



MTHFR & Folic Acid Fortification: Facts vs. Fiction

Eating foods fortified with folic acid (vitamin B9) is a safe and effective way to get the nutrients you need, regardless of MTHFR status.

Mandatory folic acid fortification has long been recognized for its effectiveness in reducing neural tube defects. A significant body of evidence suggests that the benefits of folic acid fortification extend far beyond pregnancy outcomes. By fortifying commonly consumed foods with this essential B vitamin, public health policies have helped improve health, especially in populations vulnerable to nutrient deficiencies.

The scientific consensus is clear: fortification with folic acid is safe, effective, and biologically compatible with all MTHFR genotypes.

Know the facts: Marketing or influencer claims that individuals with MTHFR variants cannot process folic acid, or that folic acid is inactive, are misleading. Claims that individuals with MTHFR variants must purchase “more active” active folate forms (5-MTHF/L-methylfolate), which are usually more expensive, to prevent birth defects are scientifically inaccurate and financially predatory.⁹

If you have an MTHFR gene variant, rest easy. Consuming foods fortified with folic acid is safe and can protect your health.



Understanding the MTHFR Gene

The methylenetetrahydrofolate reductase (MTHFR) gene provides instructions for making an enzyme that helps the body process vitamin B9, also known as folate.

- **Variants are normal:** Most people in the US have at least one MTHFR variant. They are common, expected, and not a disease.^{1,2}
- **Processing folic acid:** While certain variants (like the 677TT genotype) result in a slightly reduced enzyme capacity, **everyone with an MTHFR variant can still process folic acid. After supplementation with folic acid, studies show that women with the CT and TT genotypes:**
 - have fewer neural tube defect-affected births, at the same rate as women with the CC genotype^{1,3}
 - are able to reach the blood folate levels considered optimally preventive of neural tube defects
- **People with an MTHFR variant need more folic acid:** Because people with an MTHFR variant have a reduced ability to metabolize folic acid, **they actually need more folic acid to achieve the same folate levels as those without the MTHFR variant.**^{1,4}
- **Folic acid or 5-MTHF?** Some people with CT or TT variants may choose to take supplements containing a reduced folate form (i.e., 5-MTHF/L-methylfolate) that requires less metabolism than folic acid.
 - **However, only folic acid has been clinically proven to prevent neural tube defects, and women looking at prenatal supplements should choose folic acid.**
 - Only folic acid can be used in fortified foods because 5-MTHF is heat-sensitive, and it is destroyed during food processing and cooking.





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The Evidence: Folic Acid Strengthens Health



Boost blood folate levels: Research shows that when taking the same amount of folic acid, people with an MTHFR variant have blood folate levels only slightly lower than those without it—still well within the range that is effective in preventing the serious health risks like birth defects or cardiovascular disease that come with folate insufficiency or deficiency.^{1,2}



Lower risk of cardiovascular disease: High homocysteine levels are a risk factor for heart disease. While the TT variant can lead to higher homocysteine levels, this only occurs if folate levels are low. Data shows that individuals with the TT variant have normal homocysteine levels as long as their folate status is adequate. This can be achieved by consuming fortified foods fortified with folic acid or taking supplements.^{1,5}



Protect against cancer: If folate status is adequate, MTHFR variants can be protective against certain types of colon cancer.^{6,7,8} The risk of colon cancer only increases if an individual has the TT variant and low folate status. This makes consistent access to foods fortified with folic acid a critical cancer-prevention tool.^{7,8}



Prevent birth defects: Folic acid is the only form of folate clinically proven to prevent neural tube defects like spina bifida. No matter which MTHFR genotype a woman has (CC, CT, or TT), she can reach the blood folate concentration necessary to protect a developing baby by consuming 400 mcg of folic acid daily.^{1,2}



An affordable form of vitamin B9 that stands up to cooking: Folic acid must be used in fortified foods because it is heat-stable. Folic acid is a less expensive form of folate to use in supplements, improving access for everyone.⁹



Safe to consume (regardless of MTHFR genotype): Consuming folic acid does not contribute to or worsen any adverse health effects that people with an MTHFR variant may be experiencing.^{1,2,9}

References

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