

MTHFR MethylTetraHydroFolate Reductase Deficiency

A video presentation is at <https://www.kadlec.org/location-directory/n/neurological-resource-center/resources/mthfr>

New approach to medical problems from the Human Genome project

The goal of the project was to identify genetic disorders that cause disease and then treat the cause-- not just the symptoms. MTHFR is the first one to have an FDA reviewed treatment. There are two common variants that can be tested (677, 1298) but there are as many as 90+ variants. If both genes are defective, the pathway functions on about 10-15% at best.

Treatments reviewed by the FDA are:

Anxiety, Depression	Deplin
Memory Loss	Cerefolin
Diabetic neuropathy (nerve Pain)	Meta NX
High Risk Pregnancy	Neevo, Neevo DHA,Thorne

Other conditions treated by this pathway but have not gone through FDA review are:

Fibromyalgia, Chronic Fatigue, Irritable Bowel, Migraines, Alzheimer's Disease, Chronic Pain, Bipolar, Schizophrenia, Parkinson's, as well as prevention of congenital anomalies. Without treatment, people are more prone to viral infections because the Methylation process is critical in shutting off viral replication as in the pathway that clears heavy metals and other environmental toxins.

Things that aggravate the genetic disorder

- Heavy metal load (fish, water, food) (mercury, lead, aluminum)
- Poor diet (highly processed foods)
- Medications (Glucophage, Birth Control, Levodopa)
- Other enzyme defects (B6 conversion, Methionine synthase and reductase)
- Other diseases (diabetes, lymphoma, ulcerative colitis)

MEASURES THAT IMPROVE SYMPTOMS:

- Dietary: Berries have the active form of folic acid already
- Mathematics, Accounting, Piano, Classical music - Suppress the overactive areas of the Brain
- Exercise

Nutritional protocol for MTHFR (revised 1/14/2019)

Using the Human Genome information there are several of the B vitamins that require activation before they are useful to the body. By taking the active forms of these vitamins you are able to bypass metabolic glitches and compensate for genetic and environmental problems. This protocol is designed to help treat these problems with nutritional therapy. It is not designed to replace your medications; however, you may be able to, over time, decrease the medications that you require to manage these problems. ***The Supplements should be added one at a time rather than start them all at once. The larger font is for the things I usually start with. The common ones to start are numbered 1, 2 and 3 in that order.***

METHYL FOLATE (Prescription) (these are variations of the same vitamin)

1. Methylfolate. Three common well absorbed brands:

Prescription options (Deplin (Metafolin) has the studies on it's formulation)

Deplin 7.5, 15 mg a day. Methylfolate tends to increase energy. Take up to 15 mg at a time. Taking ½ of the 15 mg in the am and ½ at noon helps with fatigue. About \$150 for 3 months with GOODRx coupon. Breckenridge generic is the same component. Virtus generic is not the same **EBM medical**. Made by the same process as original Deplin. Needs a prescription. About \$130 for 3 months (Doesn't have dyes or dairy)

Non Prescription Option **Methyl-Life** brand Methylfolate 15mg.

It is available at Malley's and RX pharmacy and Methyl-life.com. \$76-85 (3months)

2. Methyl B-12 5000mcg.

Oral dissolving tablets every day **Jarrow Brand** seems to be the best absorbed

Methyl B12 oral drops Works well for infants and children. Available at Malley's Pharmacy

Methyl B-12 (15 or 25mg/ml). This is the most expensive but also the most effective.

Limited availability. Requires prescription

3. N Acetyl Cysteine 1000-1200 mg (2 capsules), Once or twice a day. Brands like Thorne, NOW and Pure work well. Important for inflammation, memory, Depression and nerve healing

Other supplements that help with this particular metabolic pathway include:

Vit B6 (Pyridoxyl 5 Phosphate or P5P), 25 mg This helps with healing. Important in Diabetics, This can cause drowsiness and can build up in some people and cause headaches that feel like a tight band. If it does take only part of the month.

Vitamin C 1,000-3000 mg up to 3 times a day. This helps with regenerating glutathione as well as helping to have 2-5 Bowel movements a day.

Epsom Salt bath Soak feet or body with ½ -1 cup of salts 2/3 times/week
– The magnesium absorbs directly.

Zinc 20 -50 mg/ day Especially important in eye sensitivity which is common.

Omega 3 (Flax or Chia seed or Fish oil that has mercury removed) 1-2 tablets/day

Some fish oil tablets don't have the mercury removed. Helpful with brain/nerve healing.

Vitamin D 1000-5000IU/day

DMG-Dimethylglycine. (another option is TMG) 100-250mg/day Start with one/day

Silymarin (milk weed Thistle) 150 mg 1-2 tabs/day. Boosts glutathione.

Simple Detoxification options:

- A. **Zeolite.** I start with 1 tsp twice a day. It is a volcanic rock that helps clear toxins (like activated charcoal). Best studies is at Zeolite.com
- B. **Glutathione SR (Thorne pharmaceuticals) or SafeCell (TessMed) are two common, well absorbed brands.** 1-2 tablets/day

This may give symptoms as the toxins come out so it may be useful to do on a 3 days on, 4-11 days off at first. Available at Malley's Pharmacy (most glutathione preparations are destroyed by the stomach. These are well absorbed)

- C. **Infrared Sauna.** These have been studied and help with heart failure, pain

There are many other detoxification protocols ranging from simple to complex