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## RESEARCH

## Folic Acid

## Preventing Birth Defects, and More

The FDA has adopted new rules mandating that flour must be fortified with folate in order to prevent neural tube birth defects. However, a debate has been going on between the FDA, the Centers for Disease Control and the Prevention Folic Acid Working Group as to how much folic acid should be added to the food supply.



The FDA thinks folate supplementation of less than 400 micrograms a day will accomplish what is necessary, while many scientists want enough folic acid added so that the average American will consume at least that amount. In fact, some scientists argue that more than 800 micrograms of folate is necessary. The FDA seems only concerned about the political pressure brought about by groups who want to eliminate neural tube defects by fortifying the food supply with the minimum amount of folate. The FDA appears oblivious to the more important role that folate plays in the reduction of cardiovascular mortality. In the Dec. 18, 1996, issue of *The Journal of the American Medical Association (JAMA)*, a study was published entitled, "Folic Acid Fortification of the Food Supply: Potential Benefits and Risks for the Elderly." The purpose of the study was to determine if universal folate supplementation would mask the effects of a vitamin-B12 deficiency, or cause other health problems in the elderly.

In this JAMA report, a total of 747 subjects between 67 and 96 years of age were evaluated to determine folate intake and its effects on the blood concentrations of B-vitamins.

The following conclusions were made about folate and cardiovascular disease:

- "Increased folate intake is likely to benefit the elderly population in general because [folate] is associated with reduced homocysteine, which in turn has been linked with fewer heart-disease and stroke events, major causes of morbidity [disease] and mortality."
- "Folate-supplement users clearly have the highest plasma folate levels and lowest homocysteine levels."
- "Without fortification, 65 percent of elderly people had daily intakes of 400 micrograms or less of folate."
- "Along with improvement in folate status, folate fortification will produce a large decrease in expected proportion of the population with high homocysteine levels."
- "The proportion of subjects with high homocysteine levels decreases . . . as more folic acid is added to the food supply."
- "From the projected decrease in homocysteine levels associated with increased folate intake related to fortification, we estimated the decreased risk of coronary artery disease and carotid artery stenosis of 25 percent or greater. The projected risk levels continue to drop with increasing levels of folate fortification."

## What Are The Risks?

One problem is, folic acid masks the signs of vitamin-B12 deficiency in the blood, and could cause a delay in its treatment with vitamin-B12 supplements. Some reports indicate that folate could worsen neurologic problems associated with vitamin-B12 deficiency, while others contradict this.

Many elderly people are deficient in vitamin B12. The major effects of vitamin B12 deficiency are megaloblastic (macrocytic) anemia, neuropathies and central nervous system disorders.

The good news is that the vast majority of those who suffer from vitamin-B12 deficiency readily absorb the unbound form of vitamin B12 found in supplements, but have a condition that prevents them from absorbing food source B12 that is protein-bound. This means that the risk of a vitamin-B12 deficiency developing can be reduced drastically by taking vitamin B12 supplements along

with folic acid.

There is a very small minority of elderly people who cannot absorb vitamin B12 at all. These people require vitamin B12 to be taken in a sublingual form or by weekly injections. A blood test that specifically measures vitamin-B12 levels can reveal a deficiency if neurological symptoms persist after supplements. Vegetarians often suffer from vitamin-B12 deficiency if they do not take supplements.

However, the findings in the JAMA study showed that so few elderly people would encounter a vitamin-B12 deficiency that the benefits of folic acid in protecting against cardiovascular disease clearly outweigh the risks of covering-up a deficiency. Here is what JAMA has to say regarding folate and B12 deficiency:

"Success in treating pernicious anemia has been noted with 300 to 1,000 micrograms of cobalamin (vitamin B12), without evidence of toxic adverse effects. Our results support the argument that the addition of cobalamin to supplements containing folic acid would be a prudent action."

Foundation members using Life Extension Mix or Life Extension Booster to obtain their folate have been receiving cobalamin with every dose.

Remember, even though folate does not cause vitamin-B12 deficiency, folate can mask such a deficiency. For nearly two years, the Life Extension Foundation has shipped to its members a folic acid supplement that also contains 300 micrograms of vitamin B12, to make sure those taking high amounts of folate also have adequate levels of vitamin B12.

Each capsule of this new folic acid and vitamin B12 supplement contains 800 micrograms of folic acid and 300 micrograms of vitamin B12

The authors of the JAMA paper conclude that the benefits of folate fortification through projected decreases in homocysteine levels and heart-disease risk should greatly outweigh the expected risks of undiagnosed vitamin-B12 deficiency. They then state that more research into the mechanisms of vitamin-B12 deficiency should be studied before higher levels of folate in the food supply should be recommended.

#### The Foundation's Position

Members of the Life Extension Foundation should sympathize with the lay public who have to put their health and life in the hands of bureaucratic committees, which take years to make any kind of decision. Millions of Americans die as the bureaucrats argue over minute details and political objectives.

In the case of folate food fortification, the FDA now mandates that folate be part of every American's diet, while only a few years ago the FDA was seeking criminal charges against anyone who promoted folate supplementation for the improvement of health.

We think it is a good idea for anyone taking folate to also have adequate vitamin-B12 levels because of studies showing that folate and vitamin B12 work together to lower toxic homocysteine levels. The addition of vitamin B12 eliminates the concern for more than 99 percent of the population that a B12 deficiency will be missed because of folate intake.

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