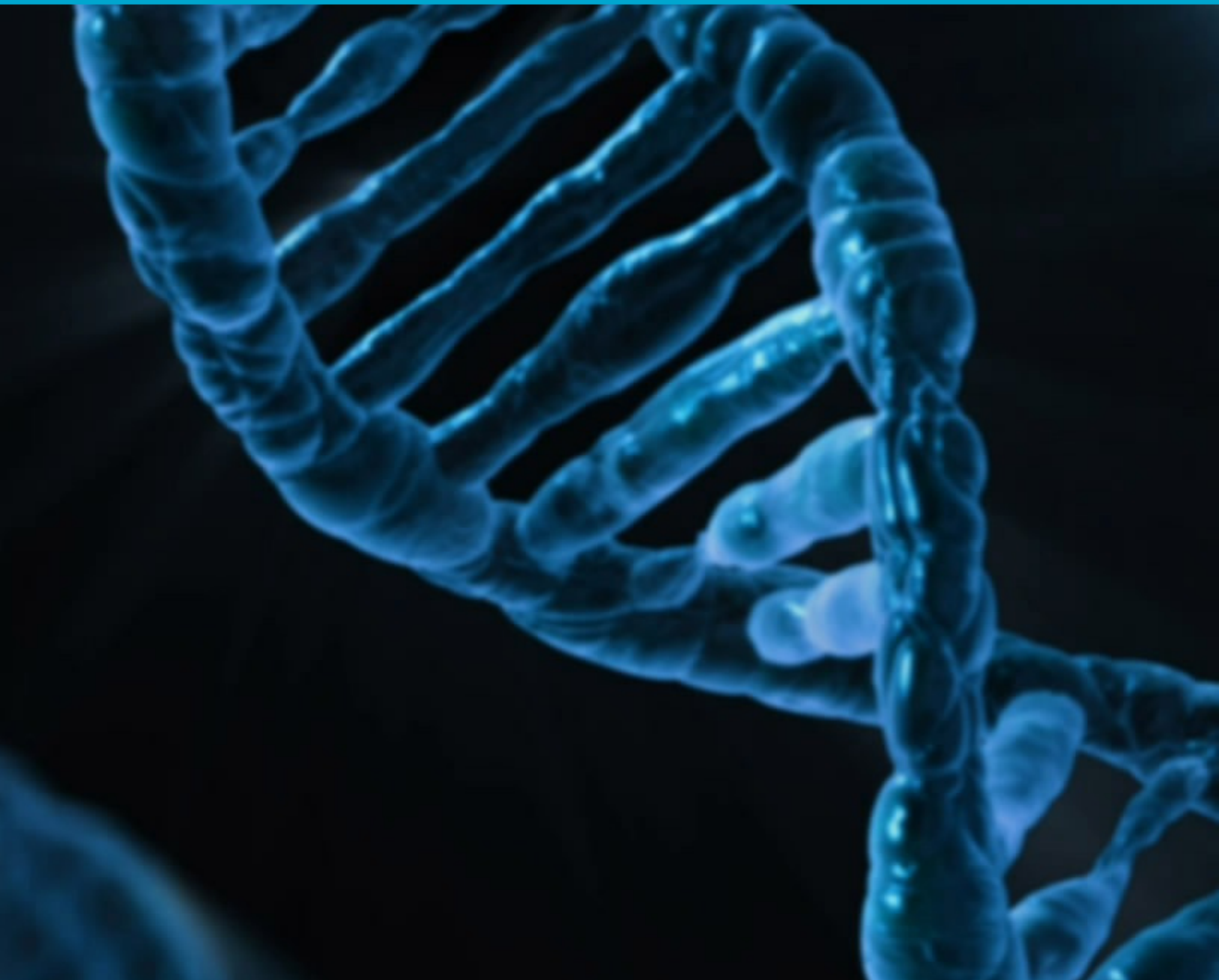


MASTERING YOUR DNA

MJHFR



MTHFR & MUTATIONS

Methylenetetrahydrofolate reductase (MTHFR) is both an enzyme and a gene; it is crucial to the body because it processes folate (folic acid) for our bodies to utilize it. Mutations in this gene result in decreased activity of the enzyme, which causes issues with the methylation in our body, leading to important body functions to become disrupted – which include the ability to eliminate toxins properly.

Methylation is an important biochemical process that is essential for the proper function of nearly all your body's systems; it occurs billions of times each second and helps repair your DNA, controls homocysteine, recycles molecules your body needs for detoxification, helps keep inflammation in check and maintains your mood. To avoid serious conditions that are caused by the breakdown in methylation, the key is to maximize methylation (protect your methylation) by understanding what affects your methylation process such as toxic exposure, smoking, medications, poor diet, malabsorption, and decreased stomach acid.

The main goal to help the missing MTHFR enzyme is to optimize methylation, which refers to a series of approximately 100 reactions that are responsible for the production of T-cells (immune cells), glutathione (vital for immune function), energy production and for creating dopamine and serotonin. Patients lacking the MTHFR enzyme can benefit from taking B12 and methyl folate; they work together and are prime components for methylation reactions.

THE MTHFR A1298C MUTATION MAY AFFECT YOU IF YOU ARE EITHER:

- Homozygous A1298C MTHFR mutation
- Compound heterozygous A1298C + C677T MTHFR mutation

A single copy of A1298C MTHFR does not appear to be harmful unless it is combined with the C677T MTHFR snp – known as compound heterozygous.

Regardless of which snp you have, either the 677 or 1298, the MTHFR enzyme's product, methyl folate, supports two major pathways: BH4 and Methylation.

BH4 regeneration is supported by methyl folate and SAM.

- Some people say that BH4 regeneration is only done by those having the MTHFR A1298C snp – and not those with the MTHFR C677T snps.
 - This is incorrect.
- There is not one study that shows bipterin recycling is limited to those with A1298C compared to those with C677T.
- In fact, lower tetrahydrobiopterin levels are likely found more frequently in those with the 677-variant compared to the 1298. Why? Because the MTHFR 677 variant is more severe than the 129.

THE BH4 CYCLE IS ABSOLUTELY CRITICAL FOR THESE VARIOUS FUNCTIONS:

- Assists the breakdown of phenylalanine
- Helps form these neurotransmitters:
 1. Serotonin
 2. Melatonin
 3. Dopamine
 4. Norepinephrine (noradrenaline)
 5. Epinephrine (adrenaline)
- Cofactor to produce Nitric Oxide (NO)

POSSIBLE SYMPTOMS ASSOCIATED WITH A1298C MTHFR MUTATIONS:

- Hypertension
- Delayed Speech
- Muscle Pain
- Insomnia
- Irritable Bowel Syndrome

- Fibromyalgia
- Chronic Fatigue Syndrome
- Hand Tremor
- Memory Loss
- Headaches
- Brain Fog

Possible signs associated with A1298C MTHFR Mutations:

- Elevated Ammonia Levels
- Decreased Dopamine
- Decrease Serotonin
- Decreased Epinephrine and Norepinephrine
- Decreased Nitric Oxide
- Elevated Blood Pressure
- Muscle Tenderness
- Ulcers
- Pre-Eclampsia

POSSIBLE CONDITIONS ASSOCIATED WITH A1298C MTHFR MUTATIONS:

- Fibromyalgia
- Chronic Fatigue Syndrome
- Autism
- Depression
- Insomnia
- Add/ADHD
- Irritable Bowel Syndrome
- Inflammatory Bowel Syndrome
- Erectile Dysfunction
- Migraine
- Raynaud's
- Cancer
- Alzheimer's

- Parkinson's
- recurrent miscarriages

HERE ARE THE COMMON RECOMMENDATIONS FOR SUPPORTING THOSE WITH C677T MTHFR MUTATIONS:

1. Limit ingestion of folic acid in fortified foods as you cannot process folic acid well.
2. Limit or cease taking supplements or drugs with folic acid in them. Talk with your doctor before stopping.
3. Avoid folic acid blocking drugs such as birth control or Methotrexate.
4. Avoid drugs which increase homocysteine such as Nitrous Oxide (most used in dentistry)
5. Avoid antacids as they block absorption of vitamin B12 and other nutrients
6. Begin understanding which of your symptoms may be related to the C677T MTHFR mutation.
7. Measure homocysteine levels – properly!
8. Inform your family members so they can also test for the MTHFR mutation
9. If you are pregnant, find an OB/GYN or midwife who is knowledgeable about MTHFR.
10. Eliminate Gluten from your diet – especially wheat.
11. Eliminate or reduce Dairy from your diet. If you must have dairy, use Goat milk.
12. Sauna or sweat somehow (Epsom salt baths, sports, yoga.) at least once to three times a week.
13. Limit intake of processed foods
14. Increase intake of whole foods and home-prepared meals
15. Eat the Rainbow of colors from fruits and vegetables – daily
16. Castor Oil Packs over your abdomen daily during times of pain, soreness, cramps
17. Vegetable/Fruit Juice Diet with Chia Seeds during times of pain, soreness, cramps
18. Limit intake of high methionine-containing foods if homocysteine elevated
19. Filter chlorine from your drinking water, shower and bath.

20. Drink at least two liters of filtered water daily mixed with vitamin C and electrolytes.
21. Eat smaller, but more frequent meals, throughout the day with some form of protein.
22. Limit protein intake to approximately 0.7 grams protein per kilogram of body weight.
23. Remove mercury amalgams and root canals with a trained biological dentist.
24. Avoid cooking, drinking, storing, and heating in any type of plastic container.
25. Use an air purifier in your home and office
26. Eliminate carpets from your home and install low VOC wood or tile flooring.
27. Eat grass-fed beef, free range, hormone free and antibiotic meats and eggs
28. Cook with electric stove and oven and remove gas stove and oven.