Repeated Miscarriages and Folic Acid…What You Need To Know:

Folic Acid & MTHFR: The Good, The Bad, and The Ugly

The Good…

What is Folic Acid?
First: What is folic acid? Folic acid is a synthetic form of folate. According to the Mayo Clinic, folate (vitamin B-9) is important in red blood cell formation and for healthy cell growth and function. The nutrient is crucial during early pregnancy to reduce the risk of birth defects of the brain and spine.

Folate is found mainly in dark green leafy vegetables, beans, peas, and nuts. Fruits rich in folate include oranges, lemons, bananas, melons, and strawberries. Diets low in folate are linked to birth defects, depression, heart disease, and cancer. This nutrient was identified in the 1930s, and a synthetic form was created called folic acid. This synthetic folic acid was then used in vitamins and prenatals for the prevention of birth defects.

Then, in the 1990s, the government ***mandated*** that food manufacturers include this synthetic form in ***all*** wheat and grain products. That's why we see “Fortified with Folic Acid” on all of these labels. And it seemed to have helped. According to the CDC, the occurrence of birth defects and neural tube defects has dropped since 1998.

That’s great! The government cares about us and our health, right?
Well, yes, but…

The Bad…

It turns out that the synthetic form of folate, folic acid, is not as good as its original source. The body has to go through many steps to convert folic acid into its usable form of folate. It can actually be bad for almost half of the population that have a common gene mutation called MTHFR.

MTH…what? Yes, it sounds like the *Mother*!@#$er gene!

What is MTHFR? (*This can get a little technical, so hang in there with me.*)

“Methylenetetrahydrofolate reductase (MTHFR) is an enzyme that helps the body process folate and homocysteine and is also involved in the metabolism of amino acids. MTHFR is important for the conversion of 5,10-methylenetetrahydrofolate to 5-methyltetrahydrofolate, which is the primary form of folate in the blood. 5-methyltetrahydrofolate is necessary for the conversion of homocysteine to methionine, another amino acid."

Mutations in the MTHFR gene can lead to a variety of health conditions, including depression, anxiety, bipolar disorder, schizophrenia, colon cancer, leukemia, severe pain and tiredness, nerve pain, migraines, pregnancy issues, and ***increased miscarriages***.

It is estimated that close to **50% (44%)** of the population potentially carries this gene mutation.

The Ugly…

So here we are:

We need folate (B9) for health. The vitamin companies and the government are using folic acid in vitamins, prenatals, and wheat and grain products. However, close to half of the population can't use this form, which is linked to many adverse health effects like repeated miscarriages, depression, anxiety, cancers, etc.

So, what this means is that if you have this gene variant, eating foods with synthetic folic acid will be bad for your health.

What happens is that when your body cannot convert folic acid, it creates a buildup of homocysteine—an inflammatory marker. Homocysteine is an amino acid. Vitamins B12, B6, and folate break down homocysteine to create other chemicals your body needs. High homocysteine levels may mean you have a vitamin deficiency.

Without treatment, elevated homocysteine increases your risks for dementia, heart disease, stroke, and repeated miscarriages.

Why Now?

It seems like many of these conditions have gotten worse over the last few decades. And there may be a reason why that many are not talking about…

The Missing Piece of the Puzzle…

Riboflavin Deficiency and Epigenetics

According to the Cleveland Clinic, epigenetics is the study of how our environment influences our genes by changing the chemicals attached to them. We may have a gene for something, but it's the environment that causes that gene to express or activate—or not.

It turns out that if you are lacking in riboflavin (vitamin B2), it causes the MTHFR gene mutation to express. A recent study links a lack of riboflavin to poor or impaired methylation caused by the MTHFR gene mutation.

"MTHFR may be sensitive to riboflavin status, particularly in subjects with the 677C→T substitution of the MTHFR gene. In subjects with the TT genotype, higher riboflavin intake could be necessary for the formation of adequate amounts of 5-methyl-THF involved in homocysteine remethylation."

So, where can we find it?

Foods that are particularly rich in riboflavin include eggs, organ meats (kidneys and liver), lean meats, and milk. Some vegetables also contain riboflavin.

Bringing It All Together…

What can we do?

Firstly, there is an almost 50/50 chance you have the MTHFR gene mutation. So, it would be good to know if you have the gene mutation.

- **Get genetic testing.** There are many genetic testing companies. 23&me is a popular one. (I am not affiliated with any company and have no financial ties.)
- **Switch to a supplement with methylfolate.** Methylfolate is the "predigested" form of folate that is readily available and usable in the body. Many vitamin companies are already using this form. ***Read labels*!**
- **Test your homocysteine levels.** Normal is from 5–15. If they are high, around 50 or over, you are at risk for many adverse health effects.
- If you test and find out you *do* have the MTHFR gene, **avoid or reduce enriched wheat and grain products.**
- **Increase your riboflavin intake** by incorporating more organ meats and eggs into your diet.

Knowing your gene status is the key to reversal and/or prevention of this terrible health condition and many others.

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https://youtu.be/PN07PoqoKzc

Citations

1. CDC - Prevalence of Birth Defects.
2. MedlinePlus - MTHFR Gene.
3. Cleveland Clinic - Homocysteine.
4. NIH - Riboflavin and MTHFR.