



**Wellness Mama Podcast Episode 29**  
**Methylation Problems & Gene Mutations**  
**Interview with Dr. Ben Lynch**

**Show Notes:**

<http://wellnessmama.com/podcast/methylation-problems-gene-mutations/>

Dr. Ben Lynch is a naturopathic doctor and world expert on [MTHFR genes and methylation problems](#). In this episode, we talk about the many ways that methylation problems can affect health, especially for women.

**What is MTHFR?**

The methylenetetrahydrofolate reductase (MTHFR) gene produces the MTHFR enzyme, which is responsible for breaking down (methylating) folate in the body.

Up to 50% of Americans have an MTHFR gene defect of some type that impairs their ability to methylate properly. These defects can cause problems with everything from nutrient absorption to gene expression.

The methylation of folate is also important for healthy homocysteine levels and hormone levels because one of the byproducts of methylation is used to break the amino acid homocysteine down to another essential amino acid, methionine. The body

uses methionine to make proteins, utilize antioxidants, and to assist your liver in processing fats.

Methionine into SAM-e (s-adenosylmethionine) in the liver. SAM-e is important for reducing inflammation, neurotransmitter production, and cell repair.

In short, a methylation problem can lead to a build up of heavy metals and synthetic vitamins in the body. It can also prevent proper neurotransmitter production and lead to problems with mental health, cellular health, autoimmune disease, infertility, miscarriages and even cancer.

## **Resources Mentioned**

- [MTHFR.net](http://MTHFR.net)
- [SeekingHealth.com](http://SeekingHealth.com) (my source for many supplements)
- [SeeingHealth.org](http://SeeingHealth.org)
- [Video and gift from Dr. Ben on MTHFR](#)
- Article: [MTHFRs and Toxicity](#)
- Article: [Benefits of Sauna and how to sauna safely with MTHFR](#)
- Article: [Optimizing Your Future Child-Prenatal Supplements](#)
- Article: [Nitrous Oxide and MTHFR](#)
- Book: [Drug Muggers by Suzy Cohen](#)
- Educational Course: [MTHFR and pregnancy](#)
- Educational Course: [Cancer Course](#)
- Educational Course: [Kids Course](#)
- Educational Course: [Nitrous Oxide Course](#)

## **Supplements Dr. Ben Suggests**

- [Optimal Prenatal Protein Powder](#)
- [Active B12 with L-5-MTHF Lozenge](#)

- [Histamine Block](#) – for food derived histamine issues
- [Optimal Liposomal Vitamin C](#)
- [Optimal Liposomal Glutathione](#) – key – start LOW – drop doses
- [Optimal Start](#) – if sensitive to methyl donors
- [Optimal Electrolyte](#) – amazing for athletes – kids – getting them off of garbage Gatorade, etc – and tastes excellent.

**Thanks as always for listening to the Wellness Mama Podcast. If you're enjoying these interviews, please subscribe via [iTunes](#) or [Stitcher](#) and leave a (5 Star!) rating and review if you haven't already!**

**Katie:** Hi, and welcome to the Wellness Mama podcast. I'm Katie from wellnessmama.com.

Today's interesting fact. Did you know that dogs and cats are not the only mammals that shed? The human body is constantly shedding dead skin to the tune of 600,000 particles every single year, or about 1.5 pounds of discarded skin flakes. By age 70, this will have led up to approximately 105 pounds of dead skin cells.

Today's guest, Dr. Ben Lynch, is a cell and molecular biologist and a functional medicine doctor who specializes in MTHFR gene mutations. He's also a father and a husband. He has three boys. He's lived everywhere from Calcutta to Australia to Somo Somo and travelled everywhere in between. He founded mthfr.net and seekinghealth.com and spends his time speaking, presenting, and writing about methylation related health problems.

Dr. Ben, welcome, and thank you for being here.

**Dr. Ben:** Thank you, Katie. It's a pleasure.

**Katie:** Awesome. I'm excited to have you on to delve into what I believe is becoming a widespread problem but that I don't feel like there's very much awareness about. I've written on it a little bit, but I'm by no means an expert and you are. So, I'm excited to have you here to delve in. This issue is methylation and MTHFR gene defects.

From my understanding, which I'll admit is very limited since I don't have the scientific background that you do, there's a gene in your body that's responsible for methylation, which is the process of creating or breaking down certain nutrients so that they're usable for the body. This obviously would impact everything from your immune system to your mental health, and especially your detoxification reactions in your body, the body's natural process that this happens. If someone has an impaired ability to methylate, this can lead to all sorts of deficiencies and/or actual problems.

You're an expert on this, and I'm excited to have you here to explain it more in depth. Can you tell us what is MTHFR and MTHFR gene defects and how can they impact the body?

**Dr. Ben:** Yeah, great question. Thank you for all you do increasing the awareness. I really appreciate that.

MTHFR is basically just an abbreviation for a key enzyme in the body that helps do exactly what you were saying earlier. It supports methylation. We know folic acid. Folic acid is everywhere. It's in enriched foods. It's in many of your supplements.

What you don't know is your body has to take that folic acid, and it has to completely change it to how the body will use it. Just because you supplement with folic acid doesn't mean your body's going to use it. There are all these genes that will take that folic acid, and it will change it into the body's most active form which is called methylfolate. That is methylated folate. You were just saying how methylation is important. Well, there's

one right there. You were saying methylation is needed to make nutrients for your body. That's absolutely right. Methylfolate is one of them. It's methylated folate.

When you have an MTHFR problem, this gene defect which is pervasive . . . It's actually 50% of Americans have this issue. It varies in degrees. When I say 50% have it, it's to some degree. Some might have a more serious one, and some may have a less serious one. What happens is this enzyme . . . Genes make enzymes. The MTHFR is an actual gene in the human body. Genes do things. The function of the MTHFR gene is to make the enzyme, and the enzymes are the things that actually do the work. They're the ones running around with the pick axes and the shovels.

We'll simplify things. It's attaching itself to the folic acid and it's changing it into the body's most usable form of folic acid which is methylfolate. That is completely abbreviated, and it's not technically correct, but it's correct enough for what you guys and gals need to know.

Your body will take that methylated folate that's produced by the MTHFR enzyme, and it will do things like Katie was saying about making your neurotransmitters, how you think, how you feel. It will support your immune system. It will help you sleep at night. It will get the chemicals out of your body. It will turn your genes on and off, because you don't want genes on and off all the time. That can lead to cancer if they're turning on all the time.

What the MTHFR gene problem does is it slows the methylation process down. It's a very key step for methylation regulation. If you have MTHFR and you're not eating . . . Well, we'll get into more detail, so I'll just keep it that simple, Katie, and you can lead to the next question.

**Katie:** Okay. That's so fascinating. When I started reading about this, I was blown away. Like you said, 50% of the population has this to some degree. Has that been throughout history, or are we seeing an increase in this recently? Or is testing just better?

**Dr. Ben:** Great question. I think it's all three. I think there's increased awareness, so there's more testing. But there are plenty of papers out there, and it makes sense saying that this genetic defect is increasing in the population. I believe it's increasing in the population. When you look at the autistic children being born and Down's syndrome and chemical sensitivity and susceptibility to chemicals, it makes sense that our bodies are not working very well. I think it's partially because of this defect is increasing in the population.

It has been around in history. There's a good reason to have MTHFR gene mutations in certain populations. I don't want to get into that. That was back in the day when people didn't have access to folate or other things. There are reasons why the MTHFR defect was selected for in history.

But now we're forcing. It's not even selection. I call it unnatural deselection. Because what's happening is we have a lot of in vitro fertilization now. We have forced pregnancies with hormones and steroids or massive amounts of nutrition. These things are great because we want to have our children, and we want to have a healthy pregnancy and the end result of having a beautiful baby and a child of our own. But we're forgetting that this child is potentially susceptible to more toxins in the environment or increased stresses because they can't think or get rid of chemicals in their brain fast enough like other people without this defect. It's definitely increasing in the population, and it's one that we need to be aware of as parents.

**Katie:** I'm so glad you brought up the pregnancy aspect because a large portion of my readers and listeners are either pregnant or have been or plan to be. I think that's an important thing, especially when you mentioned how it can affect genes turning on and off and also nutrient absorption. Those are both obviously huge factors when a woman's pregnant.

I know when I was pregnant and most women when they're pregnant are told to take folic acid. That's a big thing from your doctor. Make sure you get enough folic acid. Are there women who should take folic acid itself, or are there better forms? I know it's also added to every enriched food. I found out for myself that it wasn't helping me at all. In fact, it was harming me. Can you talk about is there a role for folic acid or is there a better way?

**Dr. Ben:** Fantastic question. Just to let you know if you don't know already, my passion is actually to optimize the lives of unborn children. The reason I wake up in the morning is to think of how I can optimize a pregnancy for a future mother and father so that child can be the best it can be throughout its entire life. Because as a physician, what's our job? Doctor stands for 'docere,' it comes from 'docere,' and 'docere' means to educate. A doctor's primary role actually is to educate. That's what we do. If we can educate people, especially those trying to get pregnant and have a healthy baby, then that I believe is where we need to start as physicians. Treating illness is one thing, but optimizing a future life is another, at least for me.

I believe that folic acid is completely the wrong thing to do. The history of why folic acid was even created is because we stripped the nutrients from flour so it can be more shelf stable. It came during the industrial era. That's when the need came about because bread was expiring on the shelves and had to be thrown out. They discovered that if they strip all the nutrients out of the bread and the bran and so on, that it could sit there on the shelf for a lot longer.

Then, they started noticing all these neural tube defects coming in the population and birth defects. Like what the heck, what's going on? They realized they stripped all the nutrients out of the dang flour, the food that we're eating. So instead of saying "Let's make fresh bread every day," they put a synthetic folic acid into the bread. That synthetic folic acid is not recognized by the body very well. It's absorbed and carried around, but it doesn't do any biochemical function without the body transforming it. That's why you didn't feel anything from it. That's also why it was causing potential harm for you.

I believe that all women and men and children, everyone in the United States, should not use folic acid. That is a huge statement. I know many of you are like "Who in the heck? Where'd this guy come from?"

Believe me. I've studied the science in and out. It doesn't make any sense. It's actually very detrimental. There are articles that I've written that go into detail on this. There are other forms available. Folic acid was the only thing that was available at the time. And it was created because it was very stable, and it didn't break down, and so they put it in the foods. You can cook with it and it didn't get destroyed. Nowadays, there are better forms. Do you take a horse and buggy from California to New York to get there, or are you going to take an airplane? We evolve in what we use.

Let's get rid of the folic acid which was made a long time ago to serve a purpose. That purpose is gone. The purpose still exists. It's needed because our foods are still poor and stripped out. But we need to use the more appropriate nutrients. Those two nutrients are folinic acid, F-O-L-I-N-I-C. And Katie's going to put some links up for you guys so you can get these words and spellings correct. Folinic acid is one form, and that is actually made by and used by the body.

Then there's another form. I'm going to simplify the name. It's called methylfolate. Methylfolate is what helps support your methylation. That's what the MTHFR enzyme makes. If you have that MTHFR defect and you're consuming that synthetic folic acid and you have the MTHFR defect, that folic acid is doing very, very little. If you're pregnant or working on getting pregnant, then you need to be not taking folic acid and getting folinic acid and methylfolate.

**Katie:** Yeah. I love that you bring that up so well on your site. I'll make sure to link to the articles you have about folic acid and the better forms as well as to the actual supplements that I take that have helped me so much. I love that you're so focused on helping unborn children. As a mom, I truly believe that's a very special time when you're able to give them a huge advantage if you are taking care of your body correctly and living a healthy lifestyle. There are things that pregnant moms can do and should do to help their unborn babies.

Since you mentioned that this methylation is involved with fertility as well, especially with childbirth, can you talk about that? If someone has a methylation defect and maybe doesn't know it or isn't working with it correctly, can this cause fertility problems as well?

**Dr. Ben:** Absolutely, absolutely. In fact, one of the top studied genes for infertility is actually MTHFR. If you dig through the online research that's indexed that's provided by pubmed.gov, that's where a lot of research articles are available. Even the public can go there and read. That's where I get a lot of my information. I lost my train of thought. Would you repeat your question? Sorry.

**Katie:** Yeah, about infertility. If someone has a defect and doesn't realize it, can that lead to infertility?

**Dr. Ben:** Right, right. Yes. If your methylation is not working very well and you have an MTHFR defect, that combination is not good. Let's talk about why that is.

The MTHFR enzyme, what it does is it makes the body's most active form of folate, which is methylated folate, which then supports methylation. If you have an MTHFR defect, that conversion of that we'll say folate to methyl folate is slowed down. If you have a less severe form, you have a 20% reduction in your body's ability to convert folate to methylfolate. If you have another form, you have a 40% reduction in being able to convert folate to methylfolate. If you have the form like I do, then you have a 75% reduction in the ability to convert folate to methylfolate. That means my ability to support methylation through the folate pathway is only 25% effective if I'm not eating leafy greens. And we'll get into that later. It's only 25% effective. That means I can't really make cell membranes very well. I can't make . . . Sorry. I can't make neurotransmitters. I can't get rid of chemicals in the body, especially arsenic. Arsenic is very pervasive in our food and our water. That is an issue.

If you have increased levels of arsenic, then that causes a lot of problems. One of those problems is infertility. When you look at methylation and you take another step back and you evaluate if you have MTHFR gene defect, and then you look at the conditions that you have, and one of them may be infertility, and you trace it all back and you say, "Okay, what came first? The metal for the car or the finished car itself?"

We'll say that finished car is fertility. You have all these parts. MTHFR is a part. Methylation is a part. All the other steps between is another part. It's a very complicated system, and there are many things that occur for fertility to happen. Yes, this is one of those things that needs to be evaluated for infertility.

**Katie:** That makes perfect sense. My husband and I are in the process of working on getting all of our children tested for MTHFR defects as well just so we know what we can be doing if any of them have inherited it from me that we can be doing for them. How

might a defect like this affect a child? What might be some things parents might notice that maybe would be a clue that it would be good to talk to a doctor about this?

**Dr. Ben:** Well, a clue would be family history or personal history. Given that MTHFR is so prevalent, the likelihood of you having it is 1 in 2. That's pretty high. What you would look for is cardiovascular disease present in my family, either mother, father, or both. That means heart attacks, blood clots. Those would be two. High blood pressure or high homocysteine. Is dementia or Alzheimer's prevalent? Is chronic fatigue or generalized fatigue present? Is bipolar, schizophrenia, or any other type of mental dysfunction present in our family, depression, increased anxiety all the time, inability to sleep, insomnia? All these things.

You're thinking, "Why is all this connected?" It's because methylation does so many things, and MTHFR supports methylation. If you look at family history and you see consistent disease patterns throughout your family, get tested, especially if you have a chronic disease. That is another issue. If you're living with Lyme disease or have autism in the family or on the spectrum, then that is another reason to go get tested and evaluate.

To get tested, there are different ways. I'll go ahead, and let you lead into that question.

**Katie:** Okay. Yeah, I was going to say I know I was tested through my doctor. Are there ways people can get that test done and find out if they have a defect? I know that there are ones I've heard of, things like 23andMe that offer genetic testing, but they don't interpret it. You're given a bunch of raw data, but you won't necessarily, unless you know how to interpret that, know what to do with it.

What do you recommend for the best testing options to find out? Like you said, even if you suspect that you have a gene defect, it's important to know which one because you

would do things differently potentially depending on what your level of methylation was. Is that right?

**Dr. Ben:** Yeah, potentially. Let me back up and say this, too. A lot of people might be scared right now, and thinking "Oh my God. I might have this defect." Well, I personally have this defect. I'm 41. I'm healthy. I'm fit. I'm active. I've got three healthy babies, or boys. They're not babies anymore. I kind of wish they were, but they're growing up fast. Just because you have an MTHFR gene defect doesn't mean that you're sentenced to a life of misery and discomfort. Quite the contrary.

If you do a genetic test and you identify that you have this defect, this MTHFR issue, that actually is very empowering. It was very "Aha!" for me when I found it. I sprayed Roundup all over our family's ranch when I was a kid. I put my hands in bags of chemical fertilizers. We had crop dusters flying over our ranch when I grew up and spraying the field next door to us. I was exposed to all sorts of chemicals. I never felt right as a kid. You know some kids who can run and eat like crap and be fine and still excel in school. I mean I excelled in school, but I never felt quite good. When I learned about this MTHFR, I personally tested myself and my entire family. I discovered I had this defect. It changed everything for me in a really good way. It's very empowering, but there's a lot of fear involved with genetic testing.

What I recommend is people testing for just MTHFR in the beginning. MTHFR is one of twenty-some thousand genes in the body. It's not like it's the only one that you need to test for. But it's a good one to start with because it's so essential to our biochemistry and so essential to how we think, feel, get rid of bugs in our body that are making us sick, supporting our immune system, supporting our detoxification system. It's so essential to what we do to stay healthy and live a vibrant life.

Starting with that genetic test for just MTHFR is really important. Because one, it gives you a place to start. It's not overwhelming. It's not fear driven, and it's more empowering. It's not like going out and testing yourself for that breast cancer gene BRCA1 or 2. That is a whole other ball of wax which I have a big issue with.

What you can do is you go to your doctor and you say, "I've recently learned about MTHFR." If their eyes roll and they're like, "Oh God, here's another one," then that doctor may be not the one to go to at least for this specific issue. If you love that doctor for what they do for you in general, excellent, keep with them. But if they're rolling their eyes and they have no clue, and they don't want to learn about MTHFR, then you need to find another doctor.

Having more than one doctor is totally fine. Team care is actually better than having one doctor. Medicine is difficult. Having more than one doctor to support you is fantastic. Try to find a good doctor. Katie will put a list of where you can find some good docs later as well.

The key with ordering an MTHFR test is to first understand if your insurance is going to pay for it. Because if your insurance doesn't compensate you, then that can be a very, very expensive test. I mean it could be a thousand dollars, which is absolutely ridiculous. If your insurance covers it, it can be completely paid for. You need to find that out first. I don't want you to get stiffed with a big bill.

If you don't have insurance or you're not sure if it's going to cover, then you can get a test through a lab through your doctor, but your doctor needs to open an account with SpectraCell. SpectraCell Labs offers genetic testing. They're very good with insurance companies. They test just MTHFR. There is also Molecular Testing Labs, and Molecular Testing Labs has a cheek swab test. That's great for kids or those who are scared of needles. You take a little Q-tip basically, you swab your cheek. You stick it in a vial, and

off it goes. SpectraCell has a blood test. Are they both accurate? Yes, they're both very, very accurate.

You brought up 23andMe. 23andMe is a very useful test for a doctor who knows what they're doing, but this is pioneering. We're in a pioneering time with how we're using the genetics. Most doctors are doing it absolutely wrong. I was doing it wrong myself in the beginning. I do not recommend 23andMe right now because I'm so nervous that people are getting the wrong information. It's causing more fear, causing more problems. So I just recommend testing MTHFR at this point.

**Katie:** That's great advice, and I'll make sure to include links as well to the two tests that you mentioned. I love that you nail home that point that even if you find out that you have a defect, you are not your defect. As we're learning more about genes, we're also learning about epigenetics and that we can change how these are expressed. Even the breast cancer gene, that's not a guarantee that you're going to get breast cancer. There are things you can do. That was such an excellent point that you made.

Another area I'm curious about from a personal perspective is about B12 and methylation. I recently found out that I was low in B12. I had felt really good from supplementing with a methylated form of B12 in the form of B12 shots. Can this be related to the methylation defect that I have? What can help with this if someone has a B12 deficiency?

**Dr. Ben:** Oh, great question. Not many people connect those two. So kudos to you, Katie, for identifying that.

There's a tag team. You can't have a kid without the opposite sex partner. A biological child, you've got to have a woman and a man to conceive a child. You need to have methylated folate and you need to have methylated B12 for methylation to work. If you

have one or the other, methylation does not work, at least in the main pathway. There are other pathways of methylation, but Katie and I are talking about the primary one here. You need B12 and methylated folate for that to happen.

Let's say you don't have any MTHFR defect. You get the lab test back. You're fine. You don't have the presence of that gene defect. Not a problem. Your methylation could still be completely hosed. It can be hosed for a variety of reasons, but one of those reasons could be that you're low in B12. If you're low in B12, methylation does not work. If you take your two hands and say your left hand is methylfolate and your right hand is methylcobalamin, and then you take your two thumbs and you connect them together, that is your methylated folate and your methylcobalamin touching. Your two thumbs are methylated folate and methylcobalamin.

Now if you push your thumbs down so your index fingers touch, that we'll say is methylation turning on. If you do that at home and you take your two thumbs, your left methylfolate, your right methylcobalamin, you touch those two, you have both in your body, they're both circulating around. You push your thumbs down towards the table and your index fingers touch, your methylation's on.

If you're deficient in B12, that is not going to happen. Your right thumb can't connect to your left thumb. You need to be having adequate forms of B12 in your system. B12 deficiency is extremely common. The testing for it is very bad. There are some good books out there. I think "Could it Be B12?" is a very good book. Again, "Could it Be B12?" I think is a great book for a lot of people to read. There are different forms of B12 out there. Those who are susceptible to B12 deficiency are those with defects in that area too. Don't concern yourself with that.

Those who are susceptible are those who are taking antacids. A lot of people are taking antacids. They're getting acid reflux for various reasons. They take an antacid. Then

your B12 levels really drop. If you're a vegan or vegetarian, your B12 levels drop. In fact, they drop very quickly if you're not supplementing. Those are the two main ones.

There's also metformin. Diabetics are at risk because metformin has issues with B12. There's another good book by Suzy Cohen called "Drug Muggers." "Drug Muggers" is a really good book which gets into details on which drugs deplete you of various nutrients. You can look up folate and B12.

Yes, in short, if you're low in B12, it's a big problem. Your methylation is not going to be working.

**Katie:** Great recommendations on the books. I'll make sure to put those in as well. I'm very much obviously food first. That's my background, in nutrition. I feel like as we learn more about genetic defects and more ability to test our genes, we're probably going to learn more specialized ways that we can support our bodies. For now one thing that we can always do is have a very nutrient dense diet that's especially supportive if we know we have an issue like this. I always say you can't out-supplement or out-exercise a poor diet. If someone has a gene defect that affects methylation, what would be some dietary factors they could optimize? What would be a good diet for someone like this?

**Dr. Ben:** Yeah, you're preaching to the choir here. Food is first. "Let food be thy medicine," a pretty famous quote.

**Katie:** Yes.

**Dr. Ben:** This is the mainstay. You're absolutely right. You cannot out-exercise or out-supplement a poor diet. It's impossible. I can not tell you how many times I've worked with patients and the only thing I've done was fix their diet. That's it. I gave them no supplements, no meds, no other lifestyle changes, no other recommendations. I

just told them what to eat and what not to eat. It's just healthy food, unprocessed healthy food. They felt immensely better.

In order to get the types of folate that our body really wants and uses, processed foods, no. Scratch off the list. That's not saying you can't ever eat processed foods, but you can't eat them for your mainstay. I mean I eat chips sometimes. Who doesn't love chips?

Kettle chips, they're pretty good. It doesn't mean that should be your primary dietary choice.

You want to get your folate from your leafy greens. If you can, grow your own leafy greens. They're very, very easy. Get out there with your kids. Make a raised garden with non-pressure-treated wood. You don't want to use pressure treated wood to make a raised garden bed. You could use pots. You could use clay pots. You could use rocks. Or you can use some basic lumber for a raised bed. If you don't have any space, they even have things that you can hang on your fence now you can put pots in and grow your own food. They're really cool. Grow your own leafy greens. This is the time of year to do it. Eat those. Dark leafy greens are best. You could also put them in a blender and make smoothies out of them.

Greens, some of them are very high in oxalates and some of you are probably on a low oxalate diet. If you don't know what that is, don't worry about it. Those of you who are on a low oxalate diet, find veggies that are low oxalate because it can flare you possibly, spinach for example.

The other one is B12 is found only in red meat. Those of you who think that you can get it from certain probiotics, or certain bacteria make B12, you're absolutely right. It does make certain types of B12, but it's B12 that's made for those specific bacteria. Our body does not use it. It does not use it.

In fact, if you have very high levels of B12 and you're a vegan or a vegetarian, you might have SIBO or some type of bacterial overgrowth that is producing a bunch of B12. When that lab is checking your blood for B12, it's not looking for methylcobalamin. It's not segmenting out the different types of B12. It's not looking at hydroxocobalamin and cyanocobalamin, just cobalamin or methylcobalamin or adenosylcobalamin. It's looking at this huge melting pot. We don't know which form they're looking at.

That could be a key sign if you don't feel right, especially if you have digestive issues if you have elevated B12 with your serum. That's where you get your B12 and your folates mainly.

**Katie:** That's great advice. I know you've written and talked before about the importance of leafy greens. I love that, because that's one of my big things, too. I think most health experts agree that most people will benefit from adding more leafy greens to their diet. There doesn't seem to be too much debate on that.

You mentioned that MTHFR defects can contribute to an array of health problems. From what I've read, it also makes it harder for the body to perform its natural detoxification reactions. For me, I've noticed if I drink alcohol it doesn't seem to leave my system as quickly as my husband, for instance. If I'm exposed to certain chemicals, I feel that for a while. I'm wondering if that could be also related to the gene defect. What kind of problems can something like this cause with detoxification?

**Dr. Ben:** Great point and great example. Alcohol is a great one. I never tolerated it well, either. I rowed competitively in college, University of Washington. Some of my teammates were total beasts. I mean they could beat anybody in rowing and racing, and then they could party hard and drink like crazy. I couldn't drink. I tried a drink, and I felt horrible. There was that genetic defect sitting there, lurking. That helped explain it.

What happens when you drink alcohol, alcohol gets broken down into numerous things. One of them is called acetaldehyde. Acetaldehyde needs to have certain nutrients to break it down. Acetaldehyde also blocks methylation. It will inhibit where that methylfolate and methylcobalamin work and intersect. If you're drinking alcohol and you're accumulating your acetaldehyde and you don't have enough methylfolate and methylcobalamin to move that out of there, you're going to feel really bad. If you reduce your alcohol, then that methylation pathway will work a lot better.

That's one of the key things that I tell people. If you have a genetic defect, then you need to either cut down on your alcohol intake or stop it altogether. It's a general good recommendation anyway. If you don't feel good, then alcohol could be a big player in that. It's because it inhibits methylation.

Other issues with chemicals and compounds, we mentioned arsenic earlier. Arsenic is everywhere. A lot of people are gluten free now. They're eating rice which is high in arsenic. A lot of people don't eat red meat for various reasons. They eat a lot of chicken. Chicken is everywhere. Chicken are very high in arsenic also, at least some of them. There are various reasons for it.

Also your drinking water. If you're not filtering your water, then there's arsenic in the water. We had some president not too long ago which increased the "safe levels" of arsenic in our drinking water. They raised it. They didn't lower it. They raised it. It's because these companies were dumping arsenic into the water, and it was increasing the arsenic levels. Instead of requiring these companies to clean their stuff up and making it safe for everywhere and everyone, the government decided to increase the level of permissible arsenic in our drinking water.

That has a tremendous effect in not only our methylation, but also in our energy. If you're constantly tired, it could be arsenic as well. You can check your RBC arsenic

levels, your red blood cell arsenic levels, in you or your kid. It's a very important point to do that. A lot of labs do that, a lot of general labs, and that should be covered by insurance.

The reason why arsenic levels can accumulate is because you need glutathione to get it out, which is the body's number one antioxidant and detoxifier. It's very, very critical. It's absolutely primary. If you're low in glutathione, you're in a lot of trouble for a lot of reasons.

The other one is SAME. SAME you may have heard about being useful for maybe pain reduction or insomnia or depression. It's kind of weird. It's like why would you give SAME for pain or depression or insomnia or detoxification? SAME is the body's number one methylator. That's what methylfolate and methylcobalamin make. Methylcobalamin and methylfolate make SAME. If you're low in either one of those, then your SAME is low, and then your arsenic levels might go up, and your glutathione levels will also be low. There are a lot of connections. I could go on with many different other ones.

**Katie:** That's really helpful. What are some safe ways that someone could go about helping the body detox? One of the reasons I originally found you is I was using a sauna. I would notice I would feel better, but if I stayed in too long I would feel worse, and my skin would itch, and it would create all these problems. It made me start researching why am I having this reaction when other people might not.

I have friends who find out about issues like this and realize that their bodies are not detoxifying correctly and jump into a big detoxification program or buy one of these cleanses online. I feel like there are so many considerations here. What are some safe ways that someone could start to help their body in that way?

**Dr. Ben:** Great point. When you're talking about detoxifying or cleansing or purifying in general, there are things that you need to do first. The first one is to stop putting the stuff in. If you're eating garbage foods and drinking a lot of alcohol, you need to be conscious of that and change that. If you are drinking unfiltered water, you need to start filtering your water. If you're buying furniture that's pressboard and it's off-gassing formaldehyde, then you need to get rid of that and buy some all wood furniture or all metal or glass or whatever that's not going to be off-gassing. You've got to reduce the amount of chemicals that are coming into your body before you even consider detoxing. Otherwise, there's no point. I mean why would you detox if you are still putting the stuff in you? Number one is to reduce the input.

Number two, I'm a huge fan of sauna, but you've got to do it right. Katie, I was just like you. I could after rowing . . . We'd be rowing out there in Lake Washington in the middle of winter, sometimes breaking the ice and be absolutely freezing. You'd come in after a row, and we'd jump in the sauna. My teammates would be sitting in there hanging out, laughing and warming up. I'd be there seriously for about five minutes, and I'd have to get out. I felt totally sick. Again, what the heck is wrong with me? I can't tolerate the sauna.

After a lot of time and playing with various nutrients and changing my lifestyle and diet, I finally can stay in the sauna for hours at a time. I mean I go to saunas here in Seattle and am literally in there for half the day in and out. Sauna is a great way, but you have to do it right. There are articles on [mthfr.net](http://mthfr.net) that you can cite, Katie, which give in depth information about this. I also want to shoot a video giving information about that, but for now I don't have it.

Quickly, sauna is a great way, but the best thing to do with sauna is you don't be macho. Don't think that you're in there for as long as you can is better. The first sign of feeling weird, not even off or sick, but just "My eyes I'm starting to see something weird," or

"I'm feeling just a tiny bit dizzy," or "I'm getting a little bit of a headache," or "My foot's starting to tingle." Get out of there. Get out, you're done.

Start at low temperatures. You want to take certain nutrients prior to sauna as well. You never want to sauna if you're dehydrated or without food. There's a lot of information for sauna. Sauna is one.

Another one would be Epsom salt baths. I'm a huge fan of Epsom salt. A great website to get bulk Epsom salt is [saltworks.com](http://saltworks.com). I have no affiliation with them. You can buy these huge bags, 40, 50 pound bags of Epsom salt for a fraction of what you could get it at your local store and save a lot of money.

If you don't have a bath and you don't have a sauna or you don't like saunas or baths, then you dress like crazy. Put on a bunch of clothes and get hot. Go for a long walk. Sweat. It doesn't matter how you sweat. As long as you sweat, you're going to detox. Your primary detoxification organ is your skin. If you can sweat, you can get all that stuff out of you quickly. That's fantastic.

If you have a skin disorder, if you're itching or if you have eczema or psoriasis, if you've got pimples, then that is a sign that your liver is overworked. If you can sweat, then you're getting a lot more chemicals out and your liver can now do more work. Any type of skin dysfunction is a good sign that your liver is overworked, so you can start working on your liver, too.

A little quick fact about your liver is 85% of all methylation occurs in your liver. That is how important methylation is for your liver. That's where most of it takes place.

**Katie:** That's so fascinating. Yeah, that was really helpful. Thank you. I love that you also mentioned hydration, because obviously that's vital for the body to flush anything

out as well. Green vegetables, there's so much research on how they can bind with things in the body and help remove them. There are so many benefits there.

I'd like to switch gears a little bit. One area that isn't often talked about but that I know you and I have discussed a little bit, at least via email, is exercise induced asthma being related to MTHFR. I know a lot of moms and friends of mine have children with exercise induced asthma. Can you explain the connection here and maybe some things that could help?

**Dr. Ben:** Yeah. Again, great point. It's sad. I'm a soccer coach. I was a former basketball coach, too, for my kids. Now I just do soccer. I have a number of kids on my soccer team with exercise induced asthma, and on my son's basketball teams there are a lot of kids. I start talking with these parents. There are like five kids on each team with exercise induced asthma. It's like, "What the heck?"

I started talking with the parents. I talked to them about B12 and methylfolate and glutathione. I give them these things. I recently picked up my oldest son from a basketball practice. I hadn't seen this family in a while since I talked with the mother. This kid has really bad exercise induced asthma. He was hating it. It was causing him to be benched. He saw me. He was so excited. I mean I barely know this kid. He ran up to me. He shook my hand probably six times and his dad as well. He goes, "It's gone.

Exercised induced asthma is gone." He said, "Thank you, thank you, thank you."

All I did was support his methylation and his detoxification system. It goes back to what we were just talking about of how methylation is so key to making our glutathione and our SAME and how MTHFR can inhibit all that. Inhibit means slow it down or prevent it from happening.

You can bypass these problems. You can go around your MTHFR gene defects by giving what MTHFR makes. MTHFR makes methylfolate. If MTHFR enzyme makes methylfolate, well you can take methylfolate. That's great. You also need B12 with it to make it work. Remember the two thumbs and the two index fingers. That motion needs to happen. Glutathione is also needed.

The reason for exercise induced asthma is complicated. It's complicated science. When you exercise, you are using up your ATP. Your ATP is your cellular energy. As you use up your cellular energy if you don't have enough nutrients to produce it again, then that will increase a certain compound in your body called adenosine. As adenosine accumulates, it can increase histamine.

You're saying, "What does that have to do?" Well, adenosine levels can drop and go down naturally with B12 and methylfolate. If you have inadequate B12 and folate, adenosine levels can go down. If your adenosine levels go down, then your histamine levels go down. Histamine is a big problem for asthmatics, and many of us know that. If you can reduce histamine, that really helps reduce exercise induced asthma as well. There is one connection.

Another one is also glutathione. Glutathione is really important for the lungs. If you have chronic lung infections, or pneumonia, or recurrent chest colds, or any type of chronic lung disease or asthma or difficulty breathing, glutathione may be something to consider.

Those are the top three that I recommend for exercise induced asthma. Again, B12, methylfolate, and glutathione. Again, you have to reduce the input of problems. A lot of these kids are eating wheat and gluten, and they shouldn't be. I advise that as well. Sometimes, you get the eye rolling. I start with the least intervention first, B12 and folate and glutathione, but I always recommend to eat the leafy greens and to cut out the

processed foods including reducing the sugars and the gluten. Dairy products are also very known for asthma, especially if there's a skin disorder associated with it.

**Katie:** That makes a lot of sense. That's so fascinating with the histamine connection there as well. I know people who suffer from not even asthma, but they have histamine intolerance or histamine related issues. Maybe that'll be a helpful key for them as well. I cannot believe how fast time has flown. I could talk about this all day. A question I usually ask at the end to wrap up is if someone is hearing about this and maybe is concerned that they have a gene defect or maybe recognizes that they have some of these problems that we've talked about, what would be three first steps that might help them get on the track to reversing these or figuring out how to effectively deal with them?

**Dr. Ben:** The first three things is to change your lifestyle, diet, and your environment. That's step one. You've got to reduce the burden. If you have an MTHFR gene defect, the first thing that you need to do with it is to reduce the amount of work it has to do. I have the gene defect of MTHFR personally. Mine is reduced capacity by about 70, 75 percent. That means I can not be drinking very much alcohol. That means I can not be exposing myself to a lot of toxins. I can't be having yeast overgrowth in my gut, so I can't be eating a lot of sugar. I do those things, I feel fine. If I start loading up on the ice cream, drinking alcohol, and eating processed foods, I'm not going to be able to wake up in the morning. My brain isn't going to think. I won't be able to research, and I won't be able to do the things I need to do. I will feel bad. I'll have skin problems. I'll get eczema as well. The first thing is that.

Again, you can't out-supplement or out-exercise. That's a great comment that you have, a problem. Change your lifestyle. It's going to take time, so don't beat yourself up over it. Give yourself credit when you do it right, and take note when you're doing it wrong. You know how to eat. We all know what we should be eating and what we shouldn't be. Cleaning up your environment is a bit trickier. Getting a water purifier or filter is

important. Katie probably has some good recommendations for those. Sauna is great as well.

Keeping a positive mindset is so important. If you are stressed out, then stress increases methylation. It increases how fast it works. This is proven by science. I didn't pull this out of my hat. I read research articles. What a main recommendation that I have for people is to reduce stress and anxiety. You can do that by going to bed on time, by going on walks and hanging out with friends that you enjoy, not hanging out with people you don't enjoy, quitting your job if you hate your job. All these things make a big difference. Reducing your stress and anxiety is important.

There's a great researcher out there. He used to teach at a med school at Stanford. Actually, he didn't teach at Stanford. He researches at Stanford now. Bruce Lipton. Bruce Lipton has the new biology book. He might have some things on YouTube for you guys to watch as well. Bruce Lipton is a very empowering, funny, jovial guy. I have had the honor of watching him speak and present. He is what influenced me. My first quarter first year of med school, I saw him speak. He talked about how powerful the mind is in controlling our genetics and how we feel and what we do. That has been resonating with me since, man, what was it, 2002 is when I saw his work. It blew me away. I really recommend that you watch his stuff and get associated with his work. I think those are the top recommendations I have.

**Katie:** That's such great advice, and the stress part definitely hits home with me. I've always said that's my biggest struggle with optimizing, especially with a family. As you know, it can be very busy and keeps you busy with life and stressful a little bit. It's for me easier to optimize diet and that kind of thing, but stress and sleep are my struggles. That's a great reminder for me.

Dr. Ben, thank you so much for being here. You've given us so many amazing resources, and I'll try to make sure to link to all of those in the show notes so that people can find them and find you. Where would you like people to find you online to visit you and find out more?

**Dr. Ben:** Well, I think a great place to start so people can see visually about MTHFR and learn about folate, [seekinghealth.org/gift](https://seekinghealth.org/gift) would be a good introductory video for people. It's just content. It's really good content. I would say that would be more information for you. I'm all about education first.

MTHFR.net is a good resource, too. That is a website dedicated only to MTHFR. There are a lot of articles there. There's a form for asking questions with other people. There are resources.

Then, [seekinghealth.com](https://seekinghealth.com) is a supplement company that I've developed over the years that's a result of all my research. As I researched, I realized that folic acid is not what we need, so I started formulating things that we do need and our body can use.

[Seekinghealth.com](https://seekinghealth.com) is a result of my years of research. It's a passion of mine. It's a good outlet. [Seekinghealth.org](https://seekinghealth.org) is all education based.

Those are the top three. I'm on YouTube as well. You can find places on YouTube and videos on there as well.

**Katie:** Perfect. Like I said, I'll make sure to include all those in the show note links at [wellnessmama.com/podcast](https://wellnessmama.com/podcast).

Dr. Ben, thank you so much for taking the time. I know how busy you are, and I appreciate so much your willingness to share.

**Dr. Ben:** Thank you, Katie, and I appreciate all you're doing. You're getting a lot of good education out there for people. Thank you for that.

**Katie:** Thank you.

Thanks as always for listening and for reading and for being on board with creating a future for our children that's healthier and happier.

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