Episode 669: Dr. Alan Christianson on Hormone Health & Foods That Are More Powerful Than Prescriptions
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This episode is brought to you by Plant Therapy, which has been my go-to source for essential oils for years. I love so many of their blends. They have an entire kids safe line that I love because I know it's safe to use around my kids. And I often turn to many of their products, especially ones like Deodorizing and Tranquil that make my house smell amazing using while also providing the benefits of essential oils.

All of their oils are affordable and clean and they have an amazing customer service team to make sure that you love all of the products that you try. They have really pure, high quality essential oils, including, as I mentioned, a kid safe line for anyone with kids to make sure that kids are safe for whatever oils you're using. Because some oils are not recommended for use, especially undiluted with kids, they have testing, safety and education with transparency that you can trust about all of their products and disclose all of the ingredients in each blend on their website so that you know exactly what you're getting. Their kids safe branded line of essential oils are safe for you and your children, and they offer free shipping and returns on all of their products. Like I said, these are a regular part of my routine in my home to keep my home smelling amazing. I personally use their Tranquil blend in a diffuser by my bed at night for amazing sleep. And my kids and I are even in the habit of getting some of their blends started in the diffusers to keep our entire house smelling amazing. And they have very specific blends for every malady you could think of, whether it's an upset stomach or respiratory issues, whatever it may be. They have a blend specific to that. And I always keep many, many of their blends on hand. You can find out more and get an exclusive discount by going to Plantherapy.com/vip/wellnessmama and make sure to use the code wellnessmama for 10% off your first purchase. Again, that's Plantherapy.com/vip/wellnessmama and make sure to use the code wellnessmama to save 10%.
Katie: Hello, and welcome to the Wellness Mama Podcast. I’m Katie from wellnessmama.com, and this episode is all about hormones and foods and the interactions and how certain foods and diet can be more powerful than prescription hormones and pharmaceuticals, even during big hormonal changes. And I'm here with a dear friend of mine who was also the doctor that helped me actually find out and resolve my own thyroid issues, Dr. Alan Christianson. He's a naturopathic endocrinologist whose focus is thyroid disease. He's also a New York Times bestselling author whose titles include things like The Metabolism Reset Diet and The Thyroid Reset Diet. I will link to his books in the show notes. They've all been very helpful for me. He's also the Founding President of the Endocrine Association of Naturopathic Physicians, and he's trained thousands of doctors worldwide in natural thyroid care. This is truly a passion and a life work for him, and he's helped many, many thousands of people.

He frequently appears on a lot of national TV shows speaking about this specific topic. But I was really excited to have him on today because he has been doing a deep dive into some very specific ways that certain foods support hormones, especially but all aspects of our health, and we get to go deep on a lot of those today. So in this episode, we talk about why he goes to bed sometimes at 7:30 at night and gets up at 4am each day. We talk about the top five hormonal symptoms that people might not associate with hormone problems.

We talk about why hot flashes can actually be dangerous and why, to pay attention to them, how to address hot flashes and other hormonal symptoms, why hormones change as we age, and why this isn't the case in all animals, including jellyfish that can replicate almost indefinitely. We talk about hormone shifts that seem to relate to a shift in reproductive capacity. So when a person reaches a certain phase of life of not being able to reproduce, hormones shift from a sort of human adaptation and survival perspective.

We go deep on the topic of phytonutrients and what they have to do with hormones and how certain plant foods can very directly help support certain hormones, including things like cruciferous vegetables for liver function, understanding the real deal on fiber, which isn't actually a food, but a category of foods. Why we need a wide variety of plant foods in food form, not just from supplements. He talks about food as a matrix and the context of food within an overall diet. And he provides some really cool examples like pistachios have a pretty high natural melatonin content, but eating them doesn’t necessarily immediately raise your melatonin, but it does upregulate your natural melatonin production at night when it's supposed to go up naturally. Super fascinating. He talks about how our bodies operate on 9,346 different chemical pathways and how that can really benefit from certain foods.

And we talk about hormones during a lot of different phases of life for different people. The surprising way that figs can help with hormone symptoms and how well we regulate hormones is often actually about how well we eliminate hormone byproducts and how to improve that. He talks about things like onions and blackberries that can support healthy muscle mass, why phytonutrients and food and supplements of the same nutrients might not work the same way. How if your diet is devoid of plants, you are essentially taking antibiotics because you're harming your gut bacteria. And how dietary changes can reduce or eliminate adult hormone disease like thyroid disease 78 plus percent of the time. As always, it's a very fascinating conversation with Dr. Christianson, very wide ranging, and I always love learning from him. So let's join Dr. Christianson. Dr. Alan Christianson. Welcome back.
Dr. Alan: Hey, Katie, happy to see you.

Katie: Always such a pleasure to get to chat with you. And I know that I and the listeners always learn so much and we're going to hopefully get to go deep on lots of different topics today. Before we jump in, though, I have a note, so I feel like I'm pretty good at prioritizing sleep, but I am apparently not anywhere near as good at this as you are. Am I reading this right, that you sometimes go to bed by 7:30 at night? And if so, can you talk about that? And what time do you get up?

Dr. Alan: Yeah, well, I usually get up at about 4-4:30 and I do better with a fair amount of sleep. My schedule got pretty set as such many years ago. Our kids, our youngest, at one point, he would leave home for school at like 7am and I don't know, I'm the cook in the house normally and I love to be able to make him breakfast and make him lunch to send with him. So I got in the habit of getting my training day out of the way before six, so I get up at three or four or something and get my training started and finished then, and I've kind of just stuck with that. And I don't know, I've thought about this. We've got a certain number of hours that we've got to do stuff that are kind of non-negotiable and then we've got like our discretionary hours. And if those discretionary hours are at the end of the day, you think about what we do with that. Most people might binge watch a series or do whatever, but you're kind of wound down. You're not a lot of energy left. But if your discretionary hours are at the beginning of the day before the rest of the world has got going, you don't goof off then. You just don't you do cool stuff.

Katie: That is true. Is it kind of that idea of like, what is it? Like, eat the frog or do the big thing first? Sure, the rest of the day gets easier. It makes sense. I think it's easier said than done for a lot of people. But I know you and I have even talked about the morning sunlight thing and how that helps so much with hormones and sleep and so many other things. And so you get even a head start on that you’re up before the sun and then do you still just go outside when the sun rises?

Dr. Alan: Yeah, I spent some time out afterwards too, and that's an important thing.

Katie: Yeah, I get that question a lot. People are like, what if I get up before the sun? And my answer has always been, just wait till the sun comes up, then go outside. But wanted to confirm with you because I know you've talked about that from the adrenal side and the health side and so much.

Dr. Alan: Yeah.

Katie: Cool. I am excited to go deep with you today on a lot of topics, but especially related to hormones because I seem to be getting a lot of questions from listeners about this topic in particular recently. And it seems like maybe because of stress of the last few years or just because all of us are getting older or whatever
it is, people tend to be running into maybe some hormone issues. It seems like many others maybe are having other symptoms that could be tied to hormones and they don't necessarily know that they're connected. So I would love to just start broad and talk about what are some of the common hormonal based symptoms that are going on and how might someone know if they've got something going on in that area.

Dr. Alan: Yeah, many can be related. The top five, there's like some subcategories to them, but the top five are the most relevant, we think about weight, so gaining for no clear reason or can't lose without serious restriction and then it comes right back again. But yeah, weight issues. Number two would be fatigue. Energy is not where you'd expect. You do a little extra and you're wiped out for days. You don't enjoy exercise or if you push yourself through it and you do like it, you pay for it afterward. Number three is brain fog. Where did you put the keys? What was so and so's name? Why did I come into this room for these little momentary lapses when they get more prevalent? We think a lot about hormones being a factor. Number four would be sleep issues. And sleep is something to where I think everyone gets that it's important. But for many people, they can't sleep the way they want to and they can't get the quality or the duration or the consistency that they'd like to out of it. And it's a big thing and it affects all the rest as well. And last one would be hot flashes. This one surprised me about how it's not just about women exactly in menopause, it can hit both genders and it can hit a lot of ages. It's certainly a big thing for women in menopause, but it's critical at many times of times of life for both genders.

Katie: That's fascinating because I think my association had just been with menopause or perimenopause as well. So what's happening in the body when someone gets hot flashes and what can that signal that we need to pay attention to?

Dr. Alan: It's a change in vascular tone. So it's a whole lot of blood vessels that crimp themselves down rather abruptly, and a lot of them are doing that in the extremities, but also around the head and the scalp. And that's that characteristic sensation comes on from. So I think about almost like a continuum of vascular stress or vascular trauma. And on one end we've got stroke to where there's actually a block in blood flow. And then quite a ways down from that, we've got vascular migraines and then we've got hot flashes.

And the data has told us that hot flashes, if someone has them, I don't have to argue about how they're no fun. But we've got data now saying they're actually dangerous, that they cumulatively cause vascular harm, and the same sorts of things that recurrent migraines or minor Tia strokes can have, hot flashes can have as well, and they can be a big deal. So, yeah, sleep disturbances, but also just overt damage to the brain and then changes to vascular health over time.

Katie: That's fascinating. Is that the same as if you, for instance, eat a high protein meal and you feel like a slight rise in your body temperature? Is that different than that sensation of a hot flash where you're hitting your extremities in your head especially?
Dr. Alan: That would be different from most. Yeah, there certainly are a lot of things that will make you feel warmer. You mentioned a great healthy example of that. Exercise can do those sorts of sensations too. A hot flash experientially, it's less in the core and it's more out in the extremities. And it's not so much after something that you would expect would be a driver of that. And there's also often some recurrent pattern to them. There's often some regularity. So that's one way you can differentiate it from other just normal warming sensations.

Katie: And I feel like a lot of people do just kind of consider those kind of a harmless part of menopause or hormone shifting. So that is interesting to note that that can actually be dangerous or signal that it's not good over time. Which brings the question of if someone is experiencing that, what do you do about it? How do you address that problem?

Dr. Alan: Well, yeah, so that's been a big question for some time. And common things that come up are replacement therapy. Hormone replacement therapy is one option that's out there. Conventional medicine often does use antidepressant medications. They have some degree of benefit, but of course with some side effects and other considerations. But I think more and more about how can you help the body work by itself and how can it work naturally. And there are some to where the interventions are totally appropriate and they can be good candidates for that. But thankfully, there are a lot of ways in which the body can remedy itself.

As a generalization, there's how much hormone we have in circulation. And with hot flashes, we're talking a lot now about estradiol and testosterone specifically. So part of it is just how much of it is there, but a bigger part is how we use what is there. This might be a dumb or a dated analogy, but I think about like a pinball game. There's the little ball and there's whether you got the ball on the table or not, but there's how you keep the ball in play and whether it's still moving around right or not. And that's kind of how this works. So these hormones come into your bloodstream like a pinball gets dropped into the board, but then you keep it in play and you convert it and you send it through organs and you allow it in some cells, you block it out of other cells. And all that stuff is often even more important than just how many balls are on the board. It's not just a lack of hormone, necessarily. And these are things that we've got a lot we can do with in terms of lifestyle and simple food choices.

Katie: And I definitely want to get into those, especially specific foods for specific things, but also as kind of background for this. I know it's pretty well known that hormones do change throughout our lifetime for women, throughout each month, and certainly as we age. But why are hormones changing? And I love your point about that a lot of these times, these things can be addressed without needing more severe interventions like pharmaceuticals. And I know you often also talk about how most things in the body can resolve even on their own. But why are these changing in the first place? And why does it seem like maybe they're changing more rapidly than they have, for instance, in the past?

Dr. Alan: Yeah, so some ways they change, we think are deliberate. In some ways, we change, we think are more tied to diseases and some are more tied to just environmental factors. So the deliberate one, this is kind of weird, but the question as to why humans age, why do we get old and wear out? In theory, we could just
replace all of our old cells. We could just keep on making new skin cells or bone cells. And there are some organisms, like jellyfish, for example, that are practically immortal because they just keep replacing cells. And the original set of cells is never the same that’s there. But as they change, the thing keeps going. But it seems that we have scheduled obsolescence. Like we have patterns in our cells made to wear out in certain time frames. And it's been argued that there are things that could benefit us as a species do not benefit us as individuals.

So this rapid shift in hormones often equates to our lack of reproductive capacity. And we hit a stage in life in which we can't have kids either gender can't. And the thought is that, well, having kids is a taxing thing. But also it's a big demand upon resources. And over time, if there are elders that are never gone, the thought is that there would be fewer resources available for the young and also less time for there to be genetic change and adaptation. We couldn't adapt as well if we never had new genes to adapt to things if they changed. So one reason hormones differ is because we think they do it on purpose. We think our bodies are trying to make us wear out more quickly.

The other thing is that diseases can affect that. Biggest thing here would be like autoimmune disease, like autoimmune thyroid disease. And those can render glands unable to work in the way the body asks them to work. And then the last thing is that other factors can intervene. So we ingest plastics from food storage or from processed foods, or we take in pesticides from the environment. And these things act on these small receptors and change how hormones respond. Or we have a severe stress response, or we're not really in sync with the daily rhythms you mentioned, like daylight. So these are all factors that can contribute. And collectively, this normal cycle of aging, any unwanted disease process that sets up, or these physical and cognitive stressors that we go through, these things collectively cause our hormones to change.

Katie: That makes sense. And I've talked before about how we are exposed to a lot more in today's environment than people were at different times in the past, which I feel like is something good to be aware of. I also don't want people to fall into a trap of being afraid of everything because I think stress is potentially more harmful than the plastics you might interact with. But understanding that we are exposed to more things, it seems good to be proactive about that and to do things to help kind of mitigate that exposure, especially in relation to hormones and to longevity. And we know all of the ways that comes into play. And I know something specific you've been talking about recently is the effect of certain plant foods related to this and especially to the hormone component. So can you explain the phytonutrient hormone thing that happens?

Dr. Alan: This is pretty cool. I mentioned about how we've adapted in various ways. And it seems that our genetics, how our body works, is not different than where it would have been 100,000 years ago, maybe a few hundred thousand years ago. And we've had these long, complex adaptations to our environment and our diet, and we've co-evolved along with a lot of different plant species. And so we now know that we need a lot of stuff from food. We need fuel, we need building blocks, we need certain micronutrients. And that's not the end of the list. That's probably the beginning of the list.
So once we have those things in place, it turns out that food contains massive numbers of signals. And these signals are information that tell our bodies, can tell our bodies to regulate themselves. And an idea of adding a lot of different plants or superfoods to the diet. I think some can think of that as like, well, if you want to become super healthy or you want to exceed your body's baseline function, what we're learning is that no, that's just to have baseline function. Like, our bodies expect these things, and they're not the same as building blocks, like protein that we have to have for structural purposes. And they're not the same as vitamins without which we have deficiency diseases. But we know that without for example, we get cruciferous veggies in our diet and without a lot of the compounds they contain, we don't have adequate liver function. We can't go about regulating our own hormones properly. So we depend upon these things to have just normal capacity to keep our bodies in homeostasis.

Katie: That makes sense. And the idea that food being signals and I know our mutual friend JJ Virgin says your body's not a bank account, it's a chemistry lab. And that's always really stuck with me and it's something I've been trying to really also dial in for myself continually, especially as I get older and shifting my focus.

For a while I thought a lot in terms of macros, especially when I was working on gaining strength and losing weight. But now thinking in terms of nutrient density of whatever I'm going to eat and how can I maximize nutrient density. But I feel like even understanding that it can get confusing sometimes to try to know what specific food should I be prioritizing and how much and which plants specifically. So I'd love if you could go into some detail, that maybe give some examples of specific plant foods and how they benefit the body.

Dr. Alan: So one category we know brings in the importance of diversity of plants is just fibers. We know that fiber is not a thing, it's a category. There's at least 16 types that we're aware of that each do important different things. And by having a large category of plant foods we get a large category of these types of fibers. And this comes back to the gut and its ability to help our bodies with regulation and immune response and the gut flora. So in terms of specific foods and fibers, we think about the categories of all the known types of plants we can consume. The seeds, the nuts, the legumes, the intact whole grains, the veggies, the fruits. And each of these things has many subtypes of foods that contains different categories of fibers. So you have the better array that we can consume.

And we're learning that, like you were saying, it was tempting to think about foods as their constituents only like what are their macros, what are their micros. And I've thought about that a lot too over the years. And now the emerging ideas about foods more as a matrix and not even just the individual food and its complexity, but the context of the food within the overall diet and how these things within the foods interact within each food, but also from food to other food. So yeah, there's this broader matrix and its effects are more than its parts.

Katie: That makes sense too. And I think this is kind of a new concept to understand. I also know, you've talked a little bit about the idea, can plants make hormones like people can? And if so, can you explain that concept?
Dr. Alan: That's kind of a weird one, but biochemistry uses these different types of building blocks and these different reactive compounds and I think about each one as like a Lego piece. How many Legos are in the box? Right? So there's actually not all that many Legos in the box. So amongst all the different living things, it's quite redundant in terms of how we structure our bodies or how plants structure themselves, how they're regulated. So yeah, plants make the same hormones that humans make. Almost all known ones are present in various ways.

And it's funny, at a very crude level, like, I always keep a few props nearby at a very crude level, pistachios have this incredible density of melatonin. Like they've got amounts that are greater than we would consume in melatonin supplements. But when we see the effects of pistachios on melatonin output, it's not that you consume them and then your blood levels go up in immediate term, but when your body would normally make more melatonin, it makes much more than it would have necessarily just on its own, and more than the amounts in the food would predict. So yeah, they're actually present in foods. Many hormones are. But their effects upon us aren't just that crude. It's not just like you're eating a hormone per se, but when you ingest that, your body will make more or less of its own. It might even do it at different timing, and it's in greater amounts than you would find in the food itself.

Katie: That's really fascinating to me, and especially the idea that it's not going to cause an immediate rise in that particular thing, but it's going to happen in cycle with what your body naturally wants to do. So it's like it's giving it the building blocks versus overriding. And it seems like we've had this movement toward supplementation making things so much easier and people wanting to just directly supplement, like we mentioned vitamins and how those can cause a deficiency. People can kind of just think pure cause and effect. But it sounds like to your point with phytonutrients, we're talking more about the building blocks that your body needs to actually do these things itself. Not that you're taking a thing exogenously to alter the body in the same way you would with other supplements.

Dr. Alan: One recent count I saw suggested that our bodies operate on about 9,346 different chemical pathways and that's individual chemical pathways, of course, their interactions from pathway to pathway just go beyond our power to understand. We've got some basic ideas of how some interact. But yeah, it's this complex chess game where one change here, changes other things there. And it's easy for us to think, oh, if someone in this state has this thing low, we want to make that thing higher again and reach in and tweak or hack or change that thing. But we can never say that's the one pathway. We can never pull that one and say that's the one problem. So, yeah, the more we can work with the body to help it do its own regulation better and that's the awesome thing, how our co-evolution with food has given us tools to improve upon that.

Katie: This is so fascinating. I'd love to go deeper and maybe go through some examples of like with the pistachios and the melatonin in specific ways that these phytonutrients can support or help the body do these things more optimally itself. So can you maybe give us some examples of some other specific plant foods and what they're supporting in the body?
Dr. Alan: One of my favorites, another prop I have on hand, I don't think I'm stained from this one, but I had a little beat here. I get red handed from these things quite a bit. One of my favorite breakfast these days, I'll dice these and just throw them in at the oatmeal and give them some time to cook. And if they're not in the tiniest, if they're small enough and you get red oatmeal, that's not bad. But if they're a little bit bigger, you don't get red oatmeal. And if they cook for 10-15 minutes and they're like, I don't know, the size of a dice, literally, they're soft, they're real nice flavor, they work great in that.

But beets, there's been so many studies about their effects upon oxygen utilization. And so this is energy production. This is how well we can actually make energy. The difference between us and plants is that we can burn oxygen for fuel. They give off oxygen. So they take energy from the sun and they make that into various types of carbohydrate and they use that. That's cool. That's not enough power to move around. If you want the power to move around, you've got to use oxygen and make energy with it. And so beets contain phenolics that have been shown to raise our oxygen capacity by 27% in a matter of just a few weeks.

And this is something to where endurance athletes have known about this for quite a while and they've really gotten into it. There's all kinds of beet products, many, many large, high quality studies showing that beets make a huge difference. But now researchers are realizing that, hey, this is not just taking an athlete from here to here, this is taking someone who's wiped out from there to there. It's the same process. So we all want to be able to make energy more effectively. That's not just making energy, that's burning fuel. So when you burn fuel better, you don't store fat as much or you break down store fat and you get energy out of that. So it's a double win. But beets do that rapidly. And yeah, that's great. If you're trying to go further and faster or if you want to just get through your day and be more active at the end of the day.

Katie: And I'd love to even go through kind of by life stage a little bit about maybe some of the specific plants that can be supportive in those different phases. Because I think for the people listening, we probably have a spectrum of everybody from maybe even some teenagers or people in their early 20s all the way up through people past menopause. In the case of women, I would love to talk about sort of some of those different phases, maybe starting with perimenopause or menopause, since we already touched on that one a little bit. And some of the foods that might be supported that people may not just commonly think of as being helpful.

Dr. Alan: So perimenopause and menopause. So a lot of what's going on there, the body is working with changes in estradiol and progesterone. And I mentioned how it's about the reproductive years stopping. I think about what the things, the various things the body has to do and how much think about like a cost, how much that costs the body to do something. And the most expensive thing we can do is make a baby as far as how much it taxes us and how much it demands upon us. So anything that makes our bodies less capable of performing in that way is a huge, huge drain. And that's why we think that this capacity winds down around that stage in life. And it's not just that the hormones stop. It's that estradiol fluctuates. So there's many years to where it's going up and down rapidly and then it does finally come down and those up and down rapidly years that we call that perimenopause. So the periods haven't quit, but they've often got erratic. And once they quit, we define menopause as no periods for 365 days. This is stupid trivia. It's kind of a goofy thing. Do you know how long menopause lasts?
Katie: No.

Dr. Alan: If you look at the medical textbooks and how menopause is defined, it’s one calendar day. Once you’re more than a day past that 365 mark of more periods that’s now post menopause. And menopause doesn’t start until a year afternoon period. So isn’t that dumb? It’s actually just one day by the book. But the relevant thing is, of course, the experience. And the experience is all the way from perimenopause to post. So what’s going on is estradiol is going all over the place. And the adrenals make a backup estrogen called estrone. And if it’s smooth sailing for them, they can make estrone in ways that complement, but don’t overlap with this changing estradiol. And that’s going to be a situation to where a woman, her periods quit and she’s like, oh, whatever. She kind of feels fine. And no big changes to her health, no major symptoms. But that’s not always the case. And more often than not, that’s not the case.

So we think about ways to help that estradiol level be more stable and not fluctuate as much. One of the things you don’t hear about that does a lot this way are figs. There’s fresh ones you can find sometimes and dried ones that are readily available. So figs have a special kind of phytoestrogen called 7-methoxycoumarin. And phytoestrogen, this is a loaded term. So we think about plants having hormones. And there’s a lot of valid ways in which people are wishing not to just willy nilly ingest all kinds of estrogens. And it can seem logical to think, oh, wow, if there’s estrogen in these plants, I don’t want to consume that. But there’s so many levels of depth to this. So we know that there’s two big ways that estrogen can interact with the body many more, but two main ones, and that’s based upon the receptor types. So a hormone can be thought of like a key, and receptor is like a lock. And some keys fit in some locks but not in others.

So one category of estrogen receptors does a whole lot of stuff that we like to have done. It gives us thicker collagen, nicer skin, stronger bones, better brain cell repair. Another category of estrogens we generally want to pump the brakes on later in life. Those are the receptors that cause breast cell turnover. And those are also the ones that thicken the endometrial lining. And those are ones that can change how the vascular wall repairs itself. So when things go badly, these can correlate with breast cancer risk, endometrial cancer risk, stroke risk. But it’s all estrogen, right? But it’s different receptors. So think about those things again as like, keys. Now, one of those keys you want to have going, one of those keys you don’t.

So, what the estrogen in plants does, they actually act selectively. And the one key that does the good stuff, they go in there and they polish that one, and they blow out the dust, and they properly lubricate it. So that key works even better. That lock works even more efficiently. But the other one, they basically pour wax in there and plug it up so they stop it from doing much of anything. So we call that effect, the effect of a selective estrogen response modifier, or the term is a serum for the acronym. And that’s what plant estrogens do, like figs, they actually help them in good ways and block them in bad ways specifically for perimenopausal symptoms. There’s a lot of things that have been shown to lower hot flashes and night sweats. Figs, soy, turmeric are some top ones that I talked about. But figs have also been shown to reverse a lot of other low estrogen symptoms, including atrophic vaginitis, thinning hair, and changes in bone health. And, yeah, they’re working by helping those good locks work better and plugging up those bad ones.
Katie: I had no idea about that with figs, but I'm now excited to consume more of them. And it kind of makes sense because I guess a similar one I would relate that to is I did a post one time and there's actually research on dates during the last trimester of pregnancy, and it helping the duration of labor and typically a lot of labor outcomes. For the same reason, I'm supporting some of the natural hormone cascade that's going to happen during the birthing process. And I've now heard from thousands of readers, probably who have tried that. It's like six dates a day was the clinical study who had much shorter labors. And with my last one, I always had typically like 24 hours labors. And with her, I was militant on making sure I ate dates every day and I had a three hour labor start to finish with her even seeing breach really highlighted for me how powerful plants can be. That wasn't a drug, it wasn't a pharmaceutical, it was just dates. And it really worked.

And so I know it can be like maybe it could be easy to doubt, like, can a plant really do that much? And I've seen it firsthand, at least in that instance. What about for women who are still having a monthly cycle? Are there foods that can be supportive in general and or at different points during the cycle with the hormone cascades that are happening?

Dr. Alan: Yeah, for sure. One that I talked about too is the simple thing is walnuts. So these have a unique compound called walnut oligopeptides. And what happens is that how we regulate the hormones during the menstrual time is mostly about how well we eliminate hormone byproducts. So that's a time in which we're releasing hormones from the ovaries and the adrenals. They move throughout the body and then the liver's got to chew them up and get rid of them. And it basically packages them up with inert amino acids, sends them along their way. That doesn't always work the way it should. And what walnut oligopeptide do is they help the body with the production of those conjugating proteins.

Think about it. Like your liver is basically putting fuzz on velcro so it won't stick anymore. Like if you get like cotton or something on it, that's what this does. So the oligopeptides put more fuzz on those compounds so they're now properly conjugated, and then they can leave the body. When the liver doesn't conjugate the things right, they still get sent to the intestinal tract, but they come right back in and the body reabsorbs them. It's called enterohepatic recirculation or retoxification. And the hormones can act like toxicants in that case because you get double dose, not just with them, but with their byproducts. But compounds like walnut oligopeptide can prevent that from happening.

Katie: Wow. Which makes me wonder, are there any other foods that also support the liver? Because most people probably are aware of how important our liver is. And I also know, for instance, that nonalcoholic fatty liver disease seems to be very much on the rise right now. And liver health being so connected to so many aspects of health, and like you just explained, hormones. Are there any other foods that are especially supportive of the liver?

Dr. Alan: Yeah, for sure. It's a great question. So a category of plants that has some of the best effects, this only don't hear about a lot, but the family is called Apiaceae. So A-P-I-A-C-E-A-E and this includes things that
are not uncommon, but they work collectively together. So carrots, parsley, and parsnips are some of the big examples of Apiaceae. Parsnips are such good foods. Actually, I love to throw those with my beet oatmeal. I'll dice up some parsnips and throw them in there as well. But what these things do, they're regulating more so the phase one pathways. So the liver we can think about as having several key steps, but mostly breaking stuff down and then putting stuff inactivating it, putting onto something to make it inactive. So the first part is breaking things down. The liver has to break down the right things and break them down in the right way. And Apiaceae vegetables do a really good job making that process work better, especially related to how it's processing the body's own hormones. So, yeah, carrots, parsley, parsnips, those are some of the good examples of that.

Katie: And we've talked a lot about women in different various phases of hormone changes. What about for guys? I know I've read some pretty staggering statistics about testosterone levels in men, and the often quoted ones are guys having a third of the testosterone as their grandfathers at certain ages. I know there's a lot of concerns about sperm count going to even potentially zero in the future. Are there foods that are especially supportive for guys in the same hormone supportive way?

Dr. Alan: Yeah, lots of good ones. The sperm count story is a fascinating one. We'll see how that plays out in the future. But it's a clear trend if trends continue or not, that might, may or may not be the case, but it could be a big deal. And yeah, there's a normal decrease in the amount of active hormone in men as they age, but there's also a lot of changes in how they respond to that hormone.

And this is funny, I've thought about this a lot. One model of aging is that it's simply too little hormone. But what I was saying before about the metabolic cost of things like the metabolic cost of carrying a baby, for example, to a family budget, that's like buying a house. That's like the biggest thing there is in the budget. But making hormones, I don't know. That's not even buying a coffee. There's like almost no metabolic cost to that. So the idea that men simply lose testosterone because their bodies have lost the capacity to make it, that it's too hard to make as much anymore that doesn't fit with how the chemistry of it works.

So there's more arguments now saying that there's factors about the body responding differently in ways that may be more deliberate. And even with the total amount of hormone changing, there still are a lot of ways in which the body responds to it differently. So, for example, testosterone is one of the hormones that sends fuel to the muscles or to the organs. It's a visceral fat or to fuel the muscles. And we know that as men age, a huge thing is this loss of muscle mass. And it's such a strong predictor like all the bad things that happen with age. And many studies tried to track it just a total testosterone. And there's not that strong of a correlation, but there's a very strong correlation to that with the metabolism of testosterone and where testosterone sends the fuel types.

One study that I've cited, onions, plain old onions, and this is even a double blind, placebo controlled study, they gave the group of aging men an additional couple grams of onions per day. And like kitchen units, like a few teaspoons, this is not like massive amounts, but greater amounts on top of what their typical diets were. And they compared them to another group of men that was consuming more common amounts. And what
they showed was that the additional consumption of onions had a measurable effect upon which receptors were responding to the hormones and correspondingly the total quantity of visceral adipose tissue or that toxic, dangerous fat. So, simple thing is onions. And it's not going to change someone's testosterone levels in their blood test per se, but it can change how testosterone works in the body in ways that are important.

Katie: Yeah, I think again, if people are tempted to discount just how profoundly foods can affect the body, I think of another friend of ours, Dr. Terry Wahls, and how she was able to reverse her MS and get out of a wheelchair and was doing triathlons. And one of the foods that she recommends in large amounts is onions. Especially for those probably some similar specific reasons of how that supports the body and muscle.

This episode is sponsored by Hiya Health, which is my go-to source for multivitamins, especially for my younger kids, before they can swallow pills. Typical children's vitamins are basically candy in disguise, filled with unsavory ingredients and things you would not give to your children otherwise. Most brands on store shelves are filled with sugar, unhealthy chemicals and other gummy junk that growing kids, or frankly, anyone should never eat. And this is why I'm so glad I found Hiya Health. Hiya makes children's vitamins with zero sugar and zero gummy junk and unsavory ingredients. Yet they taste great, and they are perfect for picky eaters. They're also nostalgic and remind me of the children's vitamins I took as a kid, though I probably wouldn't love those ingredients. Hiya is unique because it fills the most common gaps in modern children's diets to provide full body nourishment for our kids, with a yummy taste that they will love and you will not have to fight them over. They manufacture in the USA with globally sourced ingredients that are each selected for optimal bioavailability and absorption. And the best part? They arrive straight to your door on a pediatrician recommended schedule, so you never have to worry about running out. Your first month comes with a reusable glass bottle that your kids can personalize with stickers. So in the case of my kids, with six of them, they never get them confused. And then every month after, Hiya sends a no plastic, eco friendly refill pouch of fresh vitamins. Which means that Hiya isn't just good for your kids, it's also great for the environment as well. So you as a mom no longer have to worry about running out of vitamins, and they will automatically arrive when you need them. You can check them out and get them for your kids by going to Hiyahealth.com/wellnessmama. And you'll also save 50% on your first month.

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even in the habit of getting some of their blends started in the diffusers to keep our entire house smelling amazing. And they have very specific blends for every malady you could think of, whether it’s an upset stomach or respiratory issues, whatever it may be. They have a blend specific to that. And I always keep many, many of their blends on hand. You can find out more and get an exclusive discount by going to plantherapy.com/vip/wellnessmama and make sure to use the code wellnessmama for 10% off your first purchase.

I’m curious, are there any other things that are especially supportive for maintaining muscle as we get older? I’ve had Dr. Gabrielle Lyon talk about muscle being actually the largest organ system in the body. And we know that at least on average statistically, we lose a little bit of muscle every year after a certain age. But also that maintaining muscle mass and even just metrics like grip strength really coordinate with longevity. And this is something that’s very top of mind for me every year that goes on, just because I want to be very active in picking up, hopefully, my great grandkids one day. So are there other foods that are especially supportive of muscle mass?

Dr. Alan: Yeah, that’s a great one. So the other big category would be berries and blackberries, probably more than others. There’s been data saying that they have effects upon offsetting sarcopenia specifically. And amounts are not huge. This is really just like an ounce or so per day. But in addition to the regular diet and some data on rosemary as well, and I talked about that one in the context of its effects upon brain fog. There are ways in which plants can work rather quickly as well. Changes in muscle mass takes time. It takes time for new cells to grow and old ones not to break down. But some symptoms, like cognitive function, can change very quickly. So yeah, these things can act in fast time frames for some symptoms.

Katie: Yeah, that’s another question I had is how quickly can people see a change or start to happen just from food intervention?

Dr. Alan: The way I think about that is there’s how the body works and how the body is built. So you put things in two categories and some symptoms are more tied to how we’re built. Like hair loss could be an obvious example or bone health. But also like a lot of muscular symptoms, chronic pain, tendinitis, and others are based more on how we work in that moment. So, energy, mental alertness. Now, the things over here, how quickly they can change, is a function of how quickly new cells replace old cells.

One of the quickest examples in this category would be gut health. So the intestinal lining those cells replace themselves in a matter of minutes and hours. It’s very, very fast. And so positive change that improves gut inflammation and gut repair can improve health and symptoms very dramatically in a matter of days. On the other extreme could be things like bone health or brain volume. Those are things to where the cells turn over very slowly and that can take years to see measurable change.
But then over here, we think about the more functional symptoms like the production of energy or mental clarity. So yeah, as our chemistry changes or as our body's priorities shift, those things can improve in the moment. And some studies that I've talked about have shown that, yeah, interventions that are done immediately before a measurement can have clear changes.

Katie: That's so fascinating. And it's no secret that we're eating fewer vegetables than we used to and a smaller range of vegetables than we used to. And this seems especially true in kids. And statistically, on average, most of us are eating more things like refined foods and vegetable oils and things we didn't even used to eat at all. But for many of the parents listening, it's also probably very top of mind for our kids. And I know there's a lot of the memes abound about getting kids to eat vegetables to begin with. But are there foods that are especially supportive for kids at various ages and phases of childhood or is it more of a wide variety at that phase? I know I've got kids all the way from seven to now, several in the teenage years. And puberty phases. Are there ways we can specifically support those phases for them with what we feed them?

Dr. Alan: You know for sure. And there's tons of hormonal change going on then as well, of course, especially coming into puberty. Like you mentioned, the things that are most relevant here include those that are acting upon those phase one pathways I mentioned before.

So the Apiaceae vegetables which we talked about in the context of fatty liver are also super critical for helping puberty go more smoothly. And yeah, the carrots, the parsley, the parsnips, those are ones that especially the carrots and parsnips, they're easy to sneak into things. I shouldn't even be on the mic talking about how to get kids to eat good foods when you're on the other end of the discussion here, because you could say that better than anyone can. But yeah, those are foods that are easy to work into a lot of different things.

Katie: Yeah, absolutely. And in my house right now, it's partially I'm just trying to make sure I make enough volume of food for as much as teenagers will eat, especially when they're athletes. And protein being seems a key when they're working out so much. But also we have some just funny house rules. Like they all eat at least one carrot per day because it helps with food volume. And then I'll do a lot of stir fries to your point, with sneaking into things and I'll just try to sneak as many different vegetables as possible. And with the little ones, we'll even sometimes play a game of seeing how many they can identify in it and sometimes they'll still miss them even if they're all trying to find them. So I love that idea. Let's see, what about in the pregnancy or postpartum phases? Any specifically hormonally supportive foods at that point?

Dr. Alan: Yeah, pregnancy and postpartum. This is a time to where now there's a big transition going on as well. So the body has almost numbed itself to estrogen progesterone because levels were higher than ever. So this is a time in which there's a need for more hormonal binding. This comes back to the importance of dietary protein as a generality again, but this is also relevant to a compound called resistant starch. We've got a lot of data saying that the amount of butyrate in the large intestine correlates with how well the body can buffer the big swing of during pregnancy, the amount of estrogen progesterone is higher than it is during any other time in life by orders of magnitude. So the body has to quickly down regulate and adjust to that. And a lot of
Postpartum depression is that adaptation not going well. That's not all of it. There's tons of factors, just the changes and whatnot that are relevant. But that's a big thing. All of a sudden, the body is going from 60 to zero and it takes time to recalibrate that.

So the butyrate content in the large intestine makes that go better and we make more butyrate from resistant starch than from any other source. So a big variety of healthy foods contain this. White colored beans are really rich in that. Plantains and bananas have quite a bit, especially when they're less ripe, and some versions of potatoes are quite dense in it as well.

Katie: And is it true, I've heard as a tip that cooking things like potatoes or white rice and then letting them cool can increase their available resistant starch. Is that true and would you recommend that?

Dr. Alan: It's totally true and it's kind of weird. There's six known types of resistant starch. Two of those are just man made, but other ones are naturally occurring and one is called retrograde or RS3. And yeah, that forms by a cooling process. So some foods that have it will have it more bioavailable when they're cooked at low temperature and when they're cooled, this retro granulation causes more of it to form. So yeah, so potatoes, especially when they're boiled and then chilled and you actually can do this a few times with leftovers, each warming and chilling, you'll get more RS out of that. The other example is rice and especially high amyllopectin rice. So that's shorter grain, like a sushi grain or medium grain type rice. When that's cooked at boiled at lower temperatures and then refrigerated, it makes more of that.

Katie: Another good reason one of my bulk cooking tips with kids is I bulk cook a ton of protein of different types at the beginning of the week with just neutral sea seasoning so it can go lots of directions. And I also bulk cook a ton of rice and potatoes and then put them in the fridge so that for one, it saves me a ton of time at dinner time, but also for that reason to kind of up the resistant starch intake from it as well.

I'm also curious separate of the different hormonal phases of life, if there are specific foods that can support different more daily hormonal processes like circadian biology, like you mentioned already one, but I'm curious if they can help, for instance, support light tolerance and getting enough sunlight. Like we've talked before about how sunlight is important. I've noticed anecdotally if I consume Lycopene from things like tomato paste, that actually seems to help my sun tolerance. There's a lot of supplements that are alleged to help with that as well. As well as it seems like there are certain foods that do seem to help with sleep. So I would love your take on any foods that can be supportive of good healthy light exposure or healthy sleep patterns.

Dr. Alan: Yeah, for light exposure there's good data on lycopene being relevant for sure, and yet tomatoes are good examples of that. This is something to where this comes up a lot to where we'll find a phytonutrient doing something in foods and then that'll spawn some studies on that isolate in supplements. And it doesn't always work the same way.
And what we're learning is that the phytonutrients, it's not so much they work because we need a lot of them there to fill a block, to fill a gap, or they're not building blocks. We think in a lot of ways they work is by this process called hormesis. And it's kind of weird, but hormesis is like things that are bad for us actually help us to get stronger. So one of the easiest examples of this is exercise. When you push your body to do a little more than you're used to, you come back stronger. Now, it's quite dose specific. If I were to take this piece of paper and do repetitions of lifting it, it's not going to do much. There's no challenge here. Or if I took like 100 pound block, which might be okay for some guys, that would probably tear my shoulder, right? So it's all dose specific.

And we find that these phytonutrients, they're actually things that plants make as defenses. They're naturally occurring plant defenses. And if we could purify them and consume them in massive quantities, there's no question they would be poisonous, like fatally poisonous. But the amount that we find in plant foods and in the context of those foods, they make our bodies stronger. So like glucosinolate in broccoli. That's an insecticide that broccoli makes. But that speck of it that we get in broccoli, when that passes our liver, our liver thinks, oh, wow, this might not be a safe day. Got to up my game. I got to get a little stronger here and work a little bit harder. So yeah, that's how they tend to be more effective.

And things that specifically act upon sleep pathways. I mentioned the pistachios as one. One that's had some good research is actually black cherries. Now, this is fascinating. They are a dense source of melatonin. Not all that much, though. And they've shown that ingestion of cherries does increase the body's own melatonin to a much greater amount than we found in the food itself. They're a more short acting effect. So their greatest effects occur when they're taken closer to the end of the day. The other really cool thing about them, there have been studies on them with seniors and with seniors, the biggest thing is a fall. It's not that aging is not this. Aging is that like, certain episodes cause us to rapidly lose our resilience and our functionality. And one of the biggest ones there is a fall, a major fall is like 50% mortality in the next year for a senior. And so cherry has been shown specifically to improve depth of sleep and also to offset dizziness. And that's a tricky thing to balance any sleep aid you can think of, it's going to make someone loopy and dizzy and more apt to fall but cherry is not at all the opposite.

Katie: Well, and your explanation to me makes a really strong case for eating a wide variety of foods and getting as much as possible from foods, even if you do still end up needing to, for instance, take magnesium or something specific with a practitioner.

Dr. Alan: Sure. And super briefly. So, like, vitamins and minerals are not working via hormesis. Those are things we do need as building blocks, as cofactors. They're not like a grain in an oyster shell. They're not stimulating response. They're part of a mechanism. But these things in plant foods yeah, it's a whole different set of quantities we're thinking at, and the amount in food is what we need.
Katie: So varied plant sources. And it also, I would guess, is a response to a common objection that I see circulating right now online of people who are choosing not to consume any fruits or vegetables and saying that all plants contain toxins. And it sounds like what you're explaining is that is technically true, and that's actually a good thing when we get them from plants. I'm just making sure I understand.

Dr. Alan: You totally nailed that. It's true. And yeah, those are toxins that are good for us. There's mountains of data on that. Yeah. There's so many things that are unclear in nutrition or epidemiology, but the idea about more plants in the diet being beneficial, that couldn't be more clear. There's this massive data sets on that. And we know about the relevance of the gut flora. One thing I've said is that if your diet is devoid of plants, you're taking antibiotics. You're killing your gut flora on a daily basis because nothing else feeds it.

Katie: Wow. Yeah. When you think of it that way, that makes a really profound case for consuming a wide variety. And as you're talking of all these foods, I'm already making, like, warm salads in my head of ideas. I can put them all together for dinner.

Another just very self-serving question I'm curious to ask. Are there any foods that are specifically supportive for athletes? I know that you're a very active person as well. All my kids are now very active, and I'm trying to run a pentathlon for the first time. So any foods that can help me out?

Dr. Alan: There's so many good ones. I did mention beets before they've got the most research. Probably the number two would be oats. There's been a lot of data about specific effects upon offsetting fatigue, increasing VO2 max. Probably number three would be almonds. And one really good data was on cyclists, and it was comparing almonds against an isochoric, iso macronutrient food isolate, basically. So the exact same calories and macronutrients, but not from that same food matrix. And, yes, immediate effects upon performance. So, yeah, beets, oats, and almonds. But beets are phenomenal. They're so powerful. Beet juice can work as well. And this comes down to nitric oxide pathways, we think.

Katie: All right, well, note to self, adding more beets and figs and all kinds of things to my diet too. And then I want to make sure we have a few time for a few last questions I love to ask. I know that you are working on a project and about to release that's very supportive of a lot of these things that we've talked about. Can you give us some background on that and explain where people can find it?

Dr. Alan: For sure. So this is The Healing Hormone Cookbook and I've done a lot of different books that have had a few recipes in them, but this one is just all about recipes. I talk a bit about kind of like our discussion about why these things help and what are the mechanisms, and here's some studies about that. But then I jump into the recipes and I broke it down on those five top symptoms. So you can grab the book and say, hey, I want to have more energy, and here's a two week menu plan and shopping list that revolves around those particular ingredients. Or you can just grab and pick and choose. And all the recipes will help any of those symptoms to some degree, but some are more focused on weight, energy, mental clarity, sleep or hot flashes. And wherever books are sold. Hormone Healing Cookbook. Amazon, Barnes and Noble. Always nice your local

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book source and love, but it's all ways you can apply this. And it was so much fun. I spent a lot of time with these foods and I wanted to make it to where it's just the stuff you can find in pretty much any grocery store and just a couple of ingredients, half an hour or less and like crazy, crazy tasty.

Katie: Well, I love it. I'm very excited to begin trying those recipes myself and I'd love to do a rapid fire to touch on your answers to the question I often ask in prep, which is what are three things that people don't know or misunderstand about your area of expertise? So the first one being you say diet is more powerful than prescription hormones. We definitely touched on some of the reasons why today, but can you give us just like a rapid fire synopsis of that?

Dr. Alan: Yeah, for sure. So we mentioned about hormone replacement. Many papers have shown that these kinds of changes are more powerful than hormone replacement therapy for benefiting symptoms within endocrinology. My sub-focus is thyroid disease. We now have clinical trials showing that dietary change can reverse adult forms of thyroid disease 78% of the time. And if we go further and say, okay, what if we talk about those who really do follow through things and ignore those that are not compliant? And what if we say add in those who not only not just fully reverse disease, but radically improve it? That number goes to 97%.

So at the same time, we're seeing that thyroid medications in the vast majority of those who are prescribed them do not benefit many of the common symptoms. So, yeah, this is a case to where not only can it work better for helping symptoms, but it can reverse the disease more consistently.

Katie: Wow. That is a staggering statistic, and probably a very hopeful one for a lot of people, like how I used to have thyroid issues. And now they're resolved, a testament to the work that you do, and you are my doctor that helped me through that process. The second one was that most lab tests are not accurate. And I love that you put this on the list, but can you explain?

Dr. Alan: Yeah, boy, there's a lot of reasons why in terms of how they're done, how they're timed, how they're interpreted. But one simple thing is, if you do them again, do you get the same results? And there's countless tests that are measuring things that I would love to know about, like the level of certain vitamins or the activity of this antioxidant or whatnot. But when you take that test and you have someone draw more blood than they need and measure it twice, you get totally different results. It's called split sample consistency. And sadly, a huge number of tests that are out do not have split sample consistency. And people put a lot of energy into chasing things they thought were wrong or things they thought might help for reasons that are just not accurate.

Katie: That's really good to know. And it lines up with how you talk about most things in the body will eventually or can resolve on their own. And I'd love that you take that approach and give tools to help it happen more easily as well. And then lastly, I think this one is important to address as well. You said nutrients have a sweet spot and more is not better, which I wanted to touch on because I have a feeling people might
listen and say, oh, this food does this, I'm going to eat five pounds of it. So explain maybe the bell curve situation happening there.

Dr. Alan: The bell curve thing. So some things, like phytonutrients in our discussion we had earlier about hormesis, that can make sense and you just the right amount of weight to exercise. But other nutrients, they will work in ways to where if there's too much, they will overload how they're absorbed quite commonly. And so, paradoxically, many nutrients and excess looks just like a deficiency as far as the symptoms. You get too much, your body makes itself numb, it quits absorbing it, and now you end up with even less. So a strong example is iodine and thyroid function. We see this with magnesium and bowel tolerance. We see this with many, many nutrients. So there's a certain amount we need. And it's tempting to think that if I'm tired because I lack in a nutrient, then the more nutrients I have, the more energy I'll get. But there's often a point at where not only does it quit working, but it goes the opposite way.

Katie: Good to know. And I encourage people to grab your new cookbook and actually all of your books because they've all been very helpful to me. I'm, like I said, very excited to try out these recipes and especially with my kids, getting wide variety of foods is always a fun game with them, so I'm excited to try them all. A couple of last questions I love to ask. The first being if there is a book or number of books that have profoundly impacted you personally and if so, what they are and why.

Dr. Alan: That's a great question and I've had the pleasure of the privilege of talking to you before and given different answers to this over time. One of the ones I read rather recently was entitled *Four Thousand Weeks*. And yeah, that's about how long we have to live. It doesn't sound like that big of a number. You can make a list of 4,000 and put that somewhere and check that through. But it was a great book talking about how we want to become more efficient and do more things with our time. But ultimately our time is finite in the course of our lifespan, but also in the course of our day. So the mindset that it really encourages is more a matter of being good with letting things go and realizing that's not a bad thing, that's a positive thing about the choices we have. And we can pick and choose those relationships, those things put our effort into that are most critical and realize that we can't get to all of it. That's okay.

Katie: I love it. I will link to that in the show notes as well as to your book so people can find it and to your website so people can keep learning from you. Lastly, any parting advice for the listeners that could be related to something we've talked about or entirely unrelated life advice?

Dr. Alan: Something that inspired me when I first decided I wanted to go into medicine was the idea that our bodies are always repairing themselves. When you and I talked about how quickly symptoms can change and how some cells repair faster than others, nothing is with us permanently. There's a saying how you can't put a stick in a river twice. Once the stick goes back in, it's kind of like a different river. We're like that it's slower, but it happens.
So please know that wherever you are in your health journey, that things do change. And if you're listening to Katie's advice and following some of these types of things, they can change for the better for you in radical ways. Katie and I have seen so many examples ourselves and in those that we talk to, to where that change is just unexpected and radical and someone might have given up hope for a long time. So just know that things are possible, things can do better. And don't give up on that and keep with it.

Katie: I love it. I think that's a perfect place to wrap up for today, but as always, I hope we do more rounds in the future. And, Alan, thank you so much. It's always such a joy to talk to you.

Dr. Alan: Likewise. I love all your work and everyone. Yeah, just keep following Katie.

Katie: Oh, thank you. 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.

If you're enjoying these interviews, would you please take two minutes to leave a rating or review on iTunes for me? Doing this helps more people to find the podcast, which means even more moms and families could benefit from the information. I really appreciate your time, and thanks as always for listening.