



Episode 569: Gary Kaplan on Brain on Fire:  
How We Get Sick, Why We Stay Sick, &  
How We Recover

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Katie: Hello and welcome to the "Wellness Mama Podcast." I'm Katie from [wellnessmama.com](https://wellnessmama.com) and [wellnesse.com](https://wellnesse.com). That's wellnesse with an E on the end. And I'm here today with Dr. Gary Kaplan who's the founder and the medical director of the Kaplan Center for Integrative Medicine and the author of "Total Recovery," a revolutionary new approach to breaking the cycle of pain and depression.

He's considered a pioneer and a leader in the field of integrative medicine, and he's one of only 19 physicians in the country to be board certified in both family medicine and pain medicine. He's a board-certified medical acupuncturist and has worked with the National Institutes of Health to establish acupuncture as a medically effective treatment for a range of chronic health problems. He's also studied and practiced osteopathic manipulative medicine, emergency medicine, and herbal medicine.

In response to growing numbers of his patients presenting with heavy metal toxicity, he received a certification in the science and practice of chelation. And in 1985, he created the Kaplan Medical Center to offer patients suffering with chronic pain and illness a more effective model of care.

And he also has a new book called "Why We Are Still Sick," which I will link to in the show notes. We talk a lot about that today, about bringing on fire, how we get sick, and why we stay sick. We go deep on the immune system, autoimmune disease and what contributes to chronic immune system dysregulation, and why not addressing the underlying issues will make recovery difficult or impossible.

We go deep on lots of different causes and solutions, things to avoid, and things to try. And we go deep on diet and sleep, water hydration, fasting, testing, what to look for, and if you're not getting results or you're not getting a diagnosis, some of the reasons that might be the case. So lots of directions in this one, he is a wealth of knowledge. So without waiting any longer, let's join Dr. Gary. Dr. Gary, welcome. Thanks so much for being here today.

Gary: Katie, thank you for having me on the show. I'm delighted to be here.

Katie: Well, you are such a wealth of knowledge. And I know we have so much we can talk about today to hopefully help a whole lot of people. I think to start broad, there are a lot of people in my listening audience that have some form of autoimmune disease or immune system dysregulation. And so I want us to start broad and then tackle a bunch of specifics. But to start us off, will you kind of give an overarching definition of autoimmune disease?

Gary: So autoimmune disease is when a piece of our immune system called the acquired immune system, which builds antibodies, starts to make a mistake and attack our own body. So initially, that system gears up to go attack a bug, a virus, COVID, Lyme disease, strep, and then what happens is, in the process of gearing up to do that, it gets confused, and then it starts mistaking our own tissue for the problem. Specifically, it can attack the brain.

Now it can also in rheumatoid arthritis, you see it where it attacks the joints, in lupus where it attacks blood vessels. But the immune system now is the problem. The immune system is now attacking us and we need to make it stop.

Katie: Yeah, so it seems like there's some overlap of there are things that are considered autoimmune disease. There are also other things that can be happening with the immune system. Sometimes they can overlap and sometimes they can also be separate things.

Gary: That is correct. You can have problems as a result of the infection itself or other poisonings from toxins. But there's issue of what happens is...and this is what gets missed a great deal is that the immune system itself is now broken. And since the immune system is broken, if we fail to address that in addition to the thing that broke the immune system, we don't get a complete result. In fact, we leave people very sick and disabled.

Katie: Yeah, which seems to be a lot of what we see in conventional medicine is a lot of spot treating symptoms but not addressing those underlying causes. And this was actually a big part of my story. My listeners have heard me talk before about I used to have Hashimoto's, and it took me a long time to get an actual diagnosis and then a longer time to recover.

But what lined up with that is when my first child was born, I read that for the first time in two centuries, his generation was gonna have a shorter life expectancy than their parents. And in this article, they talked about the rise of all these...obviously, the big killers of cancer and heart disease, and diabetes, but also all these autoimmune conditions. And we're definitely seeing a statistical rise in these. Why do you think right now we're still seeing these rise so rapidly?

Gary: Well, it's an excellent question and an extremely important one. There's a variety of things at play. Genetics sits at the basis of everything and the genetic risk in terms of this. But genetics is which you might become not necessarily what you will be. It's epigenetics, it's the environmental factors that decide which genes get turned on or turned off. And certainly, we're now seeing a rise in autoimmune disease.

I was reading an article yesterday talking about air pollution, air pollution being one factor that's challenging the immune system and causing it to start turning on us. We have a variety of toxins in the environment in addition to everything we're breathing, okay. But there are problems with lead which is a significant problem in perhaps as much as 40% of the water supply in our country.

So lead poisoning is a significant problem. We can also get lead from paints, but the lead from paints is when you sand them down and you aerosolize them. It's not from the paint being just on the wall. You can also get problems with mercury toxicity.

Now, I have a 14-year-old girl who comes into my office who lives in McLean, Virginia, okay. McLean, Virginia is a fairly well-to-do community and it should not have problems with getting mercury toxicity. But this young lady will only eat tuna fish sandwiches for lunch every day. And her mother, thinking she's doing a completely fine thing, is making her tuna fish sandwiches every day.

She ends up with mercury toxicity. Why? Because the FDA has said that pregnant women should not eat more than two cans of tuna fish a week because of the amount of mercury in the tuna. All right. Well nobody should be eating tuna fish if that's the case because any amount of mercury is horrible for us.

So we have poisoned the nest. We have coal-burning plants, we've dumped tons of mercury into the upper atmosphere. This rains down into the oceans and then it feeds up the food chain so that the top feeders, the sharks, the tuna fish, other large fish, sea bass in some cases, become a problem in terms of mercury toxicity. And so they've concentrated. And so we have to be very careful what we're eating. I have seen people who have mercury toxicity thinking they're eating very healthy because they're eating sushi and indeed, another problem, right?

There's also an interesting problem that's occurring with water-damaged buildings. And so water-damaged buildings become infestation places for mold, mold toxins, that is the chemicals that mold secrete while they're trying to protect themselves from other things destroying them, happen to be very poisonous to a percentage of us, about 20%.

And those individuals end up with...it interferes with their brains, it interferes with their immune system. And so it damages both of those things and so it can create problems with focus, concentration, and sleep disturbances, and generalized aches and pains coming from the toxins that you're getting exposed to from this.

Another thing that we have to pay attention to is our diets in general. Basically, the gut microbiome is our second brain, okay, and so this is this collection of DNA and RNA from bacteria and from mostly bacteria, but also from parasites and from molds that sit in our gut. And the health of that helps determine the health of our gut. And the health of our gut determines the health of our brain. So if your gut is unhealthy your brain is unhealthy.

And so you need to make sure that your diets are good. And again, this becomes a challenge, right eating foods that are not processed, eating foods that don't have molds in them. For instance, coffee frequently has a lot of mold in it. So finding mold-free coffee becomes a challenge.

And so we think we're doing the right thing sometimes when in fact we're not, because what's labeled organic isn't necessarily organic. And a lot of the foods that we think are good for us if they're not organic...kale, for instance. Kale is a great food except that it's also a hell of a chelator, meaning that it sucks up heavy metals

from the earth. So if it's not grown in the right environment, it's filled with heavy metals and you're eating these, right?

We have GMOs in this country, Genetically Modified Seeds. The purpose of that is to make the plant resistant to the herbicides and the pesticides that we use on them so that we can spray this on, get rid of the weeds, get rid of the pest, and increase crop yield. Well, that does a good job of doing that, except what it also does is the plant takes up the herbicides, the plant takes up the pesticides, and the next thing you know it's in your Cheerios because it doesn't get processed out.

And so we're now being constantly bombarded with all of these chemicals that we had never seen before, that things it turns out are not good for us. And that's setting up the immune system to be weakened and that's setting up the immune system for when an infection comes along that can break the immune system and then it starts attacking our cells. So autoimmunity is the acquired immune system, one part of our immune system that makes the antibodies, having decided to make antibodies to our own body, our own tissues.

Katie: One follow-up question I know we will get is are there any seafood sources that you consider safe? For instance, I love sardines. Are those ones that you would consider generally safer than tuna?

Gary: Absolutely. Sardines are good. Mackerel is good. The lower end of fish...The Dirty 12, I believe is what it's called, or Dirty Dozen, is...there's a website that lists the type of fish that basically you should be avoiding. Salmon is still pretty good. Occasionally we see problems with that, but salmon, for the most part, is a good fish to eat. Trout, you have to be a little bit careful. Again, it's a top feeder in freshwater, and so that can concentrate metals.

It's a problem. I mean, we have done lots of damage. And so, we want sustainable fishing and we want perhaps a step or two down from the top feeders because they'll have less mercury.

Katie: And then I've also talked before about things like the tremendous rise in the amount of plastic that we're exposed to compared to one or two generations ago. Things like processed vegetable oils, which didn't exist in our diet, or certainly didn't exist in our grandparents' diet in the amounts that we see them today in literally everything. It's become so ubiquitous.

Gary: Oh, Katie, you're absolutely correct. I mean, it's...and we don't even understand what's going on with the plastics. We're now finding that some amount of plastics is in almost everybody, the small, little tiny beads, but we don't know what that's gonna mean. It can't possibly mean anything good. It doesn't belong there, right? So that's a massive problem and we do have to... You know, we've got our recycling efforts. We're not taking good care of our planet, and as such, our planet is gonna revolt on us.

So we have to do things to really be conscious about our environment and to do what we can to protect the environment and quit polluting because it's killing us. You know, George Carlin many years ago made the statement. He was a comedian, who said, "You know, all these protests about save the planet. The planet is gonna be just fine. It may not have us on it anymore. We may not be fine, but the planet will be fine. It will go on. It tried dinosaurs. Dinosaurs didn't work out. It tried us. We'll see if we work out." But we have the power and we have the ability to control whether or not we're gonna continue as a species on this planet by being proper stewards of the planet."

Katie: Yeah, such a good point. I read recently, actually, that they now estimate that every human consumes on average about a credit card's worth of plastic per week, I believe, which is absolutely insane to think about.

But you're right. I had my son on this podcast a couple of years ago when he wrote a cookbook and I asked him a question about the environmental stuff. And he said, "Mom, you're asking the wrong question. It's not whether or not we're gonna save the planet. It's whether or not it lets us keep living here." And I think when we reframe it that way, hopefully, we can take it more seriously.

Also, in your new book, you talk about something called a new class of autoimmunity, and I wanna make sure we get to touch on this. Can you explain what you mean by that?

Gary: Absolutely. So we've been...you know, the classic autoimmune diseases are rheumatoid arthritis, Sjogren's, Crohn's disease, and ulcerative colitis. But the fact of the matter is, there is a whole new class of autoimmune diseases. And we've been thinking about these diseases wrong. They're chronic fatigue syndrome, they're fibromyalgia, chronic pain syndromes, they're post-treatment or chronic lyme disease, they're post-COVID syndrome, and there's things like chronic depression, bipolar depression, chronic anxiety disorders.

A lot of these are all a result of inflammation on the brain and they're a result of damage to the immune system that has caused the brain to remain inflamed. So they have become the new autoimmune diseases.

And of course, we have in the kids, the PANS/PANDAS, which is the pediatric acute-onset of neuropsychiatric syndromes. And they're horribly named, by the way, because this is not...the manifestations of these things are obsessive-compulsive disorder and depressions and suicidal ideation and behaviors. What the reality of the matter is, it's not a psychological problem, it's a consequence of a brain on fire. And so now what you have is all of these activities.

These are all symptoms. There's difficulty and focus and concentration, there's depression, the problem with sleep disturbances, the problem with the behavioral disturbances, anxiety disorders. All of this stuff is expressions of inflammation in the brain. And what we need to do is back up and say, "Okay, why is the brain inflamed?"

I'll give me one classic example is I had a young man who came into my office who is suicidally depressed, not responsive to any of the antidepressant medications. And they brought him to me because I'm a brain inflammatory guy, right? And so I start working him up for potential causes of brain inflammation. And in his case, he had celiac disease. And in about 15% of cases of celiac disease, it will only present with neurologic problems, not with problems with the gut, bloating, gas, because celiac disease is gluten intolerance and not tolerance. It's an autoimmune disease to gluten.

And so what happened to this poor kid is that he had been told he was crazy. He had been told that he had a psychiatric problem. He had a psychiatric problem in celiac disease. And so, when we treated the celiac disease, we took him off all gluten, we did stuff to repair the gut. When we did that, a year later, everything is fine. He's off all antidepressants. He is 100%. I have seen him now for over a number of years and they've remained patients of mine, and he checks in once a year. He's doing spectacular.

The problem is we're not thinking about this stuff. And the problem that we talked about a little bit before the show is this business of not being seen, heard, or respected. And a lot of people, especially women, especially women, unfortunately, is you go to the doctor, and the doctor has got five minutes to talk with you and they're not paying attention to you. They're not hearing you. They're saying, "Oh, everybody's tired, everybody's got a couple of aches and pains, everybody's got..." And they're not listening to you.

And so you're not being seen, you're not being heard, and you're not being respected for what's going on. And it's so important that we become our own advocates in the process of this because too many physicians are practicing medicine by the insurance companies' opinion on what should be practiced, and not practicing medicine by what patients need.

And you ran into that yourself with your own problem. People were not paying attention to you. Doctors were dismissing you and they were telling you essentially you were crazy. You were not. You were very sick. Bad on us, and that has to stop.

Katie: Yeah, I agree. I think you're right it does seem to happen more with women. And I hear from a lot of women who have kind of had that almost like medical gaslighting, where they're advocating for themselves and even asking for specific tests and being told they don't need it because they're fine. And I think that...it also boggles my mind to realize women weren't even included in scientific research until 1993, which I get that we're more hormonally complicated and we're harder to control for variables, but that still boggles my mind.

And I think we've talked about...and I know there are many, many others, and we could spend eight episodes just talking about all of the factors that contribute to this inflammation and to this brain-on-fire. I know people are also gonna wanna know what can we do about it.

So I would love to start general here as well. Are there specific things that are almost universally applicable to help kind of avoid this brain-on-fire situation or help it if it's already there? I know there's also gonna be, of course, a lot of nuance and personalization within, but are there kind of good general guidelines for starting?

Gary: Yeah, the good general guidelines are in fact the good general guidelines for being healthy. You have to watch your sleep. It's critical that you're getting seven to eight hours of sleep a night, all right. We know that failure to do that results in damage to your brain, we know that it can cause hypertension, we know that it can cause obesity, we know that it can cause diabetes. So you've got to be getting adequate amounts of sleep. Sleep is crucial for normal functioning of your immune system and normal health of your brain. So that would be one.

Second would be exercise. Exercise is probably the single best anti-inflammatory we have for the brain. And exercise is both aerobic exercise and weights, so doing muscle conditioning and toning. The 10,000 steps. Ten thousand steps came from not a scientific study, but the name of the company that developed one of the early trackers was a Japanese company.

So 10,000 steps is not based on science. We know that getting at least 5,000 to 6,000 steps in a day is good for your health. Now more is better, but 5,000 to 6,000 should be minimally what you're shooting for will help maintain health.

So diet, which we talked about, shopping organic as much as possible. Reducing the amount of grains in your diet is actually important also. So some grains are okay, but maybe not a lot. And eating the colorful diet, the rainbow, lots of fruits, lots of vegetables. Again, we want organic, though. So those are the basics.

But otherwise, you wanna make sure that the water you're drinking is healthy water, that it's not lead in the water. And water could be tested. You wanna make sure that there's not water damage to your building, or if there's been water damage to your building, you get it tested for mold toxins, because that can be incredibly debilitating and make you sick on an ongoing basis.

And then there's the issue of infections that have been missed. And the book talks a lot about this, about people who are still struggling with Lyme disease. Another example is a young woman, a teenager came into

my office when she was 10 years old, developed obsessive-compulsive disorder, developed problems with depression.

She was treated as a psychological issue, given antidepressants, got worse. Then she developed POTS, Postural Orthostatic Tachycardia Syndrome. But initially...so this is where the heart rate goes firing up in order to keep your blood pressure normal. Initially, that's dismissed, and then later she finally gets that diagnosis. And this is going on over years, and she gets another set of antidepressants. She starts cutting behavior. She ends up hospitalized psychiatrically.

Now imagine, okay, six, seven years of this young woman's life and she's been told she's been crazy. Okay. And she's got sleep disturbances, there's a whole array of stuff going on with her. I see her. My workup of her, again, is from what is potentially a neurological problem. What it shows is she has chronic lyme disease, never diagnosed, missed. She has mold toxicity, never diagnosed, missed. And testing for antibodies in her brain using the Cunningham Panel, she has essentially PANS, the pediatric-onset of an autoimmune disease.

So she has an autoimmune disease that is attacking her brain. Her brain is on fire. This poor child has been treated completely inappropriately. She has been told for years she's crazy. She's not crazy, she's sick. And now aside from all of what we have to do in terms of repairing her immune system, repairing and getting rid of the infections and getting rid of the toxins, we have to deal with the fact that her self-esteem is in the toilet because she has been told by doctors for years that she's crazy.

And I'll also tell you that I talked to her psychiatrist and when I had this conversation with the psychiatrist, the psychiatrist could not have been more dismissive of me and thinks I'm crazy, because not about to see what in fact is going on. And this is criminal. This is criminal. We are leaving an unbelievable number of kids sick because we're failing to ask the right questions. And that's why I wrote the book. This has to change.

The book is a step-by-step process for helping identify what testing to do. Many of the tests you can get access to on your own. I have no financial connection with any of the labs, I've told in the book. This is just what we do in the practice. Because there are probably about 20 million people out there struggling with this and there's only one of me.

And so how can we get this out so that they've got a step-by-step approach? The book is extremely well researched, it's not based on my opinion, it's based on the research. And there's well over 1,000 articles that I researched in the process of writing the book, of which we cited I think about 300 or 400 because they were getting too long in terms of the reference section. But this is a solid piece of information.

The other thing is we talked about advocating for yourself. You need to find a doctor who will listen to you. You need to find a doctor who's willing to think a bit outside the box, because if the testing is normal and you're not normal, it means we haven't done the right test, and that has to be fixed. You have to be paid attention to, you have to be respected, you have to be treated appropriately.

Katie: Yeah, and with the caveat of I've worked with a lot of doctors and I do believe doctors go into it with a great heart and the intention to help people. And I never wanna speak poorly of doctors. I think we have a broken system and that's been obviously well talked about in many, many articles.

But I also say on here often, we are each our own primary health care provider because we're the ones controlling the inputs and the daily things happening to our bodies. And if we aren't coming to the table with more of a vested interest than the doctor in getting better, we can't expect the doctor to solve our problem for us.

But that said, when you're working with a practitioner who is knowledgeable, who's willing to do the test, and who's willing to listen, I think that's the sweet spot where those really good outcomes happen, because you have two people invested and one with specific knowledge and that's when we really see good results.

I'm glad you also mentioned, post-lyme disease or chronic lyme disease. And also now we have post-COVID and we're just beginning I think to see some of the long-term problems. It seems like there could even be an autoimmune connection with some of the post-COVID problems going on. But there does seem to be a rise in these chronic conditions as well.

And to your point, these are ones that seem like they have to be treated at the root cause level. We can't symptom-treat these things and expect them to get better. Even mitigating the symptoms in those cases doesn't seem really that effective. And I would assume that same approach. You'd wanna tackle these foundational things of sleep and diet, and then get specific on the testing and find out what's actually going on.

Gary: You're absolutely correct. And the problem has been that for too long. We've been treating the symptoms, but we have not been treating the basic problem. The end result of which is we're leaving people disabled, we're leaving people in a great deal of pain and fatigue, and we've been far too dismissive of them.

I teach at Georgetown, so I've seen medical students all the time. I work with my colleagues. I believe that people go into medicine with the absolute best of intentions. I believe they wanna help people. I believe what's also happened though is the system is horrifically broken, that doctors are increasingly being herded into thinking and treating like the insurance companies want us to think and treat, which is not necessarily what's in the best interest of the patient.

The other part of the problem is the cost of medications and a failure of transparency. I have watched drug prices rise randomly to stupid heights. I have one drug that we use, which is literally made for, which is \$12,000 now a month, all right. That same drug five years ago was maybe about \$100, \$200 a month. It just...magic happened. So we have to...the system is very broken. There's no transparency, and we need to fix that.

And docs then turn around and say, "Well, I can't prescribe you this medication because the insurance company won't pay for it." And you're forced into giving something that you actually didn't intend to give. And this is a problem. So the system is very broken. I think there's a lot of well-intentioned people in it, but I think that there's a lot of docs who are now getting burnt out and getting fed up with the system because it's so much work just to deliver the care that we wanna be able to deliver to everyone.

Katie: And I'd also love to circle back and talk...you mentioned gut health being obviously a very important factor within all of this. And people have probably heard things like the gut is the second brain and how the microbiome affects all aspects of your physiology, and how we have more bacterial cells than human cells. I know there are some really fascinating studies. I've been following some on polyphenols and how those actually feed your gut bacteria. And now they're looking at the metabolites of this and how it could have implications in healing for a lot of people.

But any other gut-specific advice? It would seem like there's the category of remove the bad stuff that's actually actively harming your gut bacteria, but then there's also something of how do we nourish and heal our gut bacteria?

Gary: So it's an excellent question and a complicated one. I think the idea of, you know, obviously a good balanced diet first and foremost, right? But I think we're also in an age where we need to be taking supplements because we're not getting what we need in our normal diets.

So using a good general probiotic can be extremely beneficial in terms of helping keep your gut healthy. Using prebiotics, which are non-soluble fibers, can also be extremely beneficial in helping keep your gut healthy.

I think that periodic fasting is extremely beneficial in keeping all of you healthy because it helps your mitochondria as well as your gut. So intermittent fasting sometimes, and that can be done in a number of ways. That can be done by a compressed eating schedule meaning that you're only eating for six hours a day. Work up to that, don't just do that immediately. But it can also be done with a day or two days of fasting a week separated out, make sure you're drinking plenty of water. So we don't want you fasting without water.

And a lot of times a lot of the things we're eating, by the way, are because we're dehydrated. And so what's happening is, we think we're hungry when in fact what we need is water. And we need to make sure that we're getting plenty of water a day. The amount of water you need a day, however, is somewhat controversial, because the eight-ounce glasses a day is actually made up. Each individual depending upon what they're doing...if you're feeling thirsty, you're now dehydrated. So you wanna stay a little bit ahead of that, so you want to be pushing fluids pretty much all day long, especially if you're working out.

Katie: Yeah, that's a great point. What are your thoughts on electrolytes as well? I know this is something that's entered the conversation as more of a consideration. And athletes see people who get almost, like, too much water with not enough electrolytes and there's negative consequences of that as well.

Gary: Yeah, you can actually get water poisoning. So that's where we give you lots of water but you're not...that'll happen in long-distance runners, marathoners, where they're out sweating very heavily, losing lots of electrolytes, and they're just drinking water to replenish that fluid. They dehydrate themselves by virtue of losing electrolytes.

So taking electrolytes and balancing electrolytes is extremely important. There's a number of ways that that can be done, but again, it depends upon... If you're working out day in and day out and you're not excessively sweating, making sure that you're just drinking your fluids and eating properly should actually keep your electrolytes in balance.

Katie: And you also mentioned fasting, and I'm so glad you brought that up. I feel like this was a really pivotal thing for me when I was in recovery and just giving my gut time to rest and going kind of into recovery mode. But any specific guidelines around fasting?

I know there's some evidence that maybe women need to be a little bit more careful, especially with longer-term fasting. Like, as an example, I currently like to eat in a sort of time-restricted window and eat within about an eight-hour window during the day. But I'll also occasionally do longer water fast. Do you have anything that you see work particularly well when it comes to fasting?

Gary: So it's an excellent question. And it's one in which there's more and more scientific research showing how important it is that fasting can be beneficial in terms of keeping us alive longer and keeping us healthier, longer. So a single day of water fasting a week can be very beneficial. Typically, you wanna pick a time that's going to work for you.

If you're gonna do restricted eating, you have to be careful in terms of gradually working into it, and not just starting it one day. So maybe what you do is you start with 12 hours and then you work it down to 10 hours

and then you work it down to 6 hours as you're doing. So that can be very effective. And today the evidence is that that is as effective as complete fasting on any given day. So fasting is a great health tool, a great health habit.

Katie: And then I also love to bring up the point of the nourishment side because it's been said before that Americans are overfed and undernourished. And I think often in, like, the weight loss and health conversation, we over-concentrate on macros and calories and don't talk enough about the micronutrients and the nutrient density of food.

So a reframe I try to do is to reframe of how can I get the maximum nutrient density per volume and calorie of food versus how can I restrict calories and end up eating all these empty calories that have no nutrition whatsoever. But any guidelines on that? As an example I see especially in women, there tends to be an under-eating of protein from clean sources, and often an under-eating of actual nutrients in general, even if they're consuming enough calories.

Gary: No, you're absolutely correct. Basically, the rule is the more processed the food the, less nutritious the food. So we should be eating fresh foods and we should be eating more organic food as much as possible, and that will generally take care of the problem. Again, eat the rainbow. Again, make sure you're getting adequate protein.

Protein can be from plant sources such as avocado and beans. But if you're going to eat plant sources, you want as much organic food as possible. So, fish is fine but again, you're gonna have to be picky about which fish you're using. You can even eat steak, but I would encourage organic meats as opposed to just the normal stuff bought off the shelf.

We have to be smarter these days. It's hard. It's not just a function of we can't rely on the fact that the food we're getting is nutritious and healthy, we have to pay attention to where it was grown, how it was grown, and make sure we're being smart consumers.

Katie: And in your books, you also use the term epigenetics, and I feel like this is an often misunderstood term, but it really does have some important implications for people who are chronically ill, especially. So can you kind of explain what epigenetics is? People have probably heard that word, but explain what it is and how we can use our understanding of that to our advantage?

Gary: Absolutely. Epigenetics is literally defined as on top of the gene. So epigenetics are anything in the environment that subsequently turns genes on and turns genes off. So if you think about celiac disease, about 30% of the population is a genetic risk for developing celiac disease. But of that group, only 3% will ever actually have celiac disease.

So it's what has happened in the environment? Has it been infections? Has it been toxins? What other factors have intervened that have caused those genes to be turned on and then now you've got celiac disease, whereas the other 97% of people who have the genes don't end up with celiac disease?

So the other thing, by the way, about celiac disease in particular, the average age of diagnosis of celiac these days, okay, a genetic disease supposedly, is between 40 and 60, okay. I have diagnosed celiac disease in a 65-year-old man who had no idea whatsoever that he had the disease. Failed a diagnose beforehand, and truly changed his life when we made the diagnosis.

So this business of epigenetics is what environmental factors have come along to put you at risk, or actually could also do good things in terms of turning genes on and off, to keep you in your most vital health. So it's the environmental impact on our genes.

Katie: And then I think, at least from my firsthand experience, another I think I would argue one of the most important pieces of this conversation is about the mental health side. And I think this is the piece I personally missed for a really long time, because I was focused on diet and I had a spreadsheet of supplements, and I was doing all the lab testing. And I was also completely ignoring past trauma and my own mental health and thinking I could just power through and, like, force myself to be healthy by only doing the physical stuff.

And I'm excited to see that there does seem to be more awareness growing about how obviously, we're not just physical beings, and the mental health side is very, very important. But I'm sure you see this every day in practice as well. So just start general there. Can you just kind of walk us through the connection of our mental and emotional health to our physical health?

Gary: Yeah, Katie, you're absolutely correct. And it's such an important risk factor. And it is one in which it is dismissed, unfortunately, way too frequently by the medical profession. If you're a victim of child abuse, okay your odds of developing an autoimmune disease and being hospitalized with it are 15% higher than the rest of the population. Your odds of developing heart disease are 20-25% higher than the rest of the population. Your odds of developing diabetes are 20-25% higher than the rest of the population.

The fact of the matter is childhood abuse has long-term physical consequences for anybody who has sustained this kind of abuse, this problem. Now, what has to be done then is it's not...well, no, it's not all because of the abuse, you have to treat the abuse as part and parcel of the entire picture of what's going on.

So yes, the abuse needs to be treated and needs to be addressed, but you don't just dismiss everything else because of the abuse. You have to understand that the abuse may have weakened your immune system, may have set you up for other diseases, and then we need to be able to address those.

So treating the abuse, there are trauma therapists. In our practice, we have a therapist who works hand in glove with us. She specializes in treating trauma. There are techniques such as EMDR and other techniques that we can use in order to help deal with the trauma.

There's also the problem, as I alluded to with this young woman who had PANS, is the fact that she's been traumatized by the medical professionals. She has been told she's crazy, and we also have to deal with that in terms of helping restore her self-esteem and getting her again to be able to trust the medical community, because, in fact, the diagnosis got missed and she was horribly abused, if you will, by the profession.

So I see this all the time. And, you know, I used to...so I served on the Advisory Committee on Health and Human Services for four years for Encephalomyelitis/Chronic Fatigue Syndrome. And the stories we would hear of people who were testifying, the abuse that they had sustained at the hands of the profession was just terrific. They've been told they've been crazy, they've been told they were faking, they were told they were just trying to get on disability. And it couldn't be further from the truth. The reality is they were very, very sick and really struggled.

I have a very dear friend, Sarah Remey, who wrote the book, "Women of Mysterious Illness," I think that's...that book should be required reading in every single medical school in the country. It's her journey of going through chronic illness and what she, unfortunately, ran into with the medical profession in the process of trying to find answers for herself.

So this business of mental health goes hand in glove with what we're talking about. It has problems at the inception in terms of child abuse of childhood that can set you up for other diseases. This is an epigenetic issue, okay. But it also has issues later in life when you're subjected to traumas, which can also have long-lasting implications in terms of damage to your health.

And so, we have to...I think the biggest mistake we made in medicine is we've divided mental health off from conventional medicine. And we say you either have a psychological problem or you have a physical problem, which couldn't be further from the truth, because it's hand in glove. And we have to think of treating the whole person and all of the factors involved and then we get a better outcome, then we actually have potential for total recovery.

Katie: Yeah, 100% agree with you. I think it's very much a both and it can't be an either-or. And I think in my case, had I not already done the foundational physical things and reduced inflammation and was eating very, very clean I don't think that just fixing my trauma would have fixed it. But I think because I eventually did both that's when I really saw results.

And I think before that, due to the trauma, I was physiologically living in sympathetic dominant state all the time and I didn't feel safe in my own body. So no amount of, you know, brightly colored vegetables or supplements was going to undo my trauma. But that said, just working through the trauma, and then still, if I was eating junk, it wouldn't have been as effective either.

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Really glad you brought up medical trauma as well, because I hear from women, especially who go through a lot of this, and it's even related to things like birth trauma. And I think it circles back to your point at the beginning about it's not fair and it's a tough job but we do have to be our own advocates in this.

And I encourage people to think of doctors as people you're hiring. And if you keep that in mind, if they're not actively fighting the service you're hiring them for, fire them and get a different one. My biggest example of that is I had...one of my children was breech. And at 37 weeks, the doctor said, "I'm not gonna let you deliver naturally." And I said, "Okay, well, then you're fired." And I walked out of there, and I found a new practitioner who would catch a breech baby.

But most people don't even realize that's an option. And many people don't think that this is someone you're hiring. You can fire them and you don't have to listen to them.

Gary: Katie, you're 100% correct, and I couldn't have put it better. You hire us. Our job is to work for you. We're not allowed to be talked into doing bad medicine, okay, but we are required to listen to you, we are required to do our absolute best for you. And if we're not doing that job, and you're not getting the answers you need, absolutely fire us.

And I tell my patients that all the time I remind them. They get confused about the power dynamic, because you go to your physician, the doctor is supposed to know everything. We don't know everything. We know a lot of things. We can be very helpful, but there's a lot we don't know and a lot we're still learning.

And so, you need a doctor who will be honest with you, who will say okay, I don't know the answer to that, but let me find somebody who might know the answer to that and bring in a consultant and bring in other people who can put together a team that can help you recover your health, because you're the one we're here for. You're not here for us we're here for you.

Katie: Yeah. And that's actually one of the things I respect the most when I hear a doctor say, "I don't actually know but, like, let's find out together let's find someone else who can tell us." And who doesn't just assume to have all the answers. I have so much respect for that. And then I'm willing to be invested and do the work too and obviously to find those results.

And I feel like we have touched on so much and there's still so much in your book that we haven't even barely touched on. Are there any other key points, especially from your book and maybe talk about your book a little bit, before we start wrapping up just to make sure we get all the really important points in?

Gary: One of the things I wanted to touch on that was very important that you mentioned is this business of integrative medicine. Integrative medicine is about the best of using functional medicine and conventional medicine. It's not throwing out the baby with the bathwater, okay. So this business of balancing your gut flora and balancing your hormones is extremely important.

But we also have to make sure we've made the proper diagnosis. We have to make sure that we are integrating all of this stuff together, because sometimes the hormonal dysfunctions are downstream problems from when a brain is inflamed. And the gut problems may be a downstream problem from the gut, the brain is inflamed, and the immune system is off. So we want to make sure that we're doing the best of everything we can in order to treat you.

The book is about redefining...it's taking all of these other diseases, this chronic pain, chronic depression, chronic fatigue syndrome, these post-treatment lyme syndrome, and saying, "Look, wait a minute, wait a minute. It looks like in a lot of these conditions what's happened is an infection occurred and then what's

happened is your immune system broke. And now what? Your immune system is trying to fight off the infection, but it's also attacking you."

And so we have to fix both the problem, the bug that came into play, anything that's damaged the immune system beforehand, and the immune system itself. The beauty is we have a lot of tools to do that, and we have a lot of new diagnostics we can use in order to better understand why you're sick and how you can recover.

So why you're sick is about a path forward. It's about hope, it's about a way for you to understand what's wrong with you in a way that your physician may have missed, and it's a way to help educate not just yourself, but your physician on how to get better. It's all the testing, step by step approach. It's a self-help book. It's how do we get better. So it redefines these diseases, but it also helps you understand what you need to do, what you can do today, in order for you to start recovering, in order for you to regain your health.

Katie: And I'll make sure there's a link to the book as well. I know your online presence is all over for your clinic and for your work and you have so much education available for people there as well. All those links will be in the show notes at [wellnessmama.fm](http://wellnessmama.fm) for any of you listening while you're on the go.

And lastly, I would love to know...we've talked so much about all the different conditions that you help with in your work as a practitioner. I would love to hear on a personal level, what kind of your own 80/20 non-negotiable parts of your routine are, whether it's certain daily practices or supplements you're a big fan of, or what are your own non-negotiables?

Gary: So, meditation. Every day starts with meditation about an hour. I do a combination of Qigong as well as breathing exercises. That's a non-negotiable. I have to start every day doing that. Getting exercise every day, in addition to that, is also a non-negotiable. My diet is not negotiable. There are certain supplements that I take which include probiotics, which include fish oils, and which include vitamin D.

I make sure my vitamin D levels are normal. Vitamin D level normal, by the way, should be about 50 to 80 nanograms per deciliter not 30 because I want optimal functioning immune system. So I actually got a lot of things that are pretty much non-negotiable for me to make sure I also get enough sleep, okay.

And by the way, I have sleep apnea. And so another non-negotiable for me is I don't go anywhere without my CPAP. I do not attempt to sleep without my CPAP because it has made a massive difference in my life. Failure to diagnose sleep apnea, that's where you actually stop breathing during the night. And about 5% of the population does. That'll take 10 years off your life, that will cause hypertension, it'll cause diabetes. And so for me, a big non-negotiable is I don't sleep without my CPAP

Katie: Awesome. Well, this has been such a fun and informative episode. I know how busy you are and how many people you help. And I'm extremely grateful for your time and for all that you've shared today. So thank you.

Gary: Katie, thank you for everything you're doing. Thank you for sharing your story which is so important for other people to hear. And thank you for allowing me to be on the show today.

Katie: And thanks as always to all of you for listening and sharing your most valuable resources, your time, your energy, and your attention with us today. We're both so grateful that you did and I hope that you will join me again on the next episode of the "Wellness Mama podcast."

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