

Is your breakfast giving you cancer?

By Laura Beil

Prevention

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Chances are, you started your day with a generous helping of folic acid. For more than a decade, the government has required enriched grains — most notably white flour and white rice — to be fortified with folic acid, the synthetic form of the B vitamin folate.

Many food manufacturers take it further, giving breakfast cereals, nutrition bars, and beverages a folic acid boost, too. The extra nutrient isn't meant for you, though — it's added to protect fetuses from developing rare but tragic birth defects. The fortification effort appears successful: Since 1998, the number of these birth defects dropped by about 19 percent. But for women past the years of having children, as well as for men of any age, unnatural dosages of this nutrient don't seem to be helpful — and may even be harmful.

Indeed, many scientists have grown increasingly concerned about mounting research — including a study published last winter in the *Journal of the American Medical Association* — suggesting that all the extra folic acid might increase your odds of developing cancer. "The more we learn about folic acid, the more it's clear that giving it to everyone has very real risks," says folic acid researcher David Smith, PhD, a professor of pharmacology at the University of Oxford in England.

If there's a nutrient it's easy to overdose on, it's folic acid. The vitamin is all around us, slipped into the cereal we eat for breakfast, the bread we eat for lunch, the energy bars we snack on, and the supplements that over one-third of us take regularly. Women are supposed to get 400 mcg a day, the amount that protects fetuses. Some cereals, though, contain more or have a serving size that makes it easy to pour a double dose. Add to that a vitamin washed down with your vitamin-fortified drink, and you may get a megadose before walking out the door.

The folic acid fallout

The risk experts worry about most: colon cancer. Last year, health officials in Chile reported that hospitalization rates for colon cancer among men and women age 45 and older more than doubled in their country since fortification was introduced in 2000. In 2007, Joel Mason, MD, director of the Vitamins and Carcinogenesis Laboratory at the Tufts University School of Medicine, described a study of the United States and Canada suggesting that rates of colon cancer rose — following years of steady decline — in the late 1990s (around the time our food was being fortified).

Better screening or an aging population could not explain the difference, which amounts to an additional 15,000 cases of cancer per year in the United States alone between 1996 and 2000, according to Mason's calculations. "It's a critical enough issue that it can't be ignored," he says.

Other research links high doses to lung and prostate cancers. In one study conducted in Norway, which doesn't fortify foods, supplementation with 800 mcg of folic acid (plus B12 and B6) daily for more than 3 years raised the risk of developing lung cancer by 21 percent. Another, in which men took either folic acid or a placebo, showed those consuming 1,000 mcg of folic acid daily had more than twice the risk of prostate cancer. And a new worry recently came to light when scientists discovered the liver has limited ability to metabolize folic acid into folate — which means any excess continues circulating in the bloodstream. "Unlike folate, folic acid isn't found in nature, so we don't know the effect of the excess," says Smith.

The folic acid paradox

Extra folic acid might make sense for all adults (and not just women of childbearing age) if it kept common problems like heart attack, stroke, or age-related memory decline at bay. However, those hoped-for benefits are still in question. We all need the natural folate found in leafy greens, orange juice, and other foods, and diets high in these foods are perfectly healthy; many researchers, though, believe that folic acid may be both friend and foe. When cells in the body are healthy, folate helps shepherd along the normal replication of DNA. But when cells are malignant or in danger of becoming so — and as many as half of adults older than 60 could already have precancerous colon polyps, while most middle-aged men have precancerous cells in their prostates — animal studies suggest excess folate in the form of folic acid may act like gas on the fire.

The research is fueling fierce debate in other countries about the wisdom of fortifying the food supply. After 2 years of public hearings, a British government advisory panel recommended last October that the United Kingdom proceed with mandatory fortification. In contrast, last summer health officials in New Zealand abruptly delayed that country's plans to begin mandatory fortification of bread products.

Stay in the safe range

"If you're eating a balanced diet and not taking a multivitamin, you're probably fine," says Karin Michels, ScD, PhD, an associate professor in the department of epidemiology at Harvard School of Public Health. But if you pop supplements and eat a lot of cereal, a lot of bread, and a lot of white rice, you may want to rethink your consumption of folic acid. If it's not possible for you to become pregnant, lowering your intake to 400 mcg won't hurt — and might help save your life. Here's how to do it:

- Continue to eat as many foods as you want that contain natural folate (leafy greens, citrus fruits, lentils, and dried beans). You can't OD that way.
- Read labels. Cereals vary wildly in the amounts of folic acid they contain, and you can probably figure that you're getting more than the label says. One study of the 29 most popular cereals found

that the actual level of folic acid and iron was up to 3 times higher than the amount listed. Check your sports drink too — many contain folic acid.

- Switch to non-instant oatmeal, which isn't usually fortified, instead of other breakfast cereals.
- Choose whole grain flour, bread, cereal, pasta, and rice. Whole grain foods aren't required to be fortified. As a result, 1 cup of whole wheat flour has only about 50 mcg of folic acid, while the same amount of refined flour contains almost 400 mcg. If your bread or cereal is made with whole grain flour, that should be the first ingredient listed.
- Rethink that multivitamin. A recent CDC study discovered that half of supplement users who took supplements with more than 400 mcg of folic acid exceeded 1,000 mcg per day of folic acid. Most supplements pack 400 mcg. If you take a multi as insurance, ask your doctor whether individual supplements (of vitamin D and calcium, for instance) may be smarter.

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