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**What is MTHFR?** In 2003, a genetic study called the Human Genome Project was completed. And via that study, they discovered that an important gene towards your health and well-being, called the *methylenetetrahydrofolate reductase* (MTHFR), was defective in a lot of folks. In fact it supposedly effects 30-50% or more of the population.

It's a simple blood draw at the lab that can be ordered. What is normally checked are two mutations in the MRHFR gene: C677R and A1298C. A serum Homocysteine should also be ordered. Sadly, this is an expensive test and many insurance companies will not pay for it due to it being "exploratory". And this might not even be an accurate test... (more on that later)

You shouldn't assume you have the defect. Getting tested is important.

Some alternative doctors have the viewpoint that the "MMTHFR gene mutation" is not really a MUTATION but rather a toxic overload in the body that prevents the conversion of nutrients to micronutrients. Their hypothesis is that the Epstein Barr Virus is still active in the person's body and creating havoc (maybe other invaders are present too...). In any case the following will help you to better understand how to heal this situation in your body.

#### **What a *DEFECTIVE (mutated)* MTHFR gene supposedly does to you**

- *It produces a defective MTHFR enzyme of different varieties* i.e. it functions less than optimally, such as performing at only 40% of its capacity, or 70% of its capacity. It can mean you won't break down toxins or heavy metals well i.e. you could find yourself with high iron, or high copper, or high lead, or high mercury....etc. High copper can also cause low ferritin, even though your iron levels look great!

- *The defective enzyme doesn't break down folate vitamins properly* (of which folic acid is the precursor to), which can cause *high homocysteine*, which can increase your risk of coronary heart disease (arteriosclerotic vascular disease or venous thrombosis), and related heart and BP conditions, as well as increasing your risk for dementia.
- *Homocysteine is poorly converted to glutathione*, which is your body's chief antioxidant and detoxifier. You are then more susceptible to stress and toxin buildup.
- *Homocysteine is poorly converted to methionine, and less methionine* can raise your risk of arteriosclerosis, fatty liver degenerative disease, anemia (see Wiki), increased inflammation, increased free radical damage... and produce *less SAM-e*
- Less SAM-e can increase depression
- *And more broadly*, an MTHFR defect can increase your risk of a variety of cancers (including breast and prostate cancer), stroke, heart problems, congenital defects, depression, IBS (irritable bowel syndrome), miscarriages, migraines, chemical sensitivities, etc.
- *You can find yourself with high folate or high B12* i.e. your body will have problems converting inactive forms of folate and B12 to the active forms. So the inactive folate or B12 will simply build up in your serum, also inhibiting the active forms. Most serum folate tests are actually measuring folic acid, which needed to be converted to methylfolate to be used metabolically.
- The journal Molecular Psychiatry states that "*Schizophrenia-like syndromes, bipolar disorder, Parkinson's disease, Alzheimer's disease and vascular dementia have all been associated with one or more mutations of the MTHFR gene*". (2006;11, 352–360)

### More than one mutation of the MTHFR gene

Your mother and your father pass down Genes. Most literature states there are 40-50 different mutations of this important gene, which could be passed down by one, or both, or your parents. But only two are particularly problematic: mutations on the points at C677T and A1298C. The numbers refer to their location on the MTHFR gene. You will also sometimes just see them written as just 677 and 1298. But do remember... this could just all be happening due to a toxic overload in your body!

### There are many combinations of MTHFR:

- **Homozygous:** means you have both copies of either the 677 mutation, or the 1298 mutation, one from each parent.
- **Heterozygous:** means you have one copy of either the 677 mutation, or the 1298 mutation, plus a normal one from the other parent.
- **Compound Heterozygous:** means you have one copy of the 677 mutation from one parent and one copy of the 1298 mutation from the other parent.
- **Triple homozygous mutations (more rare):** an example would be one C677T, one A1298C, and a P39P or R594Q, for example.

### Are you overwhelmed yet?

People's genes are being wrongfully blamed for so many "medical mysteries". If you are suffering from a mystery illness with unknown causes, you may have been told you have

“bad genes,” “dysfunctional genes,” a “gene mutation,” or “faulty genes.” Again, the blame falls on you and your body because medical research and medical science have yet to find true answers for these health problems.

The topic of gene mutation is growing in popularity, and it is critical that you and your loved ones do not fall prey to the blame being put on your genes. Well intentioned doctors and practitioners are being drawn into this idea that there is a connection between people’s health issues and their genes. It’s easy to look at the hereditary traits passed from one generation to the next and start to believe that your genes play a role in the health problems you face.

Yes, your mother, grandfather or other family members may look like you and even display similar health symptoms, but this does not mean that your genes are related to the chronic illnesses you find yourself up against! If this damaging misconception continues to spread, generations to come will believe all of their chronic illnesses stem from gene-related issues and billions of dollars will be spent investigating this faulty idea as people continue to grow more and more sick. Realize that your mother, grandfather, great grandmother all ate the same way, lived in the same areas, had the same viruses, and had the same bad food habits, etc. THAT is more the cause of the family’s illnesses than any supposed “gene defect”!

### **What is a MTHFR gene mutation?**

If you are told by your doctor or practitioner that you have a MTHFR gene mutation, they will most likely explain that this means your body is unable to convert folate or folic acid into a usable form. They may also remark that your body struggles with certain important conversion and methylation processes. There is some truth in this statement, but your body’s inability to properly convert, methylate, or detox has nothing to do with a gene mutation issue.

Currently, medical science is suggesting that certain people have mutated genes that no longer produce the required enzyme (methylenetetrahydrofolate reductase) needed for functions like glutathione production and the easy assimilation of folate and folic acid. This isn’t true. There’s another reason you might not be methylating properly, and it’s not your genes.

### **The Truth About Genes**

The genes in our bodies have multiple purposes and act in numerous ways, but they can never become mutated. It is critical you understand this— your genes cannot mutate. If a gene interacts with a contaminant or pollutant, it may not function as well, but it will still not technically mutate. If you are ever diagnosed with a MTHFR gene mutation, know that your gene is not mutated or even problematic. Something else in your body is triggering off the faulty MTHFR gene mutation test.

### **The MTHFR Gene Mutation Test**

The MTHFR gene mutation test is currently in its infancy and is not as accurate as the medical community believes. If you choose to have the test done, it is important that you know what the results of this test really mean for you and your health. The MTHFR gene mutation test, like the antinuclear antibody test (ANA) and the C-reactive protein test, is just a basic test that reveals inflammation in the body. Although this test is given under the guise of a gene test and a real gene is being looked at, it is ultimately only able to indicate if there is inflammation in the body. Fortunately, once you are aware that the test is faulty and there’s another reason for why you tested positive, you can take the necessary steps to begin healing.

## **Look at the Liver**

If you've been told you have a gene mutation, you can now disregard this information. It's not accurate. In reality, it is highly likely you have an issue in the liver. There may also be an issue in the intestinal tract, but typically the main issue lies in the liver. The inflammation that triggers off a positive MTHFR gene mutation test stems from toxic byproduct wreaking havoc as it moves from the liver into the bloodstream. This can play a part in producing abnormal homocysteine levels.

Usually, viruses, heavy metals, or a combination of the two are residing in the liver and producing toxic byproduct. As the amount of byproduct increases over time, the liver grows less efficient and gradually stops cleansing the blood. Eventually, this "dirty" blood prevents proper methylation or the conversion of folate or folic acid. Regardless of whether you are underweight or overweight, or whether you are feeling healthy or poorly, a MTHFR gene mutation diagnosis means your liver is showcasing signs of wear and tear and needs proper support and care.

## **Methylation Problems**

Methylation has to do with the conversion and break down of important chemicals, chemical compounds, and phytochemicals that are drawn from sources such as the food we eat, the clean water we drink, and the sunshine we absorb. Breaking down chemicals into smaller and smaller chemicals is a very extensive process, and the methylation explanation given by a doctor or practitioner will not even begin to address the complexity of chemical break downs in the body. The enormous amount of chemicals we have in our bodies is still a mystery to medical research and medical science. Medical science also believes the liver is only accountable for four hundred to five hundred chemical responsibilities that help keep us alive and well, but in reality there are thousands of chemical responsibilities that have yet to be discovered. Many of these unknown chemical responsibilities play a role in the body's methylation process.

If you are handed a positive MTHFR gene mutation test and your doctor or practitioner proposes you have a methylation problem, they may be correct. But, the methylation issue is not related to a gene mutation as they might also suggest. In fact, if you take the necessary steps to reverse your methylation issues, you will no longer trigger off a positive MTHFR gene mutation test.

**Healing the liver and cleansing the blood are two important pieces of resolving methylation issues.** Lowering the viral load that created toxic byproduct in the liver is another critical step. If it was actually a mutated gene causing the problems, you could never change the gene mutation test results, but because it's caused by another issue, it is possible to heal and reverse the test's results.

## **Underlying Viral Infections**

Viruses play a part in numerous conditions including Lyme disease, rheumatoid arthritis, multiple sclerosis, eczema, chronic fatigue syndrome, and many more. In all of these health conditions, viruses get into the liver and release toxic byproduct. As a result, it is likely that if you've been diagnosed with Lyme disease or another virus-related chronic illness, you will trigger off a positive MTHFR gene mutation result as well. Again, it is important to remember that this does not mean you have a gene mutation. The methylation and homocysteine issues you may be experiencing are the result of viral byproduct clogging up the liver and making its way into the bloodstream. Thinking you have a mutated gene will never help you heal from Lyme disease, multiple sclerosis, eczema, psoriasis, sarcoidosis, colitis, or any other chronic illness, but knowing the truth can help you start to reclaim your health.

If you're concerned about methylation or detox issues, tell your doctor you think you may be dealing with low level viral issues in the liver that are triggering symptoms and creating blood toxicity. By using the information you learn here and working with a skilled practitioner, you maybe able to completely reverse any viral-related health issues and methylation problems you are experiencing.

### **Misinformation Prevents Healing**

Thinking you have a gene mutation when you don't can be incredibly damaging and may prevent you from genuinely healing. This harmful idea can dwell in a subconscious area of your mind and have a detrimental impact on your immune system. If you've been told you have a gene mutation, it is important that you recognize this is faulty, untrue information. This awareness plays a significant role in being able to truly begin healing.

### **Healing Foods**

Wild blueberries are incredible for cleansing and healing the liver. Celery juice is phenomenal for this as well. 16 oz of lemon water twice a day can offer profound liver and methylation support. Try incorporating sweet potatoes and winter squash into some of your meals as well. In addition to bringing supportive foods into your diet, it is important to take out foods that don't serve your body during the healing process. Exclude dairy, eggs, and wheat.

**Lowering the fat in your diet is an important step to take while healing the liver.** When you lower your fat intake, the liver does not have to create as much bile to break down the food and has more time and energy to rid the body of the poisons that are contributing to methylation issues and other symptoms. If you are a meat eater, try lowering the amount of animal protein you consume. If you can keep your animal protein consumption to once a week for a period of time (6 months or longer), your liver will likely be able to improve more quickly.

If your diet is plant-based, try to keep the fats in your diet, such as nuts and avocado, low and bring in more fresh fruits and vegetables. Once you lower your fat intake, the liver is able to cleanse, recover, and help reverse any methylation issues.

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