

MERYL: Hey, everyone. Welcome to the Rebel Nutritionist podcast today. I have a special, special guest. My long time friend and colleague Amanda Archibald, who is the founder and principal of the genomic kitchen. She is also my clinical tag team partner and my gene sister, Amanda also consults in product development and innovation for companies seeking to incorporate genomic science into product offerings.

And she teaches and trains clinicians globally in genomics. And she also has a robust, private practice in that area as well. So. Thank you, Amanda, for joining us. We know we've all got crazy busy schedules, but getting this conversation in the books, so to speak, is important because we get questions all day long.

And it's an important topic because this is, this is cutting edge science. So welcome.

AMANDA: Thank you. Good to see you and hear you again. Absolutely.

MERYL: So let's get into it by really talking about clarifying what the testing is, understanding the interpretation and understanding the nuances around that.

Right. So I'm going to let you start with that sort of high-level question.

What are we looking to learn from genetic testing about our health?

What are you looking to discover from genetic testing?

AMANDA: What is genetic testing and what do we learn from it?

MERYL: Maybe a little bit of both we've talked about what genetic, or let's say genomic testing is, right, but it's understanding the data around it because there are so many tests out.

Right. And there are so many tests that are limited in what they offer. And so what is it that we are looking at collectively and it's really also a more about not just here's your genomics and then here's a supplement to go with it.

AMANDA: So like huge Pandora's box. So from our perspective, at a clinical level, I was professional. What we're looking for. And then what's the experience you should have really, as, as an individual working with either one of us or an expert in the field. So what we're looking for in a really good test is something called **clinical relevance**, which means that when we order a test and we open it up, what we're looking for.

Is **your unique blueprint**. And **we're looking for patterns that basically tell the story of who you are** that give us clues as to where to go look in your human operating system in your biochemistry, that's your operating system so that we can find out not necessarily what's wrong, but where we can improve the efficiency of how you work.

So that's what we call clinical relevance. And so we get an impression from the test. And I want to go back here. And just before I kind of go to the next part, which is why genetic testing or genomic testing is so important to us is **it's probably one of the most significant tools in our toolbox that we've had in our careers**.

So that's how I would look at it. You probably would agree right. But it's one tool. And what it does is it kind of removes the guesswork of how we work. And how we do our work. It removes going down rabbit holes, trying to figure out what's wrong with you. And what it does is it lays

down this beautiful roadmap to, like I said, the inefficiencies or what may be wrong at a cellular level for you.

So when we see those patterns within able to set, talk with you and say, this is what we're thinking. And our next step is to always validate that through laboratory testing. **So we'll never do genetic work without laboratory testing.** And the lab testing will either validate what we think we're seeing, or it'll say what wrong place to look, looks good here.

Let's go on to the next place. So, yeah. **Saves a lot of worry, a lot of time investment** for you and us. Mainly you, a lot of wasted money is taken off the table. If you will. And we get to efficiency faster.

MERYL: Yeah, no, and I think that that's great. And I think what people may not understand with efficiency and, and you know, when we talk about tools in the toolbox, because I also speak to that it's not just a matter of diagnosing a condition.

In our let's call it, medical model that we are also used to it's I'm going in with a symptom. I'm going to get diagnosed with a condition and then there's a treatment for that condition. Right. This is very different because we're looking at okay. Yes. Maybe there's a predisposition for a condition, whether it's Alzheimer's cardiovascular disease inflammation, right.

And, we're not looking to diagnose someone with that. We are looking to say, are you predisposed to some of this? Right. You know, you may have a family history of it, and we're going to talk about, yep. And we're going to talk about that in a second, because I do want to come back to the fear around people learning that information.

But knowing that there's a predisposition allows us. To then make these clinical decisions in the right direction, right? Because someone can come in who has, let's call it the APO Genotype, right. That Alzheimer's or cardiovascular genotype. And we may just be looking to mitigate cholesterol or optimize cholesterol.

And that's just a small, small, small part of the story. And we may be going in the wrong direction with them.

Why focusing on a diagnosis is not always the best way to look at your health

AMANDA: Absolutely. And you know, you, you mentioned that the classic words, the traditional medical model, I was thinking about it this morning, that that system has basically assigned a diagnosis to you. So, people will come to us.

I have, and they'll give us a list, a, B, C, D E hypothyroidism, hyperthyroidism, osteoporosis on and on and on. And what that is, is like a, that enables the medical model to code, right? So it's attached to insurance, but it also triggers thinking or what we'd call the clinical pathway. This is how you quote, treat someone.

With this set of conditions. What we do is say we don't say it doesn't matter what your diagnosis is because it does, but we're not going to go down a treatment pathway because when we take the bandaid off, when we look at your genetics and say, aha, Regardless of what your quote condition is. **We're looking at you at the cellular level and genetics tells us exactly where to look first.**

So it gives us clues as to where to look first. That removes the diagnosis because we literally have to think on our feet, because there's no one person alike. So it's, it's genius in that way that yeah, the diagnosis is not necessarily relevant. It's there, if we bear it in mind, but to your point about cardiovascular disease, Multiple ways that we can look at that and decide what's the priority and your issue with cardiovascular health.

may have nothing to do with the traditional model, right. It could have to do with an inefficiency in using B vitamins, for example.

MERYL: right. and I think that's an important point. To again, go back and reiterate, because I think people want to hear that they have this condition. Here is the supplement.

Here is the medication, here is the diet for that, and then they're going to be fine. And when I go back and I say, but we have spent so much time. Unpacking the biochemistry and it's hard for people to understand these concepts because they're foreign concepts to them, this is where our expertise comes into play.

That we have spent hundreds, probably thousands of hours going back and learning things that we never really learned before. And as science and technology become so much more advanced and applicable to the things that we can really look at. The more we can help people, but we really need to understand that there is a science to understanding that.

And you know, you talked about the toolbox and I talk about a toolbox all the time. Cause people come to me and say, well, why doesn't my doctor know about this? Why doesn't my gastroenterologist and neurologist? I'm like, because they are using a toolbox. That is they, they only use one toolbox, right?

They only use one tool. And it's not that it's wrong because I never want to say that it's wrong, but it's just the way they have learned. And **we have learned in functional medicine and functional nutrition, that that is a whole other set of toolboxes**, many of them that we use to, to speak to. And that's really so much of the work that we're doing and that you're also doing when the culinary piece as well.

AMANDA: Exactly. No. And to do the work we're doing, we actually have to remove the bandaid from the wound, if you will. And just kind of expose our wound, which is a different way of learning to a new oxygen, if you will, new healing tools. So we literally had in our training to kind of set aside how we were trained.

Foundational blocks, but really opening ourselves up to this **very fast evolving era of genomic nutrition, genomic science, which works beautifully with functional nutrition, which is biochemically driven**. So we are operating in a, in a fast moving space, but boy, does it help us find solutions faster for people?

MERYL: Absolutely. So if we're looking at biochemistry and we look at the missteps, Nutritionally. Right. Well, maybe it's a B vitamin thing. Maybe it's a mineral thing, right? People definitely underestimate how much of the minerals and magnesium is not the only mineral that we need.

The importance of nutrition and how it affects our health

Exactly. Right. How many people think overload now? It's ridiculous. But of course. But, but let's talk about how important nutrition is to this and the nutritional work in terms of how you

always say food speaks to our DNA. Why don't you elaborate a little bit about that? I mean, I reiterate those words all the time.

I quote you all the time. I mean, you should see the book. You know, my genomic kitchen book has more spaces on it that have been folded over, and highlighted. So speak to that a little bit since you are the expert in that space.

AMANDA: Yeah. So we know that **the way the human body operates is through food.**

I mean, food is the information, the principle information that the body uses to operate. That's how your cells operate. Obviously there's environmental inputs, emotional inputs, we're energetic beings, but fundamentally just like you put gas or electricity, whatever these days in your car. So **food is the operating system.**

And so what we've learned through genomics. Is that our genes basically to produce the proteins, which are foundational building blocks and this we know, right. The building blocks like muscles and bones, et cetera, et cetera, that they also act as enzymes, which are like construction workers to get the job done in our bodies.

So. genes do this work. to do this work. They need nutrition, nutrients. So there's two parts to think about here. So once we create proteins to do their work, they need the things like the zinc and the magnesium and the B vitamins we talk about. So that's one thing, but the other thing that we know brilliantly is that now we can kind of get into the body and tinker a little bit, scientifically tinker, not messing around.

We know exactly what we're doing. And this is where the field of culinary genomics comes from, which is let's say we want to steer your genes to be better managers of inflammation or

oxidative stress, manage that rust in your body. **We can use very specific foods because of the information they contain, which we call bioactives or phytochemicals or phytonutrients** and what these little, little guys or gals are doing is activating genes who want to activate.

Or they can literally turn down the volume or kind of steer information away from genes that we don't want to be turned on, which is very important when we're looking at cancer. And so a classic example, if you're talking about the immune system and histamine, but one of the perfect examples of a working bio activist Quercetin.

So a lot of people we see have issues with histamine. Some of you listening in have been put on a quote, low histamine diet, which is just like the pits it just is not a whole lot of fun. And yet, you may be taking histamine blockers also. Not fun. Quercetin does the same job. Quercetin is a bioactive.

We find it in alliums. So your onions, those of you who are gardeners, onions, your leaks, garlic for goodness sake. And capers, those of you who know Mediterranean cuisine know capers, fennel, even radishes, potent sources of these bioactives. So **you can use food as an anti-histamine**. It doesn't, sometimes you need our help.

You need more than just food, but this is what we know that food is now operating in a traditional way, but now we can use it at a, at a genomic level to, to tweak and tinker and re-steer and reactivate or deactivate. That's powerful. And that's how your body is designed to operate. It uses food people. It does.

So that's an example.

MERYL: Again goes back to okay. Quercetin, so people are hearing quercetin and now they're going to be like, oh, where can I go buy Quercetin, but what they don't understand as well. And yes, maybe you need some supportively in addition to what the food is, but the first place that has to come from.

The balance between real foods and supplements

Is the food because **your body knows what to do with all of the bioactives and all of the compounds in the food**. And I try and say this over and over. You cannot add a supplement when your food and your body doesn't have the very nutrients it needs to use them.

AMANDA: Right. **Your body is engineered to decode or access information in what we call the natural food matrix.**

That is nature. Sometimes it needs some help to get to efficiency, right. And sufficiency because of whatever's bombarded it. That's what supplements do, you know? They help us get you to the level that your body needs to operate. And sometimes in the case of things like vitamin D we need long-term supplementation because of where we live and where we moved.

But if you're taking, what did I call it recently? No, some like wheelbarrows full of supplements. Something is seriously wrong. Meaning. The Fundamental biochemistry for you has not been addressed because you're not designed to operate on pills and in rare cases.

MERYL: So one example would be, I've had clients recently who have done.

Yeah. Some less than stellar genomic tests that they offer, maybe a few snips here or there, right. A few genetic markers. And then they come back to me and say, well, here's my genetic

test. And I was just told to take methylated folate, and I was told to stay away from folic acids in food and now everything's gonna be fine. And I'm like, oh my God, where's the nearest wall that I can bang my head into so Speak to that a little bit, I know you just mentioned it, but let's talk about folic acid. Cause I feel like everybody comes in. They're on a B-vitamin right.

We talk about B6, you and I all the time. How everybody crazy high amounts of B6 it's in almost everything. It might not be the right form of it. I mean, Lord only knows. Look, I do nutrient testing all day long and people come in and they're like, look at all the vitamins I'm on. And then we do the testing and I'm like, but you're very deficient.

How am I so deficient? If I'm taking all these things, I'm like, well, we've got to talk about the gut microbiome and other topic. Right. And we've talked about the gut microbiome. That is actually a topic that we have continued to do on our podcasts, but, but go back to the, okay, well, I need folic acid.

Oh. And I was told to stay away from folic acid from food. So now we're getting mixed messages.

The mixed messages we receive about food and supplements

AMANDA: Ah, oh my gosh. So this is how many hours do we need and do that right.

Whiteboard please. So, so let's go to the genetic testing and then let, let, let's kind of lay out the biochemistry and it's, you'll have to open your ears to this one.

I know because we don't have the digital whiteboard for you to look at, but one of the tragedies are travesties. I was saying genomic testing. There are some companies that just testing a very

small handful of genes. So there's a reason why it started in that space, but it needs to move on.

So what's happening is you will know someone who is saying, I've got MTHFR, or I've got COMT therefore I need to do this. Or this defines my personality or reshapes my kids, or I'm going to die early, or I'm going to have to do this for the rest of my life, which is not, none of which is true. So in our world, We test genes and **we look at genetics for your entire biochemistry**, as much as we can look at.

So **you are a series of interlinking biochemical cycles**, right? So, so when we just, when you told them. Have to stay away from folic acid. I would have to look at what the genetic test is that you look at because we look at the role of folate to inform multiple systems in the body. We would never say, okay, you need to supplement because you have this gene picture that comprises of five genes.

So what we're looking at. How well do you use folate? How in your gene picture? How well do you use folate? And the best form of folate is from food. It comes into your body in a certain form. Genetically, you have to take that form and transform it a little bit further. It goes into a production line. That's what we're looking at in genes.

It's not. Whether where you need to get your folate from it's **how well you transform it to go into the right areas**. If you body, if you also make it as simplistic, it's kind of like Disney, you get on the little, little train and you disappear behind the curtain and whatever rides you on, we need to get you on the ride.

Okay. So this is where we look at genetics. So tell us, you might want to check. So we will, we'll validate that through nutrient testing, but we're never just looking at folate. We're seeing folate also works with other nutrients, like B12, like choline and, and magnesium and zinc and vitamin C. So, if you're a person who's been told you need to take, methylfolate a single nutrient supplement.

We need to talk to you because no nutrient, no gene works by itself. **No nutrient works by itself.** And we are able through genetics to see the inefficiencies, to say, you know what? You probably don't need more methyl folate, or if you did, you need it in combination with some other nutrients **we're going to try and use food first.**

It doesn't always work efficiently. Usually it does. Sometimes you need to nip and tuck, but I can't remember one client I would have had, or one that we've worked on together. Meryl where the single piece of advice to get is you need methylfolate. Because **your body works in a matrix, it doesn't work on a single nutrient.**

Even your vitamin D will never work by itself ever.

MERYL: The other thing that I would just add to that is when we talk about folic acid, it's really the added folic acid in packaged and prepared products that we need to watch out for, because that folic acid is the synthetic version, which is not used well.

Why we need to be in control of our own food

And that's where we really need to be careful. And that's, again, going back to, we need to be in control of preparing and cooking our own food.

AMANDA: Yeah. And let's talk about, because you know, when we look up, it's really true. So we've learned a lot about folic acid and yet there's detractors in the literature.

You can see it go a little bit back and forth. It can be quite it's kinda like the mask debate. To be honest with you, we got the same debate with folic acid. Folic acid is a synthetic molecule, depending on your genetics. It can really tie up. Or block your body's ability to actually absorb and get the levels of folate it needs.

You could be eating your leafy greens or you legumes great source of natural sources of folate. But if you're out eating every night or you got the crackers or whatever, anything that has flour in this country, if I remember correctly, it depends on the company, right is going to be fortified. And I don't know if that's by law or whatever. And the natural fortification is folic acid. That gums up the system, you folate is hard for the body to get sometimes. So then you end up potentially with what looks like normal levels of folate in your blood. What you have is this synthetic form, the folic acid that is not being able to get into the cells.

It's absorbed but it's got to get from blood into the cells. That's where genetics plays a role. So you can look perfect on the outside, in laboratory testing, but we know that you're actually not absorbing this. And what we're seeing in the literature now is that these high levels of folic acid can actually have an epigenetic function, which means they can actually, in some people, turn on genes. So that's epigenetics is how we use molecules to turn genes on and off. And so this kind of a relatively new area of science said there seems to be a connection with very high levels of folic acid intake, which can easily come if you're eating a lot of fortified foods or eating out, or what have you.

And incidence of cancer. That's a correlation, it's not cause and effect, just certainly coming out in the literature. So your body's designed to work with the natural food matrix is the cautionary tale here.

MERYL: Absolutely. And, and that's why I always say **we've got to use food as our first line of defense.**

Rather than implementation and going back to what you said about the lab testing, because we do such intricate kinds of lab testing that is different than, again, going back to the traditional what's in the toolbox again, I get that all the time from people. Oh, well they tested my B12 and I got my B6 tested and I got this tested and my levels are fine.

And I'm like, no, no, no. That is, that is just the routine. What's in your repertoire, right? What's in your blood cells, but it's not indicative of what is in yourself. And that is a different test. So it really is our work to educate people and understand that this is a different toolbox.

Yeah, and really pay attention to what it is that a traditional physician or some other kinds of practitioners are testing, as opposed to these functional tests, which give them. Way more information about the nutrients that are in your body and lacking and you know, how they all work together.

AMANDA: we're looking at the deepest, like molecular level issue of body or your tissues literally able to utilize. Information that you're giving it. And that takes us back to, is genetics playing a role? Is the gut playing a role? Yeah. It's

Why it's important that all our systems are interconnected

MERYL: well, yeah. And so let's touch on that for a second because we talk about all of these systems being interconnected.

So again, back to the **traditional medical model. Where everything seems to be disconnected**, right? Where we look at individual specialties, right? You go to a gastroenterologist for this. You go to a cardiologist for that. You go to a hematologist, for something else. And yet nobody's connecting those dots.

In the way that we use genomics to do that. Right? So each system is dependent, like you said, it's like this complex you know, chemical reaction. And one thing is dependent on the other

AMANDA: Exactly.

MERYL: And so I try to explain to people how genomics, how the testing allows us to connect those dots, in those systems.

Like why. Why is the gut important to look at when we're looking at cholesterol or do you want to speak to some of that in some of the mentoring that you do with clinicians or even with the programs that you develop?

AMANDA: Yeah. So one of the things I guess that is integral to working in this field is the ability to understand what genes do and how they function, how they operate in the system.

That's one thing, but if you, and I know we work with several advanced genomic tasks. The test we look at kind of three-dimensional or two dimensions. There's the tests you open and look

and see what an executive summary would look like. That's the first step then **real jewels in a genetic test is for our ability clinically to find patterns.**

So you have an executive summary, for example. So this is, this is the impression that your genes give us, but we, as a company, don't know your patient, they're not talking to you. We do. So as I look at the tests, then I look at it. So this is what the test is telling you. But with your questions and your history, this would go to something like cardiovascular disease, which we should talk about.

We're able to then say, ah, there's patterns we're seeing here that make me want to ask about your family history. Is there a family history of cardiovascular disease, even though you're here to talk to me about hyperthyroidism, right? Yes, there is. Okay. So even though we're here to look at nutrient sufficiency to support your hypothyroidism, that's why you're coming to see us.

We also would like genetically, because we're seeing this genetically to maybe talk to you about more advanced cardiovascular tests like Boston, heart, Cleveland, whatever, because, and Meryl, I'm telling you, and you see this all the time when we run that. Well, I'm glad you came to see us because we can solve this inefficiency, but long term, we need to look at this.

MERYL: To the point of what you just said, I had a client who came in, he's got allergies and all kinds of stuff going on. And yeah, we were going with the supposition that maybe it is a food allergy.

Maybe it is a histamine intolerance. Maybe it's some of that. And then got his genetic testing back and his subsequent nutrient testing. And fair enough, I'm looking and I'm going, you know

what? This is not a histamine issue. This is a detoxification inflammation issue, right. Or methylation issue.

And, and it saved him endless amounts of dollars in, in tests, in the wrong kind of testing. Right. And a tremendous amount of time barking up the wrong tree. Now we're able to focus on where his genetics is taking us, which we would have never known. How do we do that?

AMANDA: You wouldn't ever know.

And you know, let's go back to histamine. You talk about the Canary in the coal mine. I mean, what we see. So often genetic testing is the inability for people. It's their histamine related genes, right. That aren't working efficiently. So in a traditional setting, people say, I've got hay fever, I've got allergies, I've got this.

I'm sneezing. I have migraines. When we look at the genetics more often than not, we're going to see these culprits with two very specific genes that are involved in histamine degradation, histamine, like I said, is that the Canary in the coal mine, like we all have. Some people just genetically are a little bit more hampered.

So these are the people and studies, maybe some of you listening and you're like, you're on the low histamine diet. It's miserable. It's just nothing. I am sorry. And you get stuck and you know, what, and what happens? Did you go on less and less foods? Right. Got, who wants that? Who wants to have a migraine?

Like everything I eat this issue. I get a reaction. So nine times genetically, this is where the testing is so useful. We're going to see two things now. First of all, probably some issues with

histamines is two genes, HNMT, and DAO that we know and hug and love, but we're also able to see, oh, there's probably some issues with you being able to absorb B12.

You can't degrade histamine without B12, it's involved in a process called methylation, which you may or may not have heard about. But to enable histamine degradation, you need a whole bunch of nutrients. It is a basket full, mainly your B's, your magnesium. You're saying your vitamin C, the genes affect the absorption utilization of many of those nutrients.

And if your gut is in disarray, which you may well be. If, if you're sneezing and all that stuff and having reactions all the time, then not only you have to fix the gut, but we have to help you work around this inefficiency. In your genes that are involved in histamine, and it's not about putting you on a lower histamine diet.

It may be for a while, right? While we calm things down. But really the issue is we need to give your genes the right food information, nutrient information, so they can do their job so that you can eat the way you want to. You have to take a couple of nips and tucks. That's where genetics is amazing.

It's like it tells us. Where to go first instead of plastering your immune system with all kinds of stuff, including drugs, right. Yeah. So, and in those cases too, in the immune system, if it's paired with there's, there's genes that impact the gut interface for sure. But we see huge issues with detoxification.

So you have a histamine overload for histamine degradation and for detoxification. Yeah. You're miserable. Right. We see this in genetics, right. And we know how to work through this and that's the power of this work.

MERYL: Absolutely. No, it is. And I speak about it all day long. And you know, and, and look, we can have this conversation on and on and on because we have so many examples and there's so many genes and there's so much biochemistry to untangle, but, but the bottom line is, it does give us the roadmap work.

Are specific diets worth it for certain people?

And the jumping off point of where to start, where, where so many people you know, especially with Dr. Google, right. I have people coming in and going, oh no, this is what I have. And I'm like, okay, well maybe not let's, let's look at that. And of course, then go back to the diet and the kinds of food you're eating and really understand that it is a whole food nutritionally supportive diet. It is not finding the right quote unquote diet to be on. Right. I think that is a big takeaway. That is kind of, do want to talk about that. I know we're, we're going longer, but I think this is a fascinating topic because people need to hear this right.

Come in. Oh, well I'm on a keto diet. I'm on a paleo diet. I'm on this diet and everybody is so confused and nobody's eating the right kinds of food. And now everybody's on a plant-based diet and nobody's even getting the right amino acids.

AMANDA: Let's talk about that plant-based diet.

MERYL: Again, right. We were going to maybe have to save that for a whole other conversation.

Like, okay, well, plants are great, but, but most people don't do well on only plants, right? So we go from one end of the spectrum to the other. Are we over consumers when it comes to protein

and eating the wrong kinds of proteins? Absolutely right, but the idea of nourishing our bodies with real food still has to take precedence.

And real food, in the most natural of forms, not these fake foods that keep coming out. Right. We can talk about things like you know, whatever, I'm not picking on the impossible burger, but like those kinds of protein based, you know what they're saying? Well, they're replacing whatever they're the proteins or you know, everything now is the mushroom craze.

Eat the Shataki mushrooms, don't go get the mushroom jerky that has more garbage in it than the original mushroom did

AMANDA: because your body doesn't recognize that as a natural food matrix. So even though there's an environmental part there's really good arguments for this. What we don't know in our work, we don't, but we cannot tell you how your body processes an impossible burger.

Cause I don't know that we've done the testing yet to even know that. I mean, maybe it's been done. Maybe there's some clinical trial we haven't seen yet, but that's what bothers me when we read. And this is the story of gluten in America is different in different parts of the world that if ever there was like a bellwether for what some people genetically cannot interpret those new molecules in food, but they can't then they, and that may be some of you, right. Who's listening in. But we don't know what's with these processed plant-based foods, what, what our body is doing with them.

MERYL: Right. Yeah, absolutely. I love it. It's true.

Right. Eat the real food. Stop looking for shortcuts. I mean, that's the thing we all want to shortcut.

We all want it. Not at all. Okay. I'm generalizing, but right. It's about convenience. I don't want to take the time to cook. I don't like to cook. The only way to keep your body healthy and well moving forward is to pay attention to what goes in.

How to make your own juice supplements

AMANDA: Exactly. Exactly. And you know, the cool thing is when you do the work we do and maybe give a couple examples here in Meryl, because we both play a lot in our kitchens.

If you are short on time, et cetera. We now know how to kind of steer your biochemistry. I mean, that's what Meryl and I do, and she's been at it longer than me. But, you know, **your body operates on food.**

It doesn't operate on supplements, supplements help you get to efficiency and sufficiency.

And some people do need longer-term supplementation. We know that genetically, but if you want to move to real food and use food that your body can respond to, a juicer is actually really useful. So you see me play around.

I actually make my own juice supplements to steer my biochemistry and it may be like beets or whatever we wanted to use. You freeze those as ice cubes. **Those are food driven supplements.** And the other thing that's super cool. You've probably done it too. It's this idea of a mashup So here's what you do.

And if you want your own supplement, this is a lot cheaper, too. You go to your farmer's market or your local market, wherever you go, you load up your grocery cart, like your roots and your

leaves or whatever looks good. And then you put that through your Cuisinart or your food processor.

So you're making something like a mash, you could also use it with a grater, but who wants to sit there and grate sweet potatoes, right? So you put like, let's say 13 or 14 vegetables in there. You dump all that in a bowl, you get your ice cubes and then you spread that right into your ice cube, trays and freeze.

It doesn't matter. What's in there. Just do it. If you're having a hard find with your vegetables or whatever, and then each day you pop one of those out. Right. And if you put it in your omelette when you're online, sometimes I just pop them out and eat them straight. You know, it's like very vegetable who cares.

That is the best information you can give your gut and your genes if you don't do anything else. Right.

MERYL: Absolutely. Right. All those things that the root vegetables, like you said, so yeah, there's, there's lots of tools, instructions, and you know, you and I, again, can go at that for hours and talk about it.

I mean and on and on, because we're just both so passionate about this and, and love the work that we do. And love helping people. Ultimately, I do hope we answered more questions than we've created

AMANDA: and not the other way around. Right? Well, maybe they could get folks to just fly in with a question.

MERYL: That's how that's how this conversation started.

Right? We get questions from previous podcasts and we, you know, bring on the right kinds of people to answer that. But we always know that people want more because this is just the ever evolving area of science. That is just truly it is, it is the next wave because gone are the days of counting macros and just protein and carbohydrates, and all of that.

We now know we can literally get into the weeds of this , and shift people's health. And that's really the key.

AMANDA: Exactly. Exactly

MERYL: anything you want to leave us with before we say goodbye,

Can we biohack our system - and should we?

AMANDA: I'm just going to kind of talk a little bit about biohacking. And

MERYL: yes, yes, no, I definitely want to hear, okay.

AMANDA: Okay. So, so this is interesting because you know, I do a lot of work in consulting as well and I guess you call it an offshoot of genomics, it's this idea of **precision intervention and precision medicine and precision nutrition**. That's actually what we do is genetically driven.

But what you seeing is people are going to take that to almost an extreme and sort of look at how can I bio hack this part of my system will that part of a system and it has its place. And I'm

kind of, I'm very similar. But what's the word I'm looking for. I feel this a lot of value in it, but if you end up fiddling under the hood of your biochemistry and you're just using like NAD or you're using, what is it we're using for ketones?

I can't even remember like it's jet fuel to try and put yourself into ketosis because you heard someone so speak, right?

Like the MCT oils

The MCT oil, that's what it is. These things can have their place. But you also have to remember that the people who are really biohacking themselves may have the time, energy and money to do it, but you're fiddling everything.

You have, **everything you do can have a systemic impact**, but you're using very kind of timely precision molecules to do this. And I just caution you.

MERYL: I am so, so glad you brought that up because I am on the same exact page as you.

I do think in some areas it has its place. I think in some areas it's also become way too commercialized and it's a money maker.

AMANDA: Right, right.

MERYL: I agree with that. That's my concern as well. So I do think it can have a place, but I think again, if people are trying to find the shortcut bottom line, **there is no shortcut to our biochemistry.**

This is work. I always say I am. I have been my own N of 1 for the last 25 years. Exactly. **There is no shortcut to keeping your body healthy** and the nuances that make us tick as individuals. And every day, I discover something new about myself and something new that I need to do to address somewhere else.

But I understand that all of the systems in my body are interconnected and that one place is going to affect something somewhere else, or even. You know what, like I had a bout of vertigo, like it's not just, I need to do the Epley maneuver. And like there's some crystals in my head, what else contributed to that, right.

It's always something that happens. And so in the body that we have to pay attention to, and it's not just the, oh, I'm getting older and I'm deteriorating thing. Cause I don't fall into that. And that's why I am the rebel, but yeah, I, I do not to digress too much off of that. I do love that point about the biohacking.

So thank you for bringing that up.

AMANDA: Yeah, no, and i'm not anti it at all. Just understand. You cannot fiddle, in the sandbox of your biochemistry. Everything you do has a systemic effect. Like domino's when you put them all up and you flip one and the whole cascade comes down. You can't determine if there's a branch you want to go off on.

But things like, Ōura rings and apps and things that help you understand how you're operating. I think absolutely have that place and is brilliant for us, right. To see this, but just be mindful. And sometimes if you don't know your genetics, you actually don't know if a specific class set of biohacking or a nutrient or infusion will work for you.

It could work against you. That's why genetics is so powerful we kinda have really good insight as to how you are going to handle or respond to something you're hacking with.

MERYL: Yep. Love it. Love it.

Love it. So, perfect. Great. I think that's a great note to end on, as always love our conversations. Love the work that we get to do together and you know, help people.

So thank you.

You're welcome.

All right. This is the Rebel Nutritionist signing off everybody. Make it a great day. We will see you soon.