) and 281 had died of coronary heart disease. Statistical analysis showed that women whose intake of folate (folic acid) exceeded 545 micrograms/day had a 31 per cent lower risk of having a heart attack or fatal CHD than did women whose intake was less than 153 micrograms/day. Similarly, women whose intake of vitamin B-6 was greater than 5.9 milligrams/day had a 33 per cent lower risk. These risk reductions were **independent** of other cardiovascular risk factors such as smoking, hypertension, alcohol consumption, and the intake of fiber... Multivitamins and other vitamin supplements were by far the largest contributors to the intakes of both folate and vitamin B-6. In this group those with the highest folate intake (>400 mcg. per day) reduced their risk of MI and CHD by an astounding **73 per cent** when compared to women with a low intake.

Rimm, Eric B., et al. Folate and vitamin B-6 from diet and supplements in relation to risk of coronary heart disease among women. *Journal of the American Medical Association*, Vol. 279, February 4, 1998, pp. 359-64

As you know, 545 mcg. is less than the amount of folic acid contained in one tablet of **Folic Acid 800**. The following study from the British Medical Journal presents good evidence that folic acid reduces coronary risk by lowering blood levels of homocysteine. Lowering blood homocysteine with folic acid based supplements: meta-analysis of randomised trials. *British Medical Journal*, Vol. 316, March 21, 1998, pp. 894-98

FOLIC ACID AND STROKE AND DEMENTIA

CALGARY, CANADA—Researchers at the University of Calgary report that elderly people with low blood levels of folic acid (folate) are more likely to suffer a stroke than are people with normal to high levels. Their study involved 1171 subjects aged 65 years and older who were enrolled in the Canadian Study of Health and Aging. The researchers found that participants with a folate level below 9.3 nmol/L had a relative risk for ischemic stroke of 1.37. They also

discovered that people with low folate levels were more likely to be depressed or demented, tended to have a history of weight loss, and were more apt to rate their health as poor. The researchers conclude that folate deficiencies in elderly people can have serious implications and point out that these deficiencies are *easily, inexpensively, and rapidly correctable through supplementation*.

Ebly, Erika M., et al. Folate status, vascular disease and cognition in elderly Canadians. *Age and Aging*, Vol. 27, July 1998, pp. 485-91

TEL-HASHOMER, ISRAEL—People with inflammatory bowel disease (Crohn's disease and ulcerative colitis) tend to be at greater risk for thromboembolic events (blood clots) such as stroke and peripheral venous thrombosis. Researchers at the Chaim Sheba Medical Center believe they may have found the reason for this. They studied 105 men and women with active Crohn's disease and compared their blood levels of homocysteine (a known risk factor for blood clots), folic acid and vitamin B12 to the levels found in 105 healthy controls. They found that homocysteine levels were significantly higher in patients with mild to moderately active Crohn's disease and that folic acid and vitamin B12 levels were significantly lower. The average level of folic acid was 5.9 pg/mL (normal range is 5 to 17 pg/mL). The researchers point out that it is well established that increased folate levels correspond to lower homocysteine levels. They conclude that patients with Crohn's disease may benefit from supplementing with folic acid. Chowers, Yehuda, et al. Increased levels of homocysteine in patients with Crohn's disease are related to folate levels. *American Journal of Gastroenterology*, Vol. 95, December 2000, pp. 3498-3502

FOLIC ACID AND CANCER PREVENTION

SHANGHAI, CHINA—A team of American and Chinese researchers has discovered that folic acid (folate) is highly effective in preventing breast cancer in both pre- and postmenopausal women. Their investigation involved 1321 women with breast cancer and 1382 healthy controls. The women were between the ages of 25 and 64 years when they enrolled in the Shanghai Breast Cancer Study during 1996-98. The researchers found a clear correlation between dietary intake of folic acid and the risk of breast cancer. Women with a daily intake of 345 micrograms or higher had a 38 per cent lower risk than did women with an intake of less than 195 micrograms – after adjustment for total vegetable, fruit and animal food intake. The protective effect of folic acid was even more pronounced in women who also had a high dietary intake of vitamin B6, vitamin B12 and methionine. Women with a daily intake equal to or higher than 345 micrograms of folic acid, 8.47 micrograms of vitamin B12, 2 mg of vitamin B6, and 1.9 grams of methionine had a 53 per cent lower risk of breast cancer than did women with daily intakes at or below 195 micrograms of folic acid, 1.32 micrograms of vitamin B12, 1.35 mg of vitamin B6, and 1.27 grams of methionine. Researchers believe that folic acid exerts its protective effect by ***preventing errors in DNA replication*** and by helping to regenerate methionine, a vital component in DNA synthesis. They also point out that both vitamin B12 and vitamin B6 are vital cofactors required for folic acid to "do its job".

Shrubsole, Martha J., et al. Dietary folate intake and breast cancer risk: results from the Shanghai Breast Cancer Study. *Cancer Research*, Vol. 61, October 1, 2001, pp. 7136-41

FOLIC ACID AND DYSPLASIA

Folic acid is essential for cell division and normal cell replication (due to its involvement in DNA synthesis). The very common cervical dysplasia occurs due to faulty cell replication resulting in abnormal tissue growth. Evidence suggests, that in some women, taking oral

contraceptives can result in a localized folic acid deficiency in the cells of the cervix leading to dysplasia. Researchers have had success in using folic acid to stop or reverse cervical dysplasia in women taking oral contraceptives. Up to 10mg (12 tablets of **Folic Acid 800**) a day for as long as 4 months may be needed to effectively treat the dysplasia, this seems to be a better option than surgery or cervical cancer. *American Journal of Clinical Nutrition*, 35 (1982); 73 – 82. *Journal of the American Medical Association*, 244:7 (1980); 633 – 634.

FOLIC ACID AND BIRTH DEFECTS

The greatest attention received by folic acid is due to its ability to prevent neural tube defects, the structure in the embryo that gives rise to the brain, spinal cord and other parts of the central nervous system. In 1992 the U. S. Public Health Service released an advisory stating that “*in order to reduce the frequency of neural tube defects and their resulting disability, all women of childbearing age in the United States who are capable of becoming pregnant should consume 400 mcg of folic acid per day for the purpose of reducing their risk of having a pregnancy affected with spina bifida or other neural tube defects.*” I should point out that the studies showing the best results did not use folic acid supplementation ONLY. Supplementation of B12 along with folate showed superior results in preventing neural tube defects. Studies combining 800 mcg of folic acid with multimineral supplementation show excellent results as well. Neural tube defects begin to occur between 18 to 30 days of becoming pregnant and therefore may have already occurred before a woman knows she is pregnant.

If folic acid need is suspected in a female who is of child-bearing age and is considering becoming pregnant in the immediate or near future or has had a birth-defective child or miscarriage in the past, folic acid deficiency must be corrected if present. Because neural tube defects occur so early on in pregnancy, folate stores must be adequate BEFORE conception occurs and kept adequate during pregnancy. Jonathan Wright, M.D., and other investigators have found that serum folate studies are not a true picture of “functional” folate need. However, an inexpensive blood test can help us determine if a functional folate need exists. That test is a neutrophil hypersegmentation index. Norbert Tietz, author of *Clinical Guide to Laboratory Tests*, W. B. Saunders Co., Second Edition, 1990, has found that neutrophils begin to hypersegment after as little as 11 days of functional folic acid need.

Other tests than can help confirm folic acid need are:

- Red Cell (Erythrocyte) folate
- Mean Corpuscular Volume (MCV)
- Mean Corpuscular Hemoglobin (MCH)

Serum or urine methylmalonic acid studies should be performed as well to insure a concomitant vitamin B 12 needs dose not exist.

The chances that your female patient needs folic acid are good if she:

- drinks a lot of coffee
- uses alcohol more than moderately
- uses or has used oral contraceptives
- uses other medication that is a folate antagonist

FOOD SOURCES OF FOLIC ACID

The best natural sources of folic acid are liver (beef, lamb, pork and chicken); spinach, kale and beet greens; asparagus, broccoli and whole wheat. Estimates are that only 25 to 50 percent of folic acid in food is bio-available. Research shows better results from folic acid supplementation than trying to get it out of food, especially when trying to overcome serious folic acid deficiency. Documented folic acid deficiency can take 4 months of supplementation to correct.

Folic acid is inexpensive and has no known toxicity. Its proper use can prevent a lifetime of needless difficulty and heartache for many people that come into your office. The cautions to folic acid use are, it can exacerbate an existing B12 deficiency and it can oppose zinc. Statistics indicate, and it's not hard to see why given our life-style, that folic acid deficiency is the most common vitamin deficiency in America today.

SUPPLEMENTAL SOURCES OF FOLIC ACID FROM BRC

BRC manufactures a number of products that contain folic acid (please see the Product By Ingredient section of the BRC Catalog). The products that contain the highest allowable non-prescription dose of folic acid (800 mcg.) are listed here for your convenience.

Folic Acid 800
Bio Cardio Packs
Glucobalance

B12 2000 Lozenges
Bio GGG-B
Pre-Natal Pack

Available from Viotron International, Ltd
(800) 437-1298