

# Roadblocks to Successful Methylation Treatment for ME/CFS Patients

Version 3-27-2016

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Disclaimer: I am not a medical professional and nothing I say should be considered medical advice, only educational.

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## *Introduction*

There are a multitude of problems or roadblocks that you can run into when doing a methylation protocol.

You should have a slow release nicotinic acid form of niacin on hand before starting, in case of overmethylation. NOW is a good brand. See the section below on how to dose it.

You should also have some NOW potassium gluconate powder on hand, as your need for potassium may increase rapidly as you start methylation, and this can become a dangerous situation. See the section on potassium below for more details.

## *Roadblock 1 - Addressing Things Out Of Order Or Trying to Do Everything All At Once*

The treatment needs to be done in a certain order, as opening up pathways before they're ready can cause adverse effects or ineffective treatment. Don't try to treat everything all at once. As Amy Yasko is fond of saying, it's a marathon, not a sprint.

1. Testing – some initial testing will give you a roadmap for treatment, vs. guessing what you might need. These two tests are suggested by many methylation doctors:
  - A 23andme gene test <https://www.23andme.com/>
    - You can run your raw data through <http://geneticgenie.org> to pull out the methylation and detox SNPs, and provide an interpretation. Some doctors prefer other programs, but the raw data from the 23andme test is still used.
  - A Nutreval test - [http://www.integrativepsychiatry.net/genova\\_diagnostics\\_nutreval.html](http://www.integrativepsychiatry.net/genova_diagnostics_nutreval.html)

- A comprehensive test that will show gut problems, vitamin and mineral deficiencies, Krebs's cycle problems, toxic exposures, glutathione levels and so on.
  - This test can be further interpreted with the Nutreval Interpretation Guide - <http://forums.phoenixrising.me/index.php?threads/nutreval-interpretation-guide.21468/>
2. The gut – may take several months
  3. First Priority Mutations – SHMT, ACAT and CBS
    - SHMT and ACAT should be addressed concurrently with the gut as this can be helpful for leaky gut (see the gut section below).
    - Note: the latest 23andme chip, v4, doesn't show SHMT
    - Wait to treat CBS until after the gut treatment is completed. CBS treatment can take several more months.
  4. Second Priority Mutations –MTHFR, MTR/MTRR, BHMT and the rest
    - Now we get into the “meat” of the program, which is adding methyl supplements to restart or increase methylation.
    - This is the part where you would also want to add any co-factors for methylation, Krebs's cycle supplements, electrolytes, or other vitamins or minerals you're deficient in.
    - Gradually work up to full doses of methylation supplements as tolerated. This step can take many months, or a year or more.
    - As healing occurs over time, you may be able to drop many supplements or medications, and just get down to core methylation supplements.
  5. Everything Else
    - Anything else that is still a problem – metals, viruses, nerve healing, additional mental health issues, etc. may need to be addressed with additional treatments.
    - Your body should be healed enough to tolerate stronger therapies you couldn't tolerate before.

### *Roadblock 2 - Not Treating The Gut*

Make sure the gut is in balance and operating properly. If not, you should treat this first. See the 4R Gut Rebuilding Program.

<http://forums.phoenixrising.me/index.php?threads/the-4r-gut-rebuilding-program-summary.25761/>

The reason is that if the gut is not working properly, you may not be able to absorb supplements. If you're getting no response from methylation treatment and have gut issues, try treating the gut.

You may not be able to get the gut totally fixed until you start methylation (this happened to me), but do the best you can with addressing this issue separately.

Bad gut bacteria, such as candida, hold onto toxic metals, such as lead and mercury. Killing off the bad gut bacteria will allow the release of those metals. Toxic metals have a negative impact on methylation, so working on the gut will indirectly improve methylation.

### *Roadblock 3 – Not Addressing First Priority Mutations – SHMT, ACAT, CBS*

SHMT and ACAT should be addressed at same time as the gut, as people with these SNPs have more gut issues and are more likely to respond better to gut treatment if these are addressed. Shawn Bean from MTHFRsupport.com calls these the “leaky gut genes”.

If you have the SHMT mutation, you need to take some folinic acid to make sure you're getting around the whole folate cycle and producing RNA and DNA bases.

CBS – just because you have CBS SNPs, doesn't automatically mean that they're expressed and that you need to do a CBS protocol. Having BHMT mutations increases the chance that CBS may be expressed. CBS A360A is the minor mutation, and people with only this mutation generally don't need to treat CBS.

Note that mercury can make CBS express. So if you have had mercury fillings or other mercury exposures, your CBS gene could be expressed.

Signs that CBS is expressed – you have trouble tolerating methyl supplements such as **methyl**folate, **methyl**cobalamin and TMG (tri **methyl** glycine). This may express as a stress/anxiety reaction (similar to having a stressful week at work with a lot of deadlines) i.e., feeling stressed or anxious, tight trapezius neck/shoulder muscles, a choking sensation in the throat, butterflies in the stomach, etc. One person reported an intense head pressure.

Other signs are high ammonia on an amino acids test and/or consistently high sulfate over several days or a week on urine sulfate test strips. Ammonia and sulfur are both detoxified through the transsulfuration pathway where CBS is located, and that's why both of these can be high.

So you desperately need methyl supplements, but you can't tolerate them. The treatment is to do a CBS protocol. The protocol reduces ammonia and sulfur, and supports the SUOX enzyme so it can detoxify better. This will balance the CBS

pathway and allow your body to produce glutathione, instead of an inflammatory response.

I have successfully used the CBS protocol on the Heartfixer page,

<http://www.heartfixer.com/AMRI-Nutrigenomics.htm>

except for I opted for the Free Thiol diet

<http://www.livingnetwork.co.za/chelationnetwork/food/high-sulfur-sulphur-food-list/>

instead of a low sulfur diet, because it was too difficult and restrictive, and I didn't use Yasko's RNA supplements.

The charcoal mentioned in the protocol is supposed to be done as a flush, i.e. once a week, not every day, as it can make you very constipated. Some magnesium can be added to help with constipation.

Note that MTHFRsupport.com is reporting that some doctors are prescribing huge amounts of molybdenum (500mcg!) and having patients do very restrictive low sulfur diets. Going too low on sulfur can cause serious adverse effects. Like everything else in the body, the CBS pathway needs to be balanced, not obliterated. 75mcg of molybdenum is a more reasonable dose.

I found it necessary to continue some CBS support after completing the CBS protocol – 25mcg of molybdenum, boron, and carnitine. After more time, I was able to stop boron and carnitine, but I still take 25mcg of molybdenum. This helps keep this pathway open. I can eat anything I want and don't need to restrict sulfur.

*Roadblock 4 – Incorrectly Addressing Second Priority Mutations – MTHFR, MTR, MTRR*

Taking too large of amounts of methylfolate and/or B12 relative to each other. Too much methylfolate relative to B12 and too much B12 relative to methylfolate will cause a methyl trapping situation and stop methylation. This is the opposite of what you want. In general, prescription methylfolate such as Deplin has way too much methylfolate and should not be prescribed as a starting dose. Deplin is 15 mg of methylfolate.

However, there have been a smaller amount of cases where a person tried lower amounts of methylfolate (under 1 mg) and either didn't get a response, or got folate deficiency symptoms. When they increased to higher amounts of folate (above 1 mg into Deplin type levels), their symptoms cleared and they began to get a positive response. This is what Freddd calls the Paradoxical Folate Deficiency problem.

Freddd describes the Paradoxical Folate Deficiency symptoms as follows:

*Old symptoms returning*

*Edema*

*Angular Cheilitis, Canker sores,*

*Skin rashes, increased acne, Skin peeling around fingernails, Skin cracking and peeling at fingertips,*

*Increased hypersensitive responses, Runny nose, Increased allergies, Increased Multiple Chemical Sensitivities, Increased asthma, rapidly increasing Generalized inflammation in body, Increased Inflammation pain in muscles, Increased Inflammation pain in joints, Achy muscles, Flu like symptoms*

*IBS – Steady diarrhea, IBS – Diarrhea alternating with normal, Stomach ache, Uneasy digestive tract,*

*Coated tongue, Depression, Less sociable, Impaired planning and logic, Brain fog, Low energy, Light headedness, Sluggishness, Increase irritability, Heart palpitations,*

***Longer term, very serious***

*Loss of reflexes, Fevers, Forgetfulness, Confusion, Difficulty walking, Behavioral disorders, Dementia, Reduced sense of taste, bleeding easily*

<http://forums.phoenixrising.me/index.php?threads/disheartened-about-feeling-so-unwell-at-15-weeks.13266/page-2>

As there is insufficient data to say which camp you will fall into, it's best to start low and work it out by trial and error, and/or self muscle testing.

Many methylation protocols also include folinic acid along with the methylfolate. This is to make sure the folate cycle completes itself to make DNA and RNA bases. Without these bases, you won't be making DNA and RNA, which is not good. However, some people may have trouble tolerating folinic acid, and this could also cause folate deficiency symptoms. Technically, the methylfolate should convert into folinic, so if this is your situation, and you have to avoid it, don't panic.

***Roadblock 5 – Lithium Deficiency***

If you have been supplementing with larger and larger amounts of B12 and/or folate and not seeing any results, it's possible you may have low lithium levels or lithium dumping. Lithium helps with B12 and folate transport in the cells.

In autistic children, Amy Yasko has noted low lithium levels related to symptoms such as bipolar, schizophrenia, aggression, anxiety and ADD. Supplementing with low-level lithium has been shown to help these problems.

Lithium has many other important functions in the body such as helping with dopamine processing, oxidative stress, DNA metabolism, lowering norepinephrine, GABA production, neurons, mitochondria and myelination. As you can see, this has many applications for ME/CFS patients.

Yasko suggests a very low dose, way below the toxic level used in prescriptions – 1.2mg of lithium orotate.

Those with SHMT, MTHFR C677T, and MTR can be most susceptible to lithium dumping. Those with COMT may also benefit from lithium as it helps to process dopamine better.

You can see if you're either low in lithium or have lithium dumping on a Doctor's Data Urine Essential Elements tests (UEE) or a hair mineral test.

Refer to Yasko's video "The Lithium Connection", about 35 minutes in, for info on how to interpret these tests: <http://vimeo.com/26165981>

### *Roadblock 6 - Not Starting Low and Going Slow*

Starting off with too large amounts of folate and B12. This will cause overmethylation, which can cause severe adverse effects, and should be avoided. See the Start Low and Go Slow document.

<http://forums.phoenixrising.me/index.php?threads/start-low-and-go-slow-how-to-be-safe-on-a-methylation-protocol.26711/>

### *Roadblock 7 - The Honeymoon Period*

Be aware that there can be a honeymoon period of up to 6-8 weeks before methylation gets cranking enough that you'll feel anything (either good or bad). This might trick people into increasing supplements too fast because they "can't feel anything", or cause them to give up because they don't feel like it's working. This is another reason to Start Low and Go Slow.

### *Roadblock 8 - Taking Ineffective or the Wrong Kinds of B12*

There are four forms of B12 – cyanocobalamin, hydroxycobalamin, methylcobalamin, and adenosylcobalamin. Cyanocobalamin is a poorly absorbed

synthetic and should be avoided. Large amounts of cyanocobalamin could cause cyanide poisoning. Rich Van Konynenburg reported one such case.

Dr. Amy Yasko has a nifty chart showing what kinds of B12 are the best considering your COMT/VDR SNPs. COMT and VDR affect your ability to degrade dopamine. If you get too much B12 too fast, it will affect dopamine, and cause mood swings. The chart is here, about halfway down the page:

<http://www.scribd.com/doc/132017201/Dr-Amy-s-Simplified-Road-Map-to-Health>

Note, that even if hydroxycobalamin is recommended for your type, a few people such as Freddd and myself don't tolerate it. The symptom I got from it was an icky, revved up, overstimulated feeling, and it wasn't effective like methylcobalamin.

In that case, if you have COMT mutations and are getting mood swings from methylcobalamin, try adding a low amount of a slow release non flushing type of niacin (about 30mg) to the methylcobalamin. Amounts in the 50-100mg range will slow methylation too much, so you want something under that amount.

B12 is very poorly absorbed in the stomach – only 1-2%. Therefore, to be effective, it must be taken either sublingually or by injection. Certain brands of sublingual tablets are more effective than others. Freddd prefers Enzymatic Therapy B12 Infusion for methylcobalamin and Anabol Naturals Dibencoplex 10mg, for adenosylcobalamin. I prefer using liquid sublingual drops because they're very easy to subdivide into 1mcg drops. I use Douglas Labs Methylcobalamin Liquid and Holistic Health Adenosyl B12 Mega Drops.

#### *Roadblock 9 - Adenosylcobalamin*

Adenosylcobalamin supports the mitochondria, which produce energy, something we all need more of. So be sure and add in some adenosylcobalamin.

However, adenosylcobalamin doesn't contain methyl groups and so is not a substitute for other types of B12. If you don't take hydroxycobalamin and/or methylcobalamin, you won't be able to increase methylation.

#### *Roadblock 10 - Overmethylation*

It's highly likely, even if you're being careful, you'll end up overdoing it, which will cause overmethylation. For this reason, I suggest not starting methylation until you have some niacin on hand.

If you get yourself into an overmethylation situation, stop all methyl supplements and let everything clear out. However, the methylation cycle can continue cranking

on it's own for quite some time (days, weeks, or months), so to get immediate relief, take 50-100mcg of a slow release nicotinic acid form of niacin. "Now" is a good brand. This will soak up methyl groups and stop the reaction.

Niacin typically comes in a 500mcg pill, so do not take the whole pill. Only take 1/10 to 1/5 of a pill (50 to 100mg). Depending on how much you're overmethylated, you may have to dose every four hours, or four times a day for several days or longer. Ben Lynch also mentions dosing every ½ to hour.

If you get a flushing reaction, it's harmless and will go away after awhile. If you're getting too much flushing, try cutting back on the dose size or frequency.

### *Roadblock 11 - Potassium and Magnesium Deficiency*

The adrenals are responsible for maintaining a proper electrolyte balance. If you have weak adrenals (very common for ME/CFS patients), it will cause electrolytes to leak out. In this case, it can be very helpful to supplement with electrolytes, such as magnesium, potassium and sodium. The best way I've found is to use salt and electrolyte powders dissolved in water and drink that several times a day.

Calcium is another possibility – I took this for a while in capsule form, then after some time I didn't need it any more. It doesn't seem to be as sensitive to leaking out rapidly as do the sodium, magnesium and potassium.

A lack of electrolytes will cause symptoms such as heart palpitations and muscle cramping or twitching. Balancing electrolytes as described above will help those symptoms and also help with symptoms of low blood volume.

Magnesium is also a co-factor for making SAME, which donates methyl groups to make DNA, RNA and 40 other reactions in the body, making it essential for methylation. Magnesium is also required to keep potassium in the cells. The worst form of magnesium is magnesium oxide, which doesn't absorb well. Magnesium citrate, taurate, or glycinate are the best choices.

I feel that it's best to have your electrolytes balanced prior to starting methylation, so you know what your baseline requirements are.

Then, as you start methylation supplements and the methylation cycle cranks up, within the first few days or weeks, you may suddenly require additional potassium for cell rebuilding. Interestingly, this is a similar situation to that experienced by pregnant women, who can become deficient in potassium as the fetus starts to grow.

Potassium deficiency can cause symptoms such as heart palpitations, an increased heart rate, pounding heartbeat, anxiety, nausea, itching, or waking up in the middle of the night, with a "panic attack" (fast pounding heartbeat, sweating, anxiety, ringing in the ears and/or twitching feet).



If you get symptoms like these, try adding potassium first. It should alleviate these symptoms within minutes.

This seems to be more of an issue for ME/CFS patients who have a lot of physical debilitation as opposed to those with autism or mental health issues.

A good potassium brand is NOW potassium gluconate powder, dissolved in water, and drunk several times a day. You can simply add this to any electrolyte drink you may already be taking.

Freddd has suggested that it's the B Complex vitamins such as B1, B2, B3 or biotin, and not the folate which causes the high need for potassium, and to keep supplementation on those very low.

### *Roadblock 12 – Overdoing B6*

You also need to keep B6 supplementation very low if you have CBS issues. It's best to stick with the P5P (already converted) form of B6. Low is below 20mg.

### *Roadblock 13 - Heavy Metal Detox*

If you look at some methylation cycle diagrams, they show both mercury and lead inhibiting MTR/MTRR (B12), which slows down methylation.

<http://www.scribd.com/doc/91534330/Yasko-Methylation-Cycle>

Basically B12 and mercury/lead are two sides of the same coin. You can add the one or take away the others (or do both strategies) and get improvement.

Another metal, aluminum, inhibits the BH4 cycle, which affects mental health. You can add BH4 or remove aluminum (or both) and get improvement.

There are two schools of thought on this – the Yasko school says that you can detox metals via eliminating guts bugs and methylation. The Cutler school says that you need to chelate with ALA, DMSA and/or DMPS.

The truth is probably a little somewhere in between – or at least it would be a good idea to work on the gut and get some methylation going prior to attempting chelation.

I no longer suggest getting a urine metal test with provocation and instead suggest following the Andrew Cutler protocol if you suspect you have mercury, lead or other metals.

Note that these metals are rampant in our bodies and environment due to mercury amalgam fillings, thimerosal in vaccines, mercury from industry and coal fired power plants, mercury in fish, etc. Even if you yourself don't have any exposures, you have received 60% of your mother's body burden when you were in the womb. So if your mother had exposures, you do too. Basically, if you are sick enough to be reading this, I suggest testing for toxic metals to at least to rule them out as a possibility.

A hair test with metals and minerals can be interpreted via Cutler's method to show if you have mercury or other toxic metal issues, and therefore should do chelation, but will not necessarily be accurate as to the amounts of those.

More info on Cutler's protocol is available here:

<http://www.livingnetwork.co.za/chelationnetwork/chelation-the-andy-cutler-protocol/>

This is the correct hair test to get for the Cutler protocol (ironically, the cheapest from Yasko):

<http://www.holisticheal.com/hair-elements-test-kit.html>

When you receive it, ignore Yasko's and Doctors Data's comments and instead submit it to the Frequent Dose Chelation Yahoo Group for interpretation.

Instructions for submitting are at the first link, and the Group is at the second link:

<http://www.livingnetwork.co.za/chelationnetwork/hairtest/>

<https://groups.yahoo.com/neo/groups/frequent-dose-chelation/info>

#### *Roadblock 14 - Taking Too Much ALA*

Alpha Lipoic Acid plays an important role in energy production. However, it will also cause metal detox. According to Andrew Cutler, if not taken properly, the mercury could cross the blood brain barrier and be sent to your brain. Yasko suggests only taking tiny sprinkles if mercury is an issue for you (which seems to be most of us). See the Cutler Protocol for more info on how to dose ALA for detox. I suggest not doing this until you've gotten out all the metals you can via killing off your bad gut bugs and via methylation. Restoring methylation will allow you to handle metal detox a lot better.

#### *Roadblock 15 - Lack of Co-factors*

There are many co-factors required for methylation. If you're missing one or more of them, it will be a roadblock to methylation. B Complex vitamins (B1, B2, B3, etc.) are one example.

The best way I've found to pick up on what co-factors you need is to do the Nutreval test and then interpret it with Rich Van Konynenburg's interpretations (The Nutreval Interpretation Guide).

<http://forums.phoenixrising.me/index.php?threads/nutreval-interpretation-guide.21468/>

My test showed I needed all the B vitamins, various Krebs cycle/mitochondrial supports, and several minerals.

Again, you will want to keep the B Complex supplements on the low side, like 20mg or less.

I take a multi vitamin to get a smattering of co-factors, then add in additional ones where necessary. Two multivitamins which have worked well for me are Thorne Multi IV (has iron – Thorne Multi V doesn't) and the Holistic Health All In One. They both contain methylcobalamin, so you may not need additional methylcobalamin.

The Holistic Health multi was designed by Amy Yasko to be tolerated by all SNP types. When combined with a sublingual B12, it's very powerful. Note that it does contain a bit of "folic acid", which is technically a no-no for people with MTHFR mutations, so I'm not sure why Yasko has included it. I decided for my situation, that due to the tiny amount I was taking, it was not significant enough to be a problem. It also contains "folinic acid" and some people don't tolerate that.

Ben Lynch via SeekingHealth.com also has several versions of the Optimal Multivitamin, which contains methylfolate and methylcobalamin/adenosylcobalmin. There is a kid's version that might be great for starting low and slow.

He has another one called Optimal Start, which doesn't contain methylfolate or B12 (great idea), but it does contain adaptogenic herbs i.e. adrenal support (not so great). I tried this and the herbs were over stimulating and I had to discontinue. So don't take this if you don't have adrenal issues or don't tolerate traditional adrenal supplements.

If you don't tolerate multivitamins, another option is to make your own custom mix:

- methylfolate

- sublingual methylcobalamin/adenosylcobalmin/hydroxycobalamin

- Seeking Health B Minus - B vitamins except methylfolate and B12

- Thorne Pic-Mins - multimineral

- separate supplementation of vitamins and antioxidants such as C, E, A, and D.

### *Roadblock 16 - Not Supporting SOD2*

If you have this mutation (shown on the Geneticgenie Detox Profile), you will have increased oxidative stress, which can affect the mitochondria, and thus energy. There are various supplements containing GliSODin, which support SOD2. However,

it does contain gluten, so if you're gluten sensitive, you may want to opt for Biotec Extra Energy Enzymes. Resveratrol is also another option, but it's supposed to be less effective. One person reported significant improvement (from bedridden to 50% or so) from taking Biotec Extra Energy Enzymes.

MTHFRsupport.com reports that taking mitochondrial supplements would support SOD2. Mito supplements are CoQ10, carnitine, ribose, vitamin E succinate (Dry E), NAD, magnesium and B12. You can tell where the blocks are in your Krebs cycle and thus which mito supplements you need by testing with the Nutreval test.

I tried both methods, and supporting the mitos directly worked best for me.

Ben Lynch also lists SOD2 as a reason for not tolerating methylfolate and has his own supplement for this made from melon extract, which is different from the others listed above – see Roadblock 21 – Ben Lynch's Methylfolate Side Effects

### *Roadblock 17 - Not Separately Addressing Stressors*

Many people think that methylation treatment means adding things. It may also mean subtracting things. In addition to addressing methylation directly, you may also have to separately address the original stressors that caused your ME/CFS as well as the ongoing ones that have cropped up due to poor methylation. The reason is because these stressors will lower glutathione or slow down methylation. So treating these stressors will also help methylation.

Examples are the gut, Lyme, viruses, mercury and other toxic metals, ongoing exposure to mold, chemicals, toxins, etc.

If you've tried treating these stressors before without success, you may be surprised to find that adding methylation treatment will help. For example, I had candida for many years and was on various anti-fungal herbs for years. About once a year, the herb would become ineffective and flu-like symptoms would return. I would have to switch to a new herb to get relief. A few months after starting methylation, I got a stool test. To my surprise, the candida was gone. I discontinued the herb, and the symptoms have not returned.

MTHFRsupport.com has mentioned that treating CBS in conjunction with Lyme should make Lyme treatment more successful.

The Frequent Dose Chelation Yahoo Group (Cutler Protocol) has reported that people who are unsuccessful with Lyme treatment should check for mercury and remove that first. Then they are more likely to be successful.

Ben Lynch has recently reported that SAME and betaine will kill viruses such as Hepatitis C.

Like I mentioned above, treating SHMT and ACAT should help with treating leaky gut.

Also killing bad gut bugs and restarting methylation will both cause toxic metals to come out.

Some prescription drugs negatively affect the mitochondria or effect energy. These should be reduced or discontinued if possible. Of course, work with your doctor if you want to try this.

Examples of mito killers are Prozac and beta-blockers. Tylenol is notorious for using up large amounts of glutathione. Oral birth control depletes folate. Beta-blockers and clonazepam deplete melatonin, which will cause insomnia. Ironically, clonazepam is often prescribed for sleep. Poor sleep will also impact energy levels.

See the Start Low and Go Slow document for more info on how to taper safely from psych meds.

<http://forums.phoenixrising.me/index.php?threads/start-low-and-go-slow-how-to-be-safe-on-a-methylation-protocol.26711/>

See Roadblock 13 for more info on how to address toxic heavy metals.

### *Roadblock 18 - Not Using Self Muscling Testing*

I've found this technique incredibly useful for determining which supplements are good to take, which amounts are appropriate, and also when to stop medicines or supplements as your body heals. I really can't imagine doing methylation treatment without it, as it greatly cuts down on the time spent on trial and error and adverse reactions.

My favorite tutorial is this one by Mystic Mandy. Don't worry about the New Age sound of it; if you know anything about physics, there is a scientific basis.

<http://www.youtube.com/watch?v=Ex59wHLk3Q0>

I would also like to add a caution that you still have to use common sense. You can't turn your brain off and totally rely on muscle testing, because you may sometimes get wrong results. Two areas where I've had trouble were testing electrolytes (because muscle testing relies on having good hydration and electrolyte levels), and B12 levels, due to the lag time it takes methylation to get cranking. Now that I have good levels established, if changes are needed, the muscle testing has been more accurate.

### *Roadblock 19 – Rich Vank's Simplified Methylation Protocol*

Rich did his last update in August, 2012. Unfortunately, he passed away shortly after that, and is no longer here to keep his protocol updated.

The General Neurological Health Formula mentioned in his protocol has been discontinued. Amy Yasko has developed a new multivitamin called the All In One. I have run into several people on the Phoenix Rising Forum who have attempted to substitute one for the other. However, if you actually compare the ingredients, these two vitamins are two different animals, and you can't make a direct substitute. In general, 2 tablets of NHF = 1 tablet of the All In One.

To sum up, my version of Rich's SMP, updated, would be as follows:

**1. All-in-One Multivitamin / Mineral** - (1 to 4 capsules per day) -  
<http://www.holisticheal.com/all-in-one-multi-vitamin-mineral-120-capsules.html>

2. Taken with your favorite active sublingual B12 (for this protocol that would be hydroxycobalamin).

- 1 All in One (25mcg folate) + 125mcg hydroxy
- 2 All In Ones (50mcg folate) + 250mcg hydroxy
- 3 All in Ones (75mcg folate) + 375mcg hydroxy
- 4 All in Ones (100mcg folate) + 500mcg hydroxy

Then if you want to increase further, add #3, #4, and #5 along with additional B12:

3. 150mcg folinic (I realize this is not a simple amount to divide, if you're not sensitive use 200mcg instead)

4. 150mcg methylfolate (I realize this is not a simple amount to divide, if you're not sensitive use 200mcg instead)

Then also increase the hydroxy more or less commensurately in a 5:1 ratio (5 times more hydroxy than folate). The final amount of hydroxy would be 2000mcg.

5. 1200mg of sunflower lecithin (if you're on a budget) or **NT Factor EnergyLipids Powder** (1/8 to 1/4 teaspoon, once or twice a day) -  
<http://www.pureformulas.com/nt-factors-energy-lipid-powder-150-grams-by-nutricology.html#>.

6. Add potassium if you are experiencing low potassium symptoms at any time. Order potassium to have it on hand before you start. NOW Potassium gluconate  
<http://www.iherb.com/now-foods-potassium-gluconate-100-pure-powder-1-lb-454-g/13939>

### *Roadblock 20 - MAO A +/- and B2*

Sherpa (from the Phoenix Rising forum) has reported that people with MAO A +/- mutations who are overstimulated from methylfolate get relief by adding B2. This seems to be a very commonly reported roadblock.

He has been successful with small doses of B2 - at least 5mg per dose - 3 times per day for several weeks.

Some people report good effects from taking sublingual FMN (B2 active form).

It is unclear if this also applies to MAO A +/- . Note that all males with MAO A are +/+.

There is more info on Sherpa's thread here:

<http://forums.phoenixrising.me/index.php?threads/sustained-release-methylation-protocol-srmp.36344/>

### *Roadblock 21 - Ben Lynch's Methylfolate Side Effects*

Ben Lynch has two great articles with a symptom list of methylfolate side effects and several things to try if you have this. Some of it overlaps with the Roadblocks mentioned in this document, but some of it is new information. Well worth checking out:

<http://mthfr.net/methylfolate-side-effects/2012/03/01/>

<http://mthfr.net/preventing-methylfolate-side-effects/2014/11/26/>

In particular, if you're getting "crashing" or what feels like metal detox, i.e. flu like aches and extra fatigued, when you try to raise methylfolate, try working through Dr. Ben's list.

### *Roadblock 22 - Not Seeing A Doctor Versed in Methylation*

Due to financial issues, or accessibility to good doctors, patients may try to address methylation themselves without help from a professional. As you can see, the treatment is complex, with many roadblocks, and ME/CFS cognitive problems don't help.

While it's up to the patient what path to choose, be aware that as time goes on, there are more and more doctors learning about methylation. Ben Lynch has recently trained 240 new doctors, with more on the way.

So for this reason, I'm starting to encourage patients to find a practitioner instead of trying to go it alone. See the section called Find a Practitioner at this link - <http://forums.phoenixrising.me/index.php?entries/caledonias-methylation-links.1744/> to find a methylation doctor. Several of them will work via phone or Skype, even internationally.