

The Rebel Nutritionist, episode 21: Gut health isn't sexy, but it may be the answer you're looking for

MERYL: Hey everyone your rebel nutritionist here. And today I am so excited to be interviewing Marie Van der Merwe, who is a premier scientist studying and researching all things, GI health, the gut microbiome. And we're going to talk about what that is today, why that's so important and why it's so important to understand the implications.

Gut health and its impact in our overall body. Because regardless of what you may think, it's more than just do I have a problem digesting my food. Do I have problems with going to the bathroom? Like constipation issues that nobody loves talking about? That we talk about all day long in our practice. And it's really about understanding why, why we, it, I may not need to eliminate certain foods why we may or may not have a problem losing weight impact of our own gut health on our own overall health, because we now know that our gut microbiome, which are all those good bacteria, bad bacteria.

And everything in between impacts our overall health in so many more ways than we could have ever imagined. So take a listen, because I am sure that this will be. It's enlightening and informative, and we'll definitely give you food for thought. When you think about your own health and how your gut health impacts that.

So take a listen. Enjoy. We'll see you soon.

MERYL: All right, welcome back. And today we're going to take a deep dive into one of my favorite topics. Gut health and the role of nutrition in chronic disease. So today on the show, I have invited associate professor Marie Van Der Merwe.

Well, we are so excited to have you because I see so many patients in my practice who are so surprised by the connection between chronic health care conditions and gut health. So we are going to take a dive in today and have you help us understand this. So first, tell us a little bit more about yourself, if you can, and how you got started in the area and why you think this is such an important area of study.

MARIE: So well, so just a little bit about me. I am South African and I came to the United States to do my education. So my PhD. Yeah. My post-doc and now I'm actually stuck here then being a faculty member here at the university of Memphis. But my background is actually not in nutrition.

My education, my formal education is not in nutrition. Right. Undergraduate was in biochemistry. So really to understand the biochemical reactions that happen within this amazing body that we have. And then I switched over for my PhD to molecular pharmacology because I was really interested in treatments.

And then I made another big switch when I did my first doctoral fellowship into bone marrow transplantation that you might say, oh my goodness, I have no idea why you would do that. But again, I was still very interested in cellular therapy. Which is really

what bone marrow transplantation is. And so, and doing that you really have to know immunology.

And so this is where my life hit the immunology field, and I really fell in love with this field. And then realizing that it's not just cellular therapies such as Bernard transmutation, but it is really these cells and their environment that they survive in that dictate many of our physiological states.

Okay. So basically what happens to these cells will drive what type of chronic diseases we will develop. And so luckily not being in the nutrition field, I then did get a position, a faculty position in the nutrition science program, which allowed me to use all these very kind of hardcore science.

Techniques and background that I have in a field that typically not always had the science it's only, but I would say the last 10 to 15 years, we've really kind of moved to the hardcore sciences into the nutrition field. And now our understanding of the little bits and pieces that you know, of physiology and how they interact with each other and how they interact with the environment, being the food that we eat and how that kind of dictates.

Health status.

Why the food we eat is so important

MERYL: Right. And I love, love, love that you made that point because I always talk to people, my clients, whoever I talk to, that food speaks to yourself, right. Food is information for ourselves and the kind of food, like you said, that we put into it is so important. And I think. That just gets lost in the translation of the whole, not, not for us.

We, we get that. And then those of us in the food is medicine arena get that. But I think the general population really gets lost in the fact that food really should be or the right kind of food. It gives ourselves the right kind of information to function properly. And if we're not putting in Whole foods that are healthy, that are going to be nutritionally supportive. Our cells suffer as a result and therefore our bodies suffer as a result.

MARIE: You know, one of the very first questions I asked my students at the beginning of almost every semester is why do we eat? Right, right. Why do we eat? The only reason we eat is to get the energy and how can I put it?

The bits and pieces of machinery that you use to actually make your metabolism going. That is why you eat vitamins. You know, they're, they're like the wheels and the gaskets and the things that go onto the car. So that is why we eat. There is no other reason, that hamburger and French fries do not have the things that you need for that metabolic program to be to run.

MERYL: Right. We need more, more of that louder. I'm agreeing with you, I'm saying the global, right. We need to get that information out there loud, but people actually listen. Right. So I love it. So thank you. And So obviously you, like me, we're both passionate about the work we do.

And I was, I was just saying how I'm just fascinated by the whole immune system. It's just amazing to me. So, let's take a dive in, yeah. And, really. Why has this topic become

so confusing? And I think people hear these terms and they're not really sure how to, I don't understand them or what to do with them.

What is the gut microbiome?

So can you explain, because now we keep hearing gut microbiome, gut microbiome. Can you explain what the gut microbiome is?

MARIE: Yes, I can explain what the gut microbiome is. So, the gut microbiome, so as human beings, we are covered in bacteria or microorganisms, I should say, not just bacteria, it's bacteria and fungi and viruses.

And we live in homeostasis basically with all these microorganisms that surround us and also are inside. And of course our intestinal lumen, the gut, right? The inside of our gut is really still the external environment. So I think people have to get that idea that the gut from the beginning of my mouth, to where everything is on the other side is really the external environment.

So that is also covered by bacteria. And we have a symbiotic relationship with them that have evolved over eons. And so the gut bacteria is a very specific kind of group of bacteria. So, we are populated all the way from your mouth to the other side. The most densely packed area, the most densely populated area of course is your large intestine. Okay. So we do have bacteria also all the way through your small intestine, but the large intestine is really where you have the largest populations of these gut bacteria. And so, I

mean, it's just like any other ecological site. If there is food for the bacteria there, the bacteria will thrive.

And the type of food that you put into that ecological site will dictate what type of bacteria will thrive there. And so if you feed it French fries, you will drive the growth of bacteria that typically not normally grew in that ecological site. And so your physiology, and this also means your immune system which interacts with that bacteria. You know, now there is a different group of bacteria that they really don't know if they're friend or foe, but just to get back to the bacteria themselves. So we have about, they, they use this, this term that there are 10 fold more cells in the microbiome, meaning that the biota, the gut biota that lives in the gut, then you have in your body.

So that means that genetic information that you have in your gut. Is much more than I carry around in myself. Right. And so they have, these bacteria have all kinds of capabilities that we did not necessarily have. For instance, they can break down fiber. We do not have the enzymes that can break down fiber or specific types of fiber.

So yeah. And so this is basically it's a group of bacteria. We have a symbiotic relationship with most of them, they have to be. Their numbers have to be how do I say have to be in the right ratio, the different populations have to be in the right ratio. And so this, we get to this idea of a diverse gut microbiome.

You'll hear this all the time, that the diverse gut microbiome. It's associated with health. The moment you have gut issues, depression, obesity, type two diabetes is when the ratio between the bacteria actually is kind of out of whack and you have a growth of

bacteria that again, that's not necessarily your health-promoting type of bacteria that should be in that ecological site.

And I, and I just want to kind of mention this too. This is because this is one of the fascinating areas for me that bacteria, they, for instance, will break down the fiber, right? You'd break down fiber and then they generate metabolites, right? So they actually have that input and then they have an output and those metabolized, we call them short chain fatty acids.

Those metabolites are things that we use. Some of them. We actually use for energy. Many of them are signaling molecules. They can actually signal to your immune system to make your immune system tolerant to that type of bacteria. So to say, okay, well, this is a good guy. It is giving me increased energy or other types of health, beneficial molecules.

So do not get inflamed, do not get, do not attack whenever this type of bacteria is there. So it's this constant cross-talk. Between the bacteria and the immune system

MERYL: Right. So they're having a whole other conversation that we don't even know about.

MARIE: No, absolutely. I mean, there is so much stuff going on.

MERYL: Right? Exactly. Like who's where, so you mentioned something that was interesting that I think people really want to hear more about, is that connection between

the bacteria and. Chronic diseases. And I think obviously things like type two diabetes and obesity, and I definitely want to touch on that, but I think one thing, especially in my practice that we hear, that I talk about over and over is I would like to get a better understanding of my client's microbiome when we do some testing and so forth for weight loss purposes.

Right. Because we know, and as you mentioned, so I would like you to elaborate a little bit, but obesity is associated with an imbalanced microbiome. So, can you elaborate on, that? I mean what is that conversation that the microbiome is having or not having, that leads, leads to contributes to, or prevents people from weight loss?

How does gut microbiome imbalance affect weight loss?

MARIE: So, everybody wants a magic pill, right? And so at the end of the day, I want to say, I'm going to give you this probiotic. And we're going to, we're going to change your gut microbiome, and suddenly you're going to be skinny. So the thing that makes that very difficult to do, it's the fact that all of us have a basic, your microbiome is almost like a fingerprint.

Right. My microbiome, even though I'm a healthy person, might not look like the microbiome of the person that's sitting right next to me, which is also a very healthy person. And so we all have probably about 116 different types of bacteria that live in your gut, but the 116 is not necessarily the same from one person to the next person. And so it's not, it's not easy to say my microbiome should be this for me to be skinny. , but again, it is more of the balance between the different types of bacteria that is

important for your health or your, and so it actually, it actually gets to the fact that. You know, this is why it's difficult to just say everybody does this and you will have the same outcome.

You have a different microbiome that interacts with the immune system that has a different genetic background that gives you a different outcome. And in addition to that obesity, the thing that we also have it's not just driven by the microbiome, that obesity itself, for instance.

So obesity, the inflammation that's coming from your adipose tissue. We're just almost completely independent from the microbiome, but the two things collide and it makes everything much worse and then leads to type two diabetes or all these other diseases.

So I don't want to just hand wave and say that there's nothing to do, but it's, it really is.

If You did not take a whole bunch of antibiotics, right. And wipe out certain species, if you can regrow by using mostly complex carbohydrates, many of these microbiota and get them back into the right ratios. The metabolites that they will make will be less inflammatory.

And that inflammation is what's driving a lot of the physiological changes that leads to type 2 diabetes, which makes your whole metabolism just not work. You know, it's like gears. I always think of metabolism like yours. I'm sticking like this. Thing's all in this gear and everything just kind of shuts down.

And so if you get it out, the metabolism can work again. I can optimally burn fat and I can use the energy that I have. But if you have all these inflammatory molecules floating

around, it kind of just is that pencil in the gear and it blocks everything else from functioning.

MERYL: And, and I love that description and that explanation, because I think people need to realize that.

That weight and inflammation and all these other things are, are really all connected to our overall health. And it isn't, oh, just give me the magic pill or if I just, I often hear, well, if I just diet and exercise. Yeah, why am I not thin? And why have I not lost weight? Why am I gaining weight, whatever.

And I always explain to my clients, it is much more complex than just that.

Why cutting out food groups isn't always the answer

MARIE: Absolutely.

MERYL: And now the more we dig in, the more we learn and The more we obviously are realizing that it's even more complex than we ever thought. So for that, that was a really, I like that explanation a lot. And I think if people can use that visual, maybe my gears aren't aren't as well loo lubricated or, or hoarded then it's, but that's what nutrition does and that's what food does.

And we'll get a little bit more into that. Cause I talk about. All of the root vegetables, the ones that generate butyric acid, right. That helps those short chain fatty acids. And I

think it's a problem. Cause people tend to say, well, I don't want to eat, we just completely cut out food groups because we want to lose weight.

And we realize we've just cut out that most, one of the most beneficial food groups that we could consume.

How intermittent fasting affects gut health

MARIE: Yeah, absolutely. I mean, it really is. You have to, I mean, and again, you have to pay attention to yourself and then kind of see the things that you're doing, the things that don't work. I mean, because for some people, something might work and then for the next guy might not, right.

And you know, so, but you know, to get back to this idea of gears I also do some kind of intermittent fasting work and some of that we've connected to the microbiome. So, and again, the idea of having a start, right, which is where your circadian rhythm, the biological clock you kind of switch it on and you have all these gears running.

And so when you eat at the wrong times and the wrong thing all of this just gets really uncoupled. Right. And it just doesn't make for an easy flow through this machine, you know? So yeah, it is so just to make, just to say that it is a very complex, that is a very complex machine and all the things that we do and it takes the time.

I think it takes time for things to go wrong. And then it takes a long time for things to get fixed.

MERYL: And we live in a society in a world. I think we want that quick fix, but go back for one second. When you said the circadian rhythm about turning things on, and then, because we talk because I talk a lot about sleep and how important sleep is and maintaining that circadian rhythm.

So, and then you mentioned something else and now I was, I was trying to remember, but it'll come back to me, but if you could touch on the circadian rhythm, because I think, again, people don't realize how important sleep is and why we talk about right. Why do you eat? Why do we need to sleep? You can touch on that and how that affects immunity and the gut microbiome.

MARIE: Yeah. So the circadian rhythm from us for those of people that do not necessarily work on this every single day, it's the 24 hour cycle that not just as all organisms on this planet actually go through, bacteria have a 24 hour cycle. And in the cycle we actually have a catabolic phase, meaning we break things down and then we have anabolic phase where we both think.

And again, these are all the part of your metabolic machine that's driving that. And so what we're seeing with people that do, for instance, shift work. So people that do shifts because they sleep during the day and then they go out to go work at night. And which also means that they eat at night.

People that do shift work have increased risk of diabetes and obesity, cardiovascular disease, all these diseases that we typically associate with food with not being in and

not eating the right food, basically. And so the circadian rhythm, how the circadian rhythm basically works.

We have a specific area in the brain that gets activated in the morning when I stand up and I see light for the first time that activates this whole metabolic pathway in my brain. And that kind of starts sending signals. To the rest of my organs, my liver, my pancreas, to start making digestive enzymes, to make all the other enzymes, detoxifying enzymes. And then at that same time. And so I'm kind of primed to eat. Right. I've just made these enzymes to eat. And so then I eat and I break the things down. I let my enzymes break it up. I absorb it and I build it. I use it. I make energy. I can make proteins from that. I can use it for energy.

And then as we go on during the day, you do that at the beginning of the day. And so the cycle, the gene study had expressed kind of go up and then during the, towards the afternoon, the night they go down and then you have a different set of genes that basically activated, and these are to kind of look for things that's wrong in yourself.

So these are the times when you are at night and you're sleeping. Those are the kinds of fixing we go through something called autophagy because we're not eating at that point. And it's cleaning out the cells from proteins that's misfolded or not correct. And so you have to have this time where the cells work and do all the things that they're doing, and then get to a time where the cells are kind of, you know, fixing themselves and getting ready for the next day.

And so if you mess this up by eating at the wrong time, for instance, this completely throws off this whole cycle that's supposed to happen. And so I mean the same with the

microbiome. So now that you eat, I make the metabolites, or the microbiome generates this metabolite, but it's generated at the wrong time.

I absorb it. I get it in. It's not there when you know, everything else is supposed to be using it. So and just the whole, and so you can basically reprogram your metabolism.

Eating at the same time in the mornings and then stopping to eat and then having a time of fasting when you're sleeping, basically, and then starting over you're reprogramming, reprogramming your metabolism to follow that specific cycle.

And so your microbiome basically follows the same cycle because it lives on the food that you eat. But again, it's really important. I mean, there's many studies that show that even if you eat a high fat diet, you can do it. Intermittent fasting improves health. And it's true that you see some health improvements, but I also want to make the point that you can not just do that with an unhealthy diet.

You still have to be healthy. You know, it is like people that choose to follow an Atkins type diet, right. That is not good for the microbiota. The microbiota will, you will, you will increase the type of microbiota that will give you colon cancer. You know, that's not the type of microbiota that you want.

And so we can, it's important to sleep and circadian rhythm absolutely important. The type of foods that you also eat is just as important.

MERYL: Right? I love that., I'm going to record this and play this over for every single one of my clients. And so, so let's talk, cause I know the next question is gonna be.

Well, I from you know, for anybody watching is going to be okay, well, let's talk a little bit about, so we're going to digress just a little bit, but the whole intermittent fasting piece, because again, so fascinating. And I get this all day long from people as well. Right? And you see some people and we're all individuals, but some people are doing a fast and they're not seeing results and some are, and maybe they're just not realizing the results that they want.

And of course that's individual as well. But can you speak to intermittent fasting in terms of. Is there a preferential window, right? We hear 12, 14, 16 hours. What, in your opinion and research is the best way to do that? And, and the best timing through the day, right? People want to make up that they're whatever times that they're doing it really a best time.

MARIE: I will tell you, so we've done animals with this, because it's just so much easier to control timing and food in an animal study. And so the studies that we did were not to look at day versus night eating, but actually day, but early day versus late.

Eating. So if I eat all my main meals earlier in the day from breakfast to maybe just pass lunch or then lunch shifts to kind of past dinner, which one of those are more beneficial. So for weight gain, I would say, or weight loss and also metabolic improvement. They're kind of similar. The one thing that we saw was that if you have, if you eat late at night, Your fasting insulin The next morning is much higher than the group that ate earlier in the day. So and to me, it's like, you want to get your fasting. It has to be, you want to get

your insulin levels lower. You don't want these high, higher insulin levels. And so I personally think earlier fast, like from breakfast to mid-afternoon.

Is, and I've tried this, I've tried this all kinds of various ways. This is the easiest way, but I will also say this, that I think as just a person, a mom that has to cook dinner at night for most of the time not eating dinner with your family is really hard. Yeah. And so even though I think that, the breakfast to four o'clock in the afternoon is probably the best whenever you can do it.

If you feel like you need to have dinner with your kids, you need to figure out your lifestyle, how you can do it then. Okay. Just keep breakfast and only eat from 12 o'clock, you know? And so do that. I just think people have to find. The best way to make it possible and make it a lifestyle change.

Because if it's just a thing that you're doing for a month, it's a waste of time. Don't even try if you'll be fine for a week and then, okay, we're getting back to just what it was. So it has to be such that it's a lifestyle change. It has to become part of what you're doing for the rest of your life.

So you have to figure out what it is. But I would, I would say for a physiological thing that we saw, that's different. It's the insulin levels being higher, which would maybe still be a risk for insulin resistance later on. The later at night it's better to eat earlier.

MERYL: Right. And, and we always talk about that. So, so timewise 12 hours, 14 hours. Does that matter to you then so much? Or is it just, is it more that it's an eight hour window of eating a six hour window of eating? Like what, how do you do this?

I know people are gonna ask

MARIE: To me, I think that the eight hour window of eating is the most beneficial for most people.

So if you have eight hours where you can eat in and then 16 hours where you don't, that's a doable beneficial timeframe. And that gives your body enough time to kind of reboot during that 16 hours.

MERYL: Great. That's great. Great information. And, and again, the rationale behind it to me is always so fascinating.

How gut health impacts your ability to fight COVID

So, let's jump right in now to what we're seeing with the gut and COVID and how your gut health. And immunity impacts your ability to fight the disease. So I'm sure intermittent fasting probably plays a role in that, but, but in terms of let's, let's speak about something else that you're that you're seeing, or are you seeing between that between the gut health and COVID

MARIE: So having leaky gut.

For instance will increase your inflammatory status period because you know, you now have bacterial components that might get into the blood, and that is where your inflammatory molecules will be generated. And so having having leaky gut or any kind of gut disease where you have inflammation going on.

Might increase. And I'm not saying it always will do this, but it alters the immune status of how well it will fight other infections. You know, if you have to think that your immune system is now constantly engaged in the gut, taking care of something. And now I have this viral infection that is a second, the second source of where I have to use energy.

Right. And so and so absolutely will affect, I mean, gut health and face really everything, but the health will also affect your immune system and how it will fight other infections. I want to mention something and this is something that. I don't have the answer to yet.

We're actually just starting to look at that.

And it's something that I just absolutely find fascinating and it goes back to, so I wrote this paper a couple of a couple of months ago. When all the COVID stuff started and they were talking about these people that have more severe COVID disease having a higher expression. And I'm sorry if I'm becoming very technical, but I hope I can explain it.

Having a higher expression of this molecule called PD1 stands for program one on your T-cells. Okay. So whenever you see PD1 it means that those T-cells are exhausted or they're less efficient fighting a virus. And so what they saw, and so that makes sense that people that might have COVID infections.

If they had a higher level of this PD1, they're not clearing the virus quickly. And so they might have more disease. And so interestingly, not very long ago, maybe the last two years, it's also been shown that people that are overweight and obese have higher levels of PD1 on their T-cells independent of any viral infection.

Okay. And so this to me is really interesting because that means that they already have an exhausted T-cell repertoire. Before they ever got the virus and the co-morbidities for COVID right now is type two diabetes and obesity. So it's all these things. So keep a look out for that, because I do think that maybe the immune system, the changes that's induced by our diet and changes in physiology that then alter the immune system will affect how they respond to the viral infections.

Food is our operating system

MERYL: Right. And that's a great point because it, it really. Reinforces the fact that food is so important. REal Food is so important because it, it really does just set us up for like, that is our operating system and our body knows what to do with it. And when we're not feeding it, the right fuel, the body becomes compromised everywhere.

And that is such a huge point. And again yes, you, you get into the minutia. What this looks like, but, but it is so, so important that people understand that this is why we're talking about that. And this is why it's so important that we may sound like a broken record, but I think people hear it.

And then they go out and do what they want. You know, they just go out and continue to do the things that keep them unhealthy. And or there it's, it becomes very dismissive, oh, I know. I shouldn't be having so much sugar. Oh. But it tastes good. Right. And then we don't realize the far reaching effect that it has on our entire system and the immune system.

And, oh my God. I swear. I could sit here and probably ask you questions for hours. Cause I'm just so fascinated, but. You know, so we, yeah, so we touched a little bit on that, on the chronic inflammation and the disease part of that.

MARIE: So let me just mention something and I'm sorry that I'm interrupting because I haven't seen that.

I think I would like people to understand also and this is kind of getting kind of back to the gut. We don't think about the fact that, but you're the inside of the gut. There's actually a lining of what we call mucus. You know, we all know what mucus is right. And actually that mucus is incredibly important, right?

And that keeps, it keeps all the bacteria at a specific location away from the cells. And so that the right things interact with the cells. And so the food that we eat, especially things that dissolve. And we have, this is in many of the foods that we eat. It dissolves that mucus lining. And when that's gone.

All the bacteria sits right on top of the cells and good, bad, whatever it is can now make havoc, right. So they can interact. You can kind of suddenly have epithelial cells it's supposed to be tied to each other, break apart and things can get through it.

So, this is again, so it's these stuffs, that's an ice cream, right? That stuff that's in powdered milk. This is this, it dissolves the lining, not really the lining, but the mucus.

And it just allows for that bacteria to get to the gut and generate this inflammatory kind of milieu that is then effective, we're seeing cause depression, for instance, who knows.

What foods break down the mucus layer in the gut?

MERYL: can you talk about the foods that do that? What are the foods that, or what are the compounds that break down that layer?

MARIE: So, oh, I should have looked this up before I came in, but yeah.

MERYL: Well, if you happen to know off the top, otherwise we can make it for another company.

MARIE: It is it's emulsifiers.

And so it's everything where you have things that have to be emulsified with lots of food, like ice cream and powdered milk and things like that, where you have to emulsify. So what's the most, the fats. It. Little fat makes it into little droplets. So it does the same thing with the mucus lining.

MERYL: So would that be something like some of these gums that we're now seeing the xanthan gum and absolutely

MARIE: that's exactly what it is

MERYL: now and think about it.

We have all these people consuming and, and you know, like these, these milk alternatives have all of these things.

MARIE: y. That's exactly what it is. It's these Guam things. That's exactly what it is. It's multipliers. And so that's what it does to your gut.

MERYL: Right. Okay. So yeah, I, I, so we may have some of these things that in theory, they're plant-based milks that everybody knows everybody's plant-based plant-based but the problem is, it's not real food.

It's, it's, it's loaded with these emulsifiers. Cause if you've ever made almond milk, we all know how it separates.

MARIE: Right. Yep, absolutely. That's exactly right. Yeah. I mean, it's so funny to me. I I was thinking the other day I bought this bag just because I was curious, this bag of banana chips and it tasted like chips that had salt and all these things on it.

And I was just thinking, I was like, wow. You know, we took this perfect little banana that came in appeal. It was fine. You could leave it on the table for a week. And I made this thing that has like, nothing. It tastes nothing like a banana, what on earth.

MERYL: right. I mean, and then we call that healthy.

MARIE: Exactly. I was in the health section of the store

The dangers of processed foods

MERYL: Right. So, so again, slightly off topic. This was definitely not on my list, but now I'm curious. Are we, are we talking about things that, and, and especially I talk about it with my clients who were staying away from processed gluten, because we know the gluten can affect the tight junctions in the gut.

Right. And dairy. So gluten is an easy one to kind of rationalize. I think people have a harder time with dairy or even processed dairy. And we hear confusion about that. Do you have. Any opinion one way or the other on dare. You know, I always say that fermented dairy products are certainly much more healthy because of it and natural probiotics.

But do you have any opinion, I'm certainly not holding you to it, but I was just curious for my own kind of research.

MARIE: So my, my opinion about dairy is, we have evolved. This enzyme that allows us to get energy from this very nutritious source, right. From milk. And so obviously along our history, this was very beneficial to people.

So I don't think outright dairy is just bad for people, right? So there's obviously people that are lactase persistent or lactase intolerant and, or they have the different words now that obviously can't use it. So you can't drink it. Just your genetic makeup. You cannot allow that.

And so if I have a lack of calories, Milk would be fine. If this is healthy milk, that's not filled with antibiotics and all kinds of other things. Is it good for the planet? I think lots of dairy cows are not good for the planet, so it is good to try alternative things. So I'm all for trying alternative things to kind of keep everything in balance.

But I think just from a physiological point of view, unless your genetic makeup has something that cannot handle the milk protein You know, I can, I can handle milk just fine. I'm from Northern Europe, I have Northern European genes. So we have obviously

evolved to use it. And so I'm not a big milk drinker, but you know, if I need a hundred calories, I will drink a glass of milk.

MERYL: Right. Got it. I, that's perfect. So one other thing, and then I know I'm probably going longer than we should, but like I said, this is fascinating. So one other area that I think is also pretty common, we're seeing a lot of it is the whole food allergy food sensitivity.

Conversation, right. People are coming to, oh, I think I have this allergy, right. And there's a million tests out there. We're all doing these IgG tests, IgE tests, CG the complement proteins and so forth. And I don't know if this is the work that you do or don't do, but I figured I'd throw it out there since we're talking about all this gut kind of connection. Do you have any information on that? Can you speak to the food allergy piece of it at work or even any of the testing that is being done in that area.

How gut health affects food sensitivities

MARIE: this is not why the food allergy is not my, but I will tell you that my, my reading and my understanding from this and my, my also my personal opinion is the fact.

So if I. If I have a microbiome microbiota, and also a mucus lining that is not proper.

Again, you get food, food pieces, right? You're not digesting the food properly. And now suddenly you have food pieces. That's in contact with cells where it shouldn't be. And so, and that drives the other, I mean, absolutely.

It drives the allergies. I will also say, I think there's a lot of, there's a genetic component. I've just, I've seen people become allergic without really changing anything else. So I do think there is a genetic component to this, which of course it drives your immune system and has a specific drive in the immune system and specific direction.

How genetic

MERYL: Right? Absolutely. And you know, we're doing a lot of the genomic testing now. Doing the nutritional genomics. And we are seeing people with that, diamine, oxidase snap, and some of the things the food 2 gene that we know as a relationship to B12, but it also has a relationship to what's going on in the gut microbiome.

So it's nice that we can now look at that from the genomic perspective and at least help at least state for some of those people that maybe didn't know, oh yeah, this is why I need to do this. Or how, and, and put, put them on a better trajectory. For prevention based on their individual genomics.

MARIE: Yeah, absolutely. I mean, this is, this is the future, right? We will look at these things in value. These are the things that you are predisposed to. So this is the future. I mean, this is again, it's, I think it's such an exciting time to be in the nutrition field.

Imagine your students, that's just starting right now in 10 years from now, what are they going to do?

And what are they going to know?

MERYL: Yeah, right. Hopefully amazing things. So what, okay. My last question because you've been so generous with your time, but so really it's a tie it all up. I mean, to tie it up, what do you recommend to people when it comes to nutrition and immune support and gut health?

Like, is there sort of, again, that 30,000 foot view of what, what generally is your recommendation?

MARIE: Yeah, so there's a couple of things that I would recommend. First of all, you have to be in sync with your circadian rhythm. So it is really important to eat certain times and then not eat at certain times, give you a body of time too, to kind of rest and recover.

It is really important to get enough fiber. Yeah, you have to get enough. We have depleted our diet diets from fiber and fiber is really what it is, what the microbiome microbiota. What they use and the metabolites of that we have opted that, to use that for all kinds of things. And so fiber, please eat a lot of fiber.

I also will say, pay attention to your fat, make sure that you get. And a good ratio of omega three and omega six fatty acids and saturated fats is important, but you know, you don't want too much of that. So in the end and so for gut health, I would also say that there's certain things that you have to make sure that you have in your diet.

I'm a big believer in vitamin C, zinc. You know, you don't necessarily need to get it through a supplement, but these things, you have to make sure that they are in good quantities, vitamin D you know, good quantities in your diet, in vitamin D. If you don't get

it in your diet please make sure that you take a supplement because that does affect your immune system.

So that is really my overall; don't eat all the time, give your body some time to rest, feed the bacteria the right stuff so they can keep you healthy. And you know, going to be good to yourself.

MERYL: Exactly. Oh, I love that. What great advice. Thank you so much for your time.

Thank you so much for this conversation.

I really enjoyed it. I'm excited. I've already thinking about what the next one's going to be with you and I, but it was really very generous of you to spend some time with us and I appreciate it, and I'm sure our viewers will as well.

MARIE: Well, thanks Merrill. This is really. Great. I mean, I love to talk about these things and I would actually love to talk to you more about it and I hope people find value in what we've spoken about, you know?

MERYL: I listened, I studied this and I do this all day long and I've even found value. So I'm sure you have really helped a lot of people out there.

MARIE: great. So yeah. Thank you so much for having me on. I appreciate it.