



Transcript: #489 Why You Must Cleanse Before You Conceive with Dr. Mary Shackleton

Dr. Wendy Myers:

Hello everyone. Welcome to the Myers Detox Podcast. I'm Dr. Wendy Myers, and we have a great show today. We have Dr. Mary Shackleton. She's a naturopathic doctor that specializes in conception, and we're going to be talking about cleansing before pregnancy. So why do you need to detox before you get pregnant or if you're a woman of childbearing age. And we'll talk about how long you need to detox before you conceive. Can you detox while you're nursing or pregnant? Why it's key to eat fresh herbs to detox, and we go over all the nutrients that are great for detoxification. And we also talk about the type of testing that you should get before you get pregnant to find out if you have MTHFR. And we'll also talk about why MTHFR and toxins are involved in multiple miscarriages. We'll talk about detox and some typical myths, like is a master cleanse good for detoxing? Is water fasting good for detoxing? Why does Dr. Shackleton loves juicing as well? So lots and lots of really good tips on the show today.

I know you guys are listening, you're worried about your body's burden of toxins, and I created a detox quiz you can take. You can check it out at heavymetalsquiz.com. Just take a couple of seconds to take the quiz, and then afterward, you'll get your results. And then you'll get a free video series answering a lot of your frequently asked questions about detoxification. So check that out, heavymetalsquiz.com.

Our guest today is Dr. Mary Shackleton. She is a naturopathic doctor and founder of Holistic Integrative Care, and she's been practicing naturopathic medicine with an emphasis on women's health for over 25 years in Boulder, Colorado. She also has a master's in public health, which focuses much of her work in the area of prevention, and her current focus is on environmental medicine and the conditions associated with toxic exposures, including autoimmunity, chronic fatigue, cognitive decline, hormonal changes, hormonal imbalances, mitochondrial dysfunction, and neurological conditions.

And she also has written a book, written for women who are preconceived to help them reduce the lifelong impact on their children of chemical exposures and create the foundation for a healthier neurological terrain beginning in utero. So it's her hope that those who find this book will learn the fundamental principles of living a life of detoxification. And so Dr. Shackleton has co-founded numerous companies and projects, including Insulite Laboratory, a company dedicated to reversing disorders related to insulin, PridePads Africa, pridepads.org, whose mission is to provide sanitary pads to girls in Cameroon, Africa, and to keep them in school. And she's been an avid lifelong gardener, runner, skier, and hiker and has raised three children with her husband in Colorado. You can learn more about Mary and contact her at maryshackleton.com. Hello, Dr. Mary Shackleton. Thank you so much for joining us on the show.

Dr. Mary Shackelton: Good morning. Thanks for having me.

Dr. Wendy Myers: Yeah. So why don't you tell us a little bit about yourself and how you started doing what you're doing.

Dr. Mary Shackelton: I have been a naturopathic physician for 25 years. This is my 25th year in practice, and I was always interested in how I didn't know you could get a doctorate in natural healing. I thought that that would be a hobby of mine forever. The story is true; I walked into a telephone pole with a flyer on it for the new school opening in Scottsdale, which was Southwest College of Naturopathic Medicine. And so I had been pre-med, and I had a master's in public health, and it wasn't quite right. It wasn't like that. Um, I'm in the right spot until I found naturopathic medicine, and it's my right spot. I went to school, graduated in 1998, the third graduating class of that school, and the rest is history. It's just a fantastic career for me.

And as you probably know, people have turned to natural medicine in more and more numbers in the last 25 years because of the inability of conventional medicine to address some of the more complicated layers of people's illnesses. So I feel like it's a true gift and an honor to be able to help those people.

Dr. Wendy Myers: Yeah, and it is so important we're serving such an important segment of the community and trying to reach more people. And something that I've always wanted to talk about is the importance of cleansing before conceiving. This is a huge issue. So can you talk a little bit about how you work with people and why you think it's important to detox before you get pregnant?

Dr. Mary Shackelton: Yes, and it's kind of in true naturopathic form. I know you've seen this too. People are sicker and sicker and sicker, and they do not have the classic diagnoses anymore, but they have kind of more nebulous symptoms like brain fog. The increased, huge uptick in patients with neurologic diseases such as Parkinson's and MS and all these things shows that the brain is the most sensitive organ to toxicity. And I have just been seeing more complicated

neurologic presentations. And so I started thinking as a naturopath, we treat upstream. And so what is upstream of this human that's in their fifties and sixties with this brain fog, but how did they come into this world? And so there's something called vertical transmission. Vertical transmission is how we give our toxins to the next generation. So what our great-grandmothers were exposed to give to our mothers, our mothers gave to us, and now we're passing this along.

So it is exponentially greater what we're passing along in terms of toxin burden to the fetus in utero. We used to think that the placenta was this protective barrier, that the fetus was protected around certain things. The truth is that is not true. Everything passes from the maternal-fetal circulation, including all of the toxins you've stored. So while you might be very careful while you're pregnant to avoid caffeine and alcohol and those types of things, the things that we are exposed to on a daily basis get through to the fetus. And that causes challenges for their neurologic development, increase in the risk of autism, ADHD, and being on the spectrum. And then, as we age, I think our brain is just struggling under this neuroinflammation caused by toxic exposure.

So that was the genesis of the book. The book was, what if we address a whole new generation of moms in this way and watch the impact on their children? Children now are taking three and four medications to manage their anxiety and their focus and concentration. And this is just not normal. It's common now, so we're starting to accept it as normal, but it's not normal. It's just common.

Dr. Wendy Myers: So what is the name of your book?

Dr. Mary Shackelton: The book is The Preconception Cleanse, How To Detoxify Your Life Inside and Out for the Optimal Health of Your Baby. It's a how-to guide, really.

Dr. Wendy Myers: Yeah, I mean, this is why I started getting into detox when I was planning my daughter, Winter. I started reading about all the baby books and how you might want to make your own baby food and not expose them to toxins. And I thought, "Well, why haven't I ever really read about this before?"

Dr. Mary Shackelton: Exactly.

Dr. Wendy Myers: And I think there are a lot of moms, when they first start planning their pregnancy or get pregnant, that there's this whole learning curve, and not putting toxins in your body is one of them. So can you talk a little bit about, in your opinion, you think fertility is declining because of toxins?

Dr. Mary Shackelton: Absolutely. Another side benefit of this book is that once your toxic load is reduced, then the orchestra of your hormones is better. And so, as we know that endocrine disrupting hormones such as fragrances and plastics, those things disrupt hormone signaling, and that can have a huge impact on fertility. So you talk to any fertility specialists, they'll say in the span of their career, they have

seen this become such an enormous problem, and this is the tip of the iceberg with environmental toxicity for sure.

Dr. Wendy Myers: Yeah, I mean, there are so many women that are not successfully conceiving and think it's genetic or there's something wrong with their eggs. I think there are a lot of fertility clinics not talking about the toxin issue at all. What's going on there, really, when women are having trouble conceiving?

Dr. Mary Shackelton: Again, our brain has a very complicated communication with our ovaries. And when our brain is struggling with neurotoxicity, that messaging gets confused. Not only that, those hormones that we're exposed to in the form of plastic, so let's back up just a sec. When you are exposed to plastic, it actually has a similar shape to a hormone. It sits on the cell surface. It tells the cell to do the action of that hormone when you actually haven't been exposed to a hormone. And the same is true for fragrances and other things in the environment. And so that interferes with your total hormone, the chemical messaging that happens with menstruation and ovulation and preparing an egg.

So I think we can get very complicated in our approach to fertility with conventional medicine like IVF is a very complicated way to approach it, but this is actually a very simple problem. It is simple in that we are just overexposed and under-supported. And so these low-dose chronic exposures every day. I know you say this probably all the time. But the low dose exposures on a daily basis, it's like, "Ooh, a squirt of perfume, not that big of a deal." It is a big deal because it accumulates and then interferes with the way our cells communicate with each other. And infertility is one of the side effects of that, for sure.

Dr. Wendy Myers: Yeah. And you think about it, women are everyday spraying perfume and then putting on their deodorant and then putting on their makeup and then putting on all their lotions and the conditioners and the soaps. Women get exposed much more than men do unless they're really manscaping quite a bit and attending to that.

Dr. Mary Shackelton: But they still have fewer; I mean, they don't wear lipstick. There's a quote, and I don't know if this is true or not, but it's approximately correct, which is women get exposed to 400 chemicals before they leave their bathroom every day. So turn your shampoo bottle around, and look at what's in that bottle. Those are all things that get absorbed through your skin day by day. It's not a massive exposure. I have a background in public health also, and what they really study with public health is massive exposures like this train derailment in Ohio where it spilled into the ground. That doesn't go away. That's going to persist in the environment, that's going to get into the water. It's going to cause problems. It's going to be hard to prove. It's a mess.

So usually, public health focuses on these large environmental disasters versus the small daily exposures that happen in your own home. So it's these voluntary things that we have control over. And women, I get it. It's hard to break up with

your favorite shampoo, but if you want to conceive and you want to be healthy, and you want to have good cognitive function throughout your life, these are things that are worth doing.

Dr. Wendy Myers: And really drive that point home to all the women of childbearing age when they want to have children; why is it important to detox? I know you mentioned that before, but there are just so many reasons. Can you go over it and maybe share some statistics and things like that?

Dr. Mary Shackelton: Yes. So women are the biggest purchasers of products, and manufacturers these days do not have to prove that their product is safe. In fact, in the 1950s, Chanel got a piece of legislation passed that allowed fragrance to be listed as a fragrance because it was proprietary. So that legislation is still in place today. So when you turn your bottle of whatever over, and it shows fragrance on the label, there could be up to 300 chemicals just in that fragrance. And again, these interrupt hormone signaling, most importantly. So you add multiple layers of chemicals all day long on your body, and it gets stored in our fat cells, it gets stored in our brain, and then we have multiple different presentations of that clinically, brain fog, fatigue, arthritis, all of these things downstream. Fertility is a really big one.

And so women, there is a tool; I want everyone to be aware of this tool that's called the environmental working group.org (<https://www.ewg.org/>). I'm probably sure you've talked about this, but this is a database where if you're not sure whether the product in your house is safe, you can put it, you go to ewg.org, you go to the skin-deep database, and you can put in your product, and i'll rate it for you. It'll say safely that it is green, moderate yellow, and red unsafe. You want to get all the unsafe stuff out of your house over a period of a year before you conceive. So when babies are born, they have measured up to 287 chemicals in the cord blood alone. So that is evidence that what we are exposed to gets into the fetal-maternal circulation and that baby's exposed to that. So 287 chemicals, and we don't even really know how those interact. I think there were 127 of those that were carcinogens, which are cancer-causing chemicals.

Dr. Wendy Myers: There are a lot of women that find my work; find your work. They're already pregnant, or they just had a baby, and they start getting the idea that they need to detox. So what is the problem with that when you're already pregnant, or you're breastfeeding and starting to think about detoxing?

Dr. Mary Shackelton: I love this question. Really the genesis of the book was really you want to detox for a year before. It's kind of like a machine. So you initiate detoxification, and then it starts to come out. And then sometimes people don't feel well in the initial stages of that process, which is a good thing, a bad thing. It means that you're getting stuff out, but it's not actually moving out quite well enough. So you want to give yourself at least a year before you conceive to mobilize these toxins and get them out. You're going to sweat, you're going to bind them out, you're going to do all kinds of things to get them out of your body. If you detox

when you're nursing, that's going to go straight into your breast milk because if anything goes into your bloodstream, it goes straight into your breast milk.

So you want to avoid detoxification of any kind. The best thing that women can do when they're nursing or when they're pregnant is just to eat extremely well. So you want to eat organically a hundred percent of the time because pesticides and those chemicals do get into our system and stay there. We want to take high doses of nutrients, simple things like vitamin C, vitamin E, and antioxidants. I think one of the best tips for women also is to have a diet that's rich in fresh herbs because these fresh herbs have so many important phytochemicals that are supportive of detoxification. So I really want women to avoid detoxing nowhere near conception if they can. I want to start a movement here with women so that they think about their fertility after they've detoxed. They go, "Okay, I'm going to get pregnant in the next five years. Next year, so I'm going to start cleaning up my act."

Dr. Wendy Myers: Yeah, yeah. So, so important because you don't want to do this. You don't want to start detoxing after you've had children. I mean, it's never too late. But the point is just preventing the passage of these toxins and all the lead in your bones, and all the toxins are stored in your fat. They get into your child. Your child is made of all the raw materials that you have in your body. What about mercury fillings and children? Can you talk about that and how mercury filling is going to impact a child in utero?

Dr. Mary Shackelton: Correct. Yeah. So I really also caution women about having any of their mercury amalgams removed anywhere near the time of conception. That's a heavy metal that gets stored and binds tightly to the brain and bone tissue. And so you want to leave that where it is if you're planning to conceive and deal with it after you're done nursing. But if you have time before conception, it is important to remove mercury amalgams and to be very careful about vaccinations that are preserved with thimerosal which is mercury-containing. And then the consumption of fish is absolutely something that I recommend against, even though the EPA says it's safe for pregnant women to have fish two or three times a week. That is absolutely not true. Mercury will impair the neurologic development of the baby. And so women that have a lot of mercury storage, and again, on your site, you can measure this. You want to measure where your heavy metals are prior to conception, give yourself a year to chelate or pull those out because those go straight to the baby as well.

And mercury there is no safe level of exposure to mercury. When you have mercury fillings in your mouth, and you chew, or you drink a hot liquid, it is being pulled out of that into your system, and then you store it. So I don't believe that mercury fillings are safe. Even having one of them would be worth getting rid of because not only do we get the mercury from that exposure, but it's in the environment. So we want to reduce our own exposure as much as possible to mercury.

- Dr. Wendy Myers:** Yeah, because I mean, even when people are removing them properly with a biological dentist, you still get some of the mercury in you that's mobilized and getting into your body. It's just inevitable.
- Dr. Mary Shackelton:** Correct. Even if they use all the dams and the masks and the hoods and all of that, it's extremely tiny, and so it's impossible. But seeing a biological dentist is crucial. And so make sure that you get your mercury amalgams removed by somebody that knows what they're doing, and they need to have that specified on their website or when you ask them questions. I've had a number of patients become sicker by going to another country to have their mercury fillings removed because it's less expensive. But then they literally get home, they can't find their homes, and they have so much brain fog and confusion. It's really dangerous. So mercury's a big one.
- Dr. Wendy Myers:** Yeah. And do you think it's enough to when you're pregnant, you're eating fish or just have some chlorella or some zeolite or something to catch the mercury because that's kind of a bio-hack that some people do to prevent mercury deposition in their body?
- Dr. Mary Shackelton:** Yeah, I think that's actually a really smart idea. If you have access to those things. Fish, I would say maybe once or twice a month would be safe during pregnancy. And if you take chlorella or even high doses of cilantro can be helpful or a binder, zeolite or I love the BioToxin Binder from CellCore. Those types of things will help bind and help you excrete those heavy metals once you're exposed.
- Dr. Wendy Myers:** Right. And so, what are some tests that women should have prior to conception?
- Dr. Mary Shackelton:** So one of the most important ones is the MTHFR test. This is a gene test that you can have done with any provider. It's a blood test, and it measures the methylenetetrahydrofolate reductase test. You don't have to remember that. Just remember MTHFR. Any physician can order this test, and it will tell you whether you have any mutations in this gene. This gene is one of four steps of detoxification in your liver. It supports methylation. Methylation is the addition of a carbon and three hydrogens to something that you want to excrete. And if you're not methylating properly, the risk of having a baby on the autism spectrum goes up dramatically. So this is a new finding, a la Ben Lynch. I know you know Ben Lynch. This is a finding that's recent and is not taught in medical school, so you might have to educate your provider about why this is important.
- But if you have a mutation on this gene, one or two mutations, the way to fix this is folate. And so you want to be able to make sure that you're taking a good dose of folate during your pregnancy. But the best way to get folate is from dark green leafy vegetables. I'm a big fan of juicing. I don't think you can hurt yourself with food or smoothies. Having parsley and cilantro and spinach and kale and all those things have a lot of folate in them, which helps undo this methylation

gene defect that 25% of women have. This can also be a source of multiple miscarriages. If you have an issue with methylation, you might be able to avoid that by knowing your MTHFR status. Prior to conception, I would also recommend a heavy metal test, no question.

Our environment is burdened, and some people can excrete heavy metals beautifully, and some people cannot. And so if you know your toxic metal burden before you're pregnant, then you can actually do something about it so you're not passing that along to your baby. Again, there's no safe level of exposure to lead or mercury, and they're both very damaging to neurologic tissue, especially in the unborn fetus.

Dr. Wendy Myers: Yes. And can you talk about some popular detox myths? So there are a lot of very popular detoxes out there like the master cleanses and fasting and doing even just juice fasting as well. I'm a big proponent of juice, but you know.

Dr. Mary Shackelton: Me too.

Dr. Wendy Myers: Can you talk about maybe your thoughts on those as detox methods?

Dr. Mary Shackelton: Yes. I'm glad you asked because that's always a great thing. There's so much on the internet that people think is going to support detoxification, but it really doesn't, and it actually could slow things down. So I will start with the master cleanse. The master cleanse. I don't know when this started, maybe 20 years ago. People thought cayenne pepper, honey, lemon, and water for days on days you'll be detoxing. But the truth is your liver is a little bit more complicated than that and requires nutrients to fuel detoxification. So we need fat, protein, and carbs number one, and then we need nutrients. So when you're doing the master cleanse when people lose weight, that doesn't necessarily mean that you're detoxifying. It means that you're losing weight, you're getting a digestive break, and you might feel better, but in terms of lowering your total toxic load, maybe not so much.

The other point I want to make is that rapid weight loss should really be assisted by binders, the ones that you mentioned, or something else because when you're losing weight, the fat is where we store chemicals. And if you're not binding to them, I've seen people have gallbladder crises and all kinds of challenges from losing weight too rapidly without good support. So that's the master cleanse. That's my take on the master cleanse. And a water fast is absolutely not helpful for detoxification. It can be helpful for cancer and cardiovascular disease, and other things, especially if it's medically supervised. But I'm not a big fan of water fasting for detoxification for the same reasons that the nutrients are what drive detoxification. And so ideally, people will live a life of detoxification so they don't have to do a detox. That's kind of what my hope is.

And so a water fast is a quick and dirty way to lose a few pounds, but really not permanent weight loss and certainly not taking down that total toxic load. Which is a picture of a barrel, and our barrel is full, and if we want to eliminate what's in that barrel, we have to do it properly. And our bodies are very wise, so we can't trick them by just drinking water.

Dr. Wendy Myers: Yeah, when you're doing a cleanse if you don't eat solid food for a few days, that's something that weight you lost is just poop in your colon. You've lost maybe a couple three pounds of poop that's just not there because there's just solid food to process. So got to factor that in T-minus three pounds, you know what I mean?

Dr. Mary Shackelton: Just get a colonic and just eat.

Dr. Wendy Myers: Yeah, yeah, totally. That's what I do. But yeah. So what about juicing? So just like juice cleansing?

Dr. Mary Shackelton: I'm such a big fan of juicing. I really am, and I cannot say enough about juicing. I feel, again, the nutrients in our foods are so deficient because our soil is deficient, and juicing is an amazing way to increase your exposure to these powerful things that exist in plants that are so healing. But as a stand-alone therapy, I don't love it for detoxification because we don't have any fiber in the juice that's going to help bind to what comes out in our gut as we eliminate things. So I love juice as an addition to eating food. So if you want to do a cleanse, great. Have some salad every day with some protein and some fat and some juice. That is a powerful way to detoxify. But juice by itself is probably not the most efficient way to detox.

Dr. Wendy Myers: Yeah. And what about eliminating animal products? So a lot of people think, "Oh if I just cut out meat, I'm doing a detox." Or if they're going vegan or vegetarian, that's very detoxifying. And that just kind of drives me nuts. But can you speak to that a bit?

Dr. Mary Shackelton: I really want to have people consider fragrance as a detox instead of food. I think our foods are here for us to sustain ourselves, and certain people can do well on a vegetarian diet, and certain people just can't. If they have type O blood or whatever, they need to have actual animal protein. So that's a big question because I understand the philosophical, spiritual choices of people who do not eat meat.

Dr. Wendy Myers: I totally do too. I totally get it. I was just trying to begin for a minute.

Dr. Mary Shackelton: I was for many, many years, and I just was always kind of heavier than I wanted to be. No energy. It's just not right for me. And for some people, that's the right thing for them. But I do know that where we get our food is super critical also. And so if you're buying meat that is raised with hormones and antibiotics, then that's something that's worth detoxifying from. But I do feel like protein drives

detox. And so if you get plant proteins, fantastic. If you are the type of person that doesn't have to have animal protein, you feel fine, and your energy stays stable all day long; great. I do know that it can give you a digestive break to not have animal protein.

And so it's just a mixed thing. I think we both would probably agree that there's no one diet that works for every single person. And so you have to know what your protein requirements are. And certainly, eating clean protein is critical. So knowing where your animals come from. And I don't know that I have any major hesitation if somebody's really going to do a deep detox and they want to avoid meat for that period of time; I don't think that's a bad thing. I think that's probably good. Getting plant protein in that timeframe is probably helpful.

Dr. Wendy Myers: Yeah, I agree too. I think going without meat for a period of time, a limited period of time, is fine too. Take a break from that here and there.

Dr. Mary Shackelton: It requires more to digest it. So it's like it takes a lot of energy to digest it. And some people don't have enough digestive fire, so to speak, and so it's more difficult.

Dr. Wendy Myers: Yes. And can you talk about the nutrients the liver needs to detox because we need animal protein, a lot of sulfur-containing amino acids, and animal protein to facilitate detox? Anything else that we need for the liver?

Dr. Mary Shackelton: Well, I'm a big fan of choline. Choline supports the gallbladder, which is a major organ of detox as well. We typically forget about the gallbladder, but choline is from eggs. So eggs get a bad reputation because of cholesterol, and we all know that cholesterol doesn't come from eggs; it comes from carbohydrates. And when our liver's actually not functioning properly, our liver's going to make more cholesterol. The protein from eggs is a very important nutrient for liver detoxification. So choline, but yes, also glutathione. Glutathione is a sulfur-containing molecule that we make endogenously or inside, and when we're exposed to toxins, we kind of burn through it really rapidly. So glutathione is a really important nutrient for detoxifying the liver. B vitamins are extremely important for detoxifying both phase 1 and phase 2 of the liver. And then certain foods that have a lot of sulfur in them include garlic and leeks and onions, and eggs. So those big ones.

And there's a small percentage of the population that has something called a CBS mutation. They have difficulty with sulfur-containing foods. You probably know if you're that person, and if you take any glutathione, you will not feel well. And so maybe that person may rely on acetylcysteine or something like that to detoxify their liver. And then the number of nutrients is vast. So I also really want people to get that in their food. Turmeric is very detoxifying for the liver. It's antiinflammatory, but it also really does support detoxifying in the liver.

Dr. Wendy Myers: Yeah, You also know if you don't tolerate garlic well if you eat Korean food or Lebanese food and you throw up afterward. It sounds like there's a lot of garlic in the food.

Dr. Mary Shackelton: Garlic in there.

Dr. Wendy Myers: And you adjust. Your body's like, get this out; we can't process this. And you get sick. That can also be a sign as well.

Dr. Mary Shackelton: Right. That sounds like you've had that experience before.

Dr. Wendy Myers: I have. Yes, I have. I do garlic, though. Too much, my body's like, Nope, thanks, but no thanks. So let's talk a little bit about nutrients that people need prior to conception because this is something that I know for me; I experienced when I got pregnant, I was very mineral deficient, and I would eat, and then I'd be starving right after that. It was just the oddest thing where I just couldn't get enough food in my body. I realize now I was very, very mineral-deprived and nutrient deficient.

Dr. Mary Shackelton: Yes, So that's a big one. So when you're thinking about when you're making a human, all the requirements for making bones and tissue come directly from you. So if you show up in a deficient state, you're going to feel it. And so that's a good example. The mineral deficiency. I kind of say the big five, which are probiotics, really important for building an important microbiome as the baby is born, come from the vaginal canal, and take on your microbiome for life, literally. So your microbiome needs to be in great shape for a number of reasons. But that is the biggest one I would say at the moment. And then fish oil is super important because of the important support for the neurologic development of the baby. And while DHA is important, I kind of think they're both important, EPA and DHA.

My general recommendations are about 1400 mg of EPA and about 800 mg of DHA for a developing brain and then obviously a prenatal vitamin from the moment you even decide you want to get pregnant because you want to start putting those nutrients in and actually having a little bit more so that when you make this baby, that baby gets plenty of nutrients and doesn't leave you depleted. They also really talk about pregnancy spacing. So if you have a baby, you want to really start putting those nutrients back in aggressively after you have a baby if you plan to have another one. They've done studies where they've looked at women that have had five babies, and by the time that fifth baby comes out, there are very poor nutrients, and the mom suffers primarily. And if she's so depleted, then the baby will eventually suffer as well.

So the nutrients, as we were just saying, the soil is depleted. Our agricultural processes for industrial, like the commercial processing of food, have left our soil very deficient. So we have to take these nutrients. So prenatal, probiotic, fish oil, and vitamin D are critical. So the studies that have come out about vitamin D

deficiency and maternal vitamin D deficiency in the last 10 years are kind of shocking. And maybe at the time that you and I were having babies, we didn't know all this. But your baby's at 30% more risk of a chronic illness if you are born to a vitamin D deficient mother. So that is a lifelong challenge that could be solved by taking enough nutrients while pregnant.

And then minerals is the fifth one that I have is my five that I recommend across the board. And then, we tailor that based on if you have the MTHFR mutation or if you have other problems. I'm very careful about making sure people don't live in any place where they're exposed to mold because that eats up all your antioxidants, and you can be quite sick and have a baby with a neurologic issue if you are exposed to mold. So then making sure that they have enough antioxidants on board.

Dr. Wendy Myers: Yes. And what about the folic acid controversy? Because a lot of doctors' prenatal vitamins contain folic acid. Can you talk about the problem with that and why you need to be taking folate instead?

Dr. Mary Shackelton: Yeah, so folic acid was our beginning step to understanding how to fix the MTHFR mutation, but it's synthetic. And if you think about the methylation pathway as a wheel, folic acid enters that wheel and gets spun off into a synthetic derivative that is actually harmful to us. So when you look at a multivitamin, and it says folic acid, put it down and walk away. You want to find one that says folate. Folate is the only nutrient that can help that biochemical pathway spin appropriately in the right direction. And folic comes from food. So synthetic folic acid is going to be harmful to us and not going to solve the problem of methylation.

And so it's really important that the consumer understands the difference between synthetic, which is folic acid, and natural, which is folate. It'll say folate DFE. And the appropriate range is somewhere around 800 mcg if that's what you're looking at in your prenatal vitamin. But food gives you folate. So again, you don't have to think too much. If you're eating enough dark green leafy vegetables, you're getting folate. But if you're contemplating pregnancy, a prenatal vitamin needs to have folate, around 600 to 800 mcg.

Dr. Wendy Myers: And because a lot of people today have iron overload, do you think it's smart to take a prenatal vitamin that also contains iron?

Dr. Mary Shackelton: This is why it's important to have a blood test before you conceive. And so, in my book, I talk about which tests are important to ask your doctor for before you conceive, and checking your iron status is important. Most menstruating women do not have iron overload, but you want to be careful. Most prenatal is formulated without iron for this very reason because adding more iron to a situation that's already full of iron causes more oxidation and damage. So we want to be careful about that.

Dr. Wendy Myers: Okay, great.

Dr. Mary Shackelton: If you've ever had anemia in your life, you're probably going to tend to be on the lower end, and as long as you're menstruating, you know, have that monthly elimination of blood, and so that helps reduce iron overload. But again, iron overload is a problem with the liver. So the liver is having difficulty, and it can be damaged from iron overload. So I think our poor lives are struggling. And there are numerous ways this shows up. Brain fog, fatigue, fatty liver disease, cholesterol production. Thyroid disorders can be a manifestation of a liver problem because that's where we convert all the thyroid hormones. Actually, the thyroid would be another good test for women to have before they get pregnant that can help us uncover a hidden thyroid problem that maybe nobody knew about but that can impair your ability to get pregnant or maintain a pregnancy. So checking your thyroid is important.

Dr. Wendy Myers: Yeah, and the child can have a lot of issues too. If you have low thyroid function and low thyroid hormones, your child can have a lot of problems as a result of that.

Dr. Mary Shackelton: Exactly. They can have low IQs. So that's when they first discovered how important thyroid hormone was in prenatal development and that it definitely affects the IQ of the baby, which is so silly these days. We should never have that happen.

Dr. Wendy Myers: Yes. Well, Mary, this is amazing information, and so I wish I'd had this information prior to my getting pregnant as well, but my getting pregnant started this whole journey of this whole website, learning about this stuff when I was trying to have a baby. So thank you so much for your contribution today. And why don't you tell us a little bit about your website and your book and where we can learn more about you?

Dr. Mary Shackelton: Okay, great. My website is maryshackleton.com, and on that website, you'll find a course, a preconception course, which is a four-week module that will help walk you through. It's a companion to the book, and it will walk you through how to avoid these exposures on a daily basis and how to clean up your life. But I really want people to give themselves a good period of a year to do this. Even though the course is four years, it walks you through. So maryshackleton.com. You can find my book, you can find my course, and my Instagram is Dr. Mary Shackleton.

Dr. Wendy Myers: Okay, great. Fantastic. Well, everyone.

Dr. Mary Shackelton: Wendy.

Dr. Wendy Myers: Yeah, thanks for coming on.

Dr. Mary Shackelton: Good to meet you.

Dr. Wendy Myers: You too. And everyone, thanks so much for tuning in to the Myers Detox Podcast, where I try to bring experts from around the world to help you upgrade your health and help you find those little pieces of the puzzle that you're missing in your health journey and upgrade your health. So thanks for tuning in, and I'll see you on the next podcast.