

**THE MODEL
HEALTH
SHOW**

EPISODE 395

**The Amazing Connection
Between Fungi, Skin
Health, And Weight Loss**

With Guest Tero Isokauppila

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Shawn Stevenson: Welcome to The Model Health Show. This is fitness and nutrition expert Shawn Stevenson and I am so grateful for you tuning in with me today.

Listen, a big part of my life is dedicated to not just educating the public at large, but also starting in my own home and really educating my kids. And not just in nutrition and health and wellness, which there is the hashtag #fitfam, #fitfamily, I really take that seriously and instilling a culture of health and wellness within my own home.

And so from the very early ages, my son Braden has been going to the park with us and hitting the monkey bars, which should be called human bars, and doing pull-ups, like I'd help him do pull-ups and my older son taking him to the gym and teaching him how to deadlift, and now he's so strong it's kind of absurd. This kid is 19 now and he is playing college football, I think he's deadlifting over 500, squatting something around four, just super strong kid but strong mentally as well.

And that goes hand in hand, is our fitness and our health and our mental fortitude as you very well know. But a big part of the education that I work to instill in my kids is just having a variety of inputs, as far as our culture is concerned. Because our culture does influence a lot about our personality and our decisions whether we realize it or not. So there's so much new stuff, even just talk about music, for example, we got Da Baby, we got Little Baby, we got Baby Baby there's so many different babies making music and I could be one of those parents like, "Wow, whatever, change his diaper," but I'm tuned in in checking it out and I love it, you know I love a lot of the new music as well.

And I'm still pretty young myself, but when I look back on my evolution as I was growing up and my mom being like, "Turn that stuff off, that's not music," when I'm listening to I don't know, Public Enemy or whatever it was, and really understanding that culture and sounds and things change, but we can derive value from all of this stuff. So my oldest son's favorite movie probably is Grease,



which is crazy, like he's a super fan of musicals. True story, last night me and my wife were hanging out, we could hear that my oldest son was downstairs watching Aladdin, 19, because of the musical aspect. And just instilling those things and if you follow me on Instagram I'm @Shawn model on Instagram you'll catch us dancing a lot and listen to different music.

And I think it's just important for all of us to proactively instill a variety of cultures into our children, and it's a big shift that has already taken place in us having shared cultures and cultural experiences. And it's a wonderful thing, but we don't want to get kind of pigeon-holed in one direction and one type of music and not enjoying other things. And the same thing with books and with movies and just expanding ourselves and even stretching our imagination to what we might think that we might not like and giving ourselves the opportunity to try it out.

And that's what I think is one the greatest gifts, is encouraging my kids to try things, and it even happened this morning and this is a thing that we evolved having, this apprehension towards trying things is built into our DNA because especially when we're a child and we don't have instruction, we have it in our DNA that if we eat certain things, it can make a sick and it could potentially kill us. So the things that are safe that we've eaten and we've established this neuro association that these things are safe, a lot of parents wonder, "Why I can't get my kids to try new things?" It's because it has to be done generally with patience, with repeated exposure because there's a built-in apprehension.

Now, when we throw fast food and partially hydrogenated french fries into the mix, it does gum the system up a lot more making it more complex for sure. But if we're talking about real food and our children having a basis of real food in their diet, then adding new stuff, you just got to understand that there's a natural apprehension to doing that. And so I just, I'm so grateful I have encouraged the attitude of like, "Just try it, just give it a try, if you don't like it you don't have to eat it." Versus when I was a kid, "Eat it or you're going to sit at this table until you do," right.

And I'm about that life like I'm competitive so it's just like, "You're challenging me to eat these baked beans or I'm gonna sit here? I hope you're willing to stay up because I am, mom." And so I'd sit there for hours. And of course, like somebody's going to buckle under the pressure but that's really not the way that I like to teach, it's more like just be more inviting and more inquisitive. And



also sharing some of the benefits or reminding them that, "Hey you like this thing, you might like this." So it's just like Megan Thee Stallion has a new song out which is a little bit of a 2Pac remake all right, I rather be your— if for those that know, they know. And so my son mighty here this one and like, "Wait a minute, you got to hear the 2Pac version too, and so you can establish that full, well-rounded association.

And I've taken time to just even sit down with my kids and like watch different things that I kind of grew up with. One of our favorite movies is the Last Dragon, Bruce Leroy. One of the few movies on Amazon that are fully 5 stars, not 4 and a half, fully star, thousands of reviews, and it's just a big part of us, my culture growing up. But just taking the time to instill a culture in the things that we're doing, and the same thing that I've been intentionally doing with our nutrition as well and having a wide variety of things.

So my son recently has been really into drinking tea in the morning which is just like, it seemingly came out of nowhere, but this is the behavior he has been seeing me do for years. And he's never really been interested in, but he's just looking for how can I get a little bit more of a performance boost or mental boost in my training or at school. And so having it available and then leaving them to their own accord.

So I hope that makes sense, it's just I'm very passionate about this, about giving our kids the opportunity to be exposed to different things and having patience because I know it's not easy, being a parent, especially we stress, we got a lot going on, especially some of us— one kid can be 20 handfuls, but then you throw in more kids into that mix.

We had many guests on the show like Steve Weatherford is a good example, a man has 5 children, 4 daughters and he's had to find a way to have relationships with his entire family, so he schedules every Friday, he dates one of his daughters, he takes one of his daughters out for a little mini-date, one of his little girls and daily he has rituals with his son, built-in as well.

And so we have to find ways if it's important to us, we have to find ways because our children truly are the ones were handing the baton to and us transforming our world. And so I just wanted to take a moment to share that and to share a little bit of insight there. And a big part of our nutrition regiment even with our kids, my son Braden, he'll have a hot chocolate but it's got the



mushroom-infused, medicinal mushroom-infused hot chocolate, a lot of mornings while my wife and I have mushroom-infused coffees and things like that, and just like it's just a nice thing, especially on the weekend, we just sit and chop it up together and enjoy, while we're having this infusion of nutrients.

And so it's really cool stuff, so much stuff for us to experiment with. And today, we're really looking at like what is the next level because it's not just the internal nutrition, it's the external nutrition as well, beauty truly is from the inside out first and foremost, the vast majority of that, but there are topical things that we need to consider because the skincare industry has really kind of preyed on our insecurities.

And they've done that, but they have not provided real solutions outside of a barrage of chemicals that tend to make things worse and create this dependency on continuing to put topical things on because it's not addressing the underlying cause of the problems whether it's acne or dry skin or things of that nature. So I wanted to talk about that today. And I thought there wasn't anybody better to have on than somebody who's actually really examined the industry and who has an inside track into like one the biggest organizations as out there as far as like topical beauty, makeup and things like that.

And just to talk about even in relationship to our body composition, like where are we at right now with the microbiome in the relationship between this kingdom, it's an entire kingdom, we've got the plant kingdom, animal kingdom, it's an entire kingdom that is so overlooked, and I just want to end that today and make sure that we understand that this kingdom is important for our survival on this planet.

Because truly, we've evolved with so many things that we have kind of lost our connection to over the years, just kind of like things with our culture and even looking back further and having it lineage; how can we reconnect to our ancestors through our nutrition and through our education as well. And so I'm really excited about this episode and we're going to bring him on in just a moment but the first thing I want to do for you is to jump to our Apple podcast review of the week.

iTunes Review:

Another 5-star review titled "Great content, great energy" by Omega fruits. "I've been listening to your podcast for a good while and each episode fills me with joy, useful tips, and resources. Your energy is great and consistent. I often



recommend your show, keep it flowing."

Shawn Stevenson: Keep it flowing. Thank you so much I appreciate that very, very much, and listen this is a big part of the energy behind what I do is this amazing feedback and just letting everybody know what you think about the show. And I've got a huge mission behind this and I'm just so grateful for you being a part of this mission with me, so thank you, thank you for tuning into the show. And if you've yet to do so please pop over to Apple Podcasts and leave a review for the show, and make sure that you're subscribed.

I can see the metrics there is a percentage of people who listens to the show all the time but they're not actually subscribed to the show, so make sure you hit the subscribe button so that you stay up to date. We got some really, really amazing stuff coming up here, and I want to make sure you don't miss a single drop of it.

And none more important or educational and entertaining as we have for you today with our special guest Tero Isokauppila. Tero is the founder of Four Sigmatic, a wellness company helping people to nourish their bodies inside and out. His roots are in Finland where he grew up foraging for mushrooms and other wild foods on his family's farm. He later earned a degree in chemistry, business and a certificate in plant-based nutrition at Cornell University.

In 2012 Tero founded Four Sigmatic with the dream of bringing a little everyday magic to the lives of all. An expert in all things related to mushrooms, superfoods, and health, Tero is the author of 2 best-selling books "Healing Mushrooms" which is an educational cookbook from Avery publishing and "Santa Sold Shrooms" a children's book for adults as well about the magical origins of Santa Claus.

And Tero was chosen twice as when the world's top 50 food activities by the academy of culinary nutrition and has appeared in Time, Forbes, Vogue, Playboy, GQ, and Bon Appetite. He's also a sought after speaker featured at Summit Series, Wanderlust, Google and Fast Company Innovation Festival. And now he's here, back on The Model Health Show to talk about some new innovations and discoveries and let's jump into this conversation with Tero Isokauppila.

Shawn Stevenson: You just got back from—



Tero Isokauppila: I was back in the motherland. in Finland.

Shawn Stevenson: Finland, yeah.

Tero Isokauppila: Yeah, at a farm and then I went to Lapland, the northern part where the indigenous people live, it's quite magical.

Shawn Stevenson: Wow, what's magical about it?

Tero Isokauppila: Well, in the winter there are probably about 2 hours of sunlight and in the summer there are 24 hours of sunlight and in the winter it's really, everything is covered in snow, like full of snow everywhere and then it's the Northern Lights.

Shawn Stevenson: Wow, that's beautiful.

Tero Isokauppila: Have you ever seen them?

Shawn Stevenson: No, not outside of television.

Tero Isokauppila: I think it's once in a lifetime thing, you've got to get you and the kids and the fam to see the fireworks of nature.

Shawn Stevenson: Yeah, it's so amazing, man that nature has that capability. I just saw the Northern Lights on this little Netflix show I was watching with my family over the break, Raising Dion, did you happen to catch that one?

Tero Isokauppila: No, I haven't seen that one.

Shawn Stevenson: I think it was like produced by Michael B. Jordan and it's like a little kid, these like, he has superpowers and it kind of happened as a mutation from being exposed to the Northern Lights and some weird thing happened, so there's some really cool stuff out there, some magical stuff that we still don't know about. I'm thinking it's going to mutate you.

Tero Isokauppila: Yeah, it's created by the wind from the sun, so when you know when you are by the fire you feel this little like breeze from the fire and so obviously Sun being like gazillion times warmer explosions has this wind, solar wind that hits part of our magnetosphere, part of one of the layers of earth and then in the darkness it creates these beautiful colors, quite magical.

Shawn Stevenson: Yeah, we get to see it, man. But one of the things that, so you going back to Finland, this is why I love talking to you and love having you on, like you grew up in this culture that has had a direct lineage and continue connection with this kingdom of mushrooms. And you're somebody who really highlights that there are these different kingdoms, we tend to think in our popular culture mushrooms are part of the vegetable category, but there's so much more than that.

So I'd love if you could just do a quick recap for us on this kingdom and kind of recap the difference between the medicinal mushrooms, culinary mushrooms, psychedelic mushrooms. Because when I say it, the shroom people are like, "What are you talking about?"

Tero Isokauppila: It's getting popular though, people are asking about that even more. But yeah, a lot of people when they think of mushrooms they think of like putting on the pizza or something like, "Oh I have the mushroom pizza," or on the salad bar it's one of the vegetables. But mushrooms are much, much bigger thing than that. They are a biological kingdom.

In our field, in nutrition there's so much about, the debate about 2 kingdoms—it's plants versus animals, especially when it comes to protein people get really fired up about that. But then there are these 2 other kingdoms that you've been highlighting for years, which is bacteria and fungi and they have actually a very symbiotic relationship because they are a little more invisible.

There's a lot of mushrooms in the air that we can't see and the same with bacteria, they live in our gut, they live in our skin. But then obviously we can also eat mushrooms but when something is a kingdom, it means that if plants are kingdom, animals are a kingdom, there's a lot of them. They're not all created equal, not all bacteria is good, but not all bacteria are bad.

And we love to think about binary, it's the hero or the villain, often it's somewhere in between, right? So same with mushrooms, there are about 6 times more mushroom varieties than there are plant varieties, so for every tomato and cauliflower, 6 different types of mushrooms. And we only think of the Portobello, but very simplistically what people can use for their own health, we can just focus on 3 groups that you mentioned.



There are the culinary mushrooms, those are the ones you get at the grocery store, the button mushroom. They have some health benefits, fibers, some enzymes, B vitamins, some minerals, but you know in that way you could think of them as like a vegetable, in a way from a nutrient density, biologically they're completely different. But from a nutrient density, it is like, it is kind of like a veggie.

Then there are these functional mushrooms, they often grow on trees versus the culinary mushrooms grow on the grounds, so these mushrooms grow on trees and you have to prepare them, almost like you prepare a bone broth, so you have to make these like teas and decoctions, we've talked before about dual extraction, you were one of the first people talking about how important that is. But yeah, you prepare them into beverages or soups and they have incredible amounts of these smart nutrients and we can talk about that later.

And then there are the psychedelic mushrooms that alter your psyche, so many of them are currently in the US illegal, a lot of people ask, but they're a very small fraction of all the mushrooms so when you take mushrooms you're not going to be tripping, they're a very small exception. So there are many kinds of mushrooms.

And mushrooms are needed, they make about 40 percent of pharmaceuticals are derived from them, we need them for beer, for making wine, yeast, so bread, certain cheeses. On the pharmaceutical it's penicillin. They're everywhere, kombucha, sauerkraut, but we just kind of ignore them because there are many of them are invisible or not so prominent to us. But our ancestors knew about them and they used them.

It's just like a lot of the stuff, the lineage was broken, so I am fortunate enough to continue that and my parents and grandparents continued, but all of the ancestors had this knowledge, it's just like certain lineage is broke. But it's beautiful that it's coming back.

Shawn Stevenson: Yeah I agree, man. And there's so much there and just even going back to when the original statement and talking about how we think so binary, good-evil, black and white, but even if you think about that the Yin and Yang, like there's a little bit of light over the darkness, there is a little darkness in the light, and I just think about how we have this binary opinion of bacteria and even the "bad" bacteria, pathogenic bacteria, they still have a role, we all have a percentage of



these things in our gut.

Tero Isokauppila: I don't know, from pop culture Star Wars, all the bad guys have a good side to them, all the good guys have this struggle with the dark side and I think that is what nutrition is as well. You exercise, which is beautiful, you do it the wrong way you can get hurt like there are ways, there's always a little bit of no matter how thin you slice the cucumber, there are 2 sides and we love to focus on one of the sides but there's a lot of knowledge there.

Shawn Stevenson: Yeah, facts, man. I would love to talk about this connection because there's some, it's pretty recent data when we talk about the microbiome which is, this is really like the new frontier of medicine is really focusing here, and for good reason. But we tend to just focus on the bacteria composition, but we also have fungi throughout our bacteria, I mean, throughout our microbiome as well.

And this is an interesting cascade, and we just don't talk about that side, we don't talk about the fungi, we just focus on the bacteria and some viruses, that kind of thing. But this is a big player and what I want you to share also is, today I want to talk about how this relates to our health and wellness, our beauty, our body composition and we've got some new data showing that medicinal mushrooms in the interaction with our microbiome can affect weight loss as well.

Tero Isokauppila: Yeah, I think we're about to enter the fourth wave of health and a lot of this is related to our gut, our nervous system, things that we have are just kind of like unwinding. So historically, our focus was so much about our muscles, our organs, and in nutrition is about the macros, it was the proteins, the carbs, the fat.

Then that was a lot of the eighties, nineties. Early 2000's, we started realizing absorption that was a big thing, absorption, vitamin C, so vitamins and minerals started playing a role. And then, now last few years we focused on more on things like antioxidants or like these smaller compounds enzymes, and now we're starting to realize the synergies that these have and that's where bacteria and fungi excel.

So, unfortunately, or fortunately, science works in the very linear research pipeline, so we really love to isolate a single compound because it's then more credible data and this makes sense. But there are also synergies that certain



things have that now the latest research has been coming up and how that relates to health and wellness is huge because our gut and our absorption of nutrients is everything, it's absolutely everything.

And in our gut, it's linked to our nervous system, the nervous system linked to our brain, to our mood, to our happiness. And we've known now there's a lot more talk about the gut biome and we've often thought about it as an isolated thing of just bacteria or just fungi.

But in nature, those 2 pretty much always go together. So our gut is both bacteria and fungi working together, either positively impacting your health or maybe not so positively impacting your health. And this is, by the way, the same, I mentioned sauerkraut, kombucha, all these things, they are always symbiotic organisms between bacteria and fungi, together working, creating bacteria and fungi need each other and they collaborate to create goodness.

So in the last few years, we've had more research on gut biome how good bacteria and good fungi can impact positively, there are always bacteria in your gut biome, there's always fungi in your gut biome. But with the right kind of bacteria, the right kind of prebiotics that mushrooms are, and the right kind of fungi, you can improve it.

There are studies now on let's say there's a mice that are both given a high-fat low carb diet and then the other group gets also reishi mushroom, the queen of mushrooms, Ganoderma Lucidum and their insulin resistance it's much higher, their gut biome is much better and they lose more weight, and the only difference is that both got the same diet but the one group also got the Reishi mushroom which made— before we were always like looking at macros of how much we had calories or nutrients, but also the absorption matters a lot— when do you take carbs, how healthy is your gut. So if you want to lose weight, great that you're checking your macros, that's the baseline, that's the late first wave, but there is much more to that.

Shawn Stevenson: Yeah. And what is so crazy about this is that this is nature communications peer-reviewed, double-blind, placebo, all that stuff, like the gold standard of research now looking at like what happens when we add medicinal mushrooms into the mix. And Reishi, as you mentioned, queen of mushrooms, right and just having this really remarkable impact on I guess supporting what's happening in the gut if that's the right thing to say, the microbiome and leading to increase insulin



sensitivity and more weight loss. And this is something we haven't talked about. When we think about Reishi, and even the things I've talked about over the years, I think about impact on the immune system, your natural killer cells, the impact on supporting your nervous system and helping you to relax, there are so many benefits, and the thing is, it's just like this has been around for thousands of years and documented research, and now we're just getting to the point we're like, "Oh, it helps with weight loss too."

Tero Isokauppila: Well, it makes total sense because in nutrition and health we love to debate of stuff that we disagree when we often ignore the stuff that we agree. And one of the things we, for example, agree you can't go to anyone they don't say that hydration matters or sleep, we're like sleep matters.

And it's such a power player because when you get sleep, you think better, your skin is better, you lose more weight, right? But the same with certain herbs, mushrooms, and adaptogens. For example, Reishi mushroom, 2000 years ago the Chinese listed all the herbs and mushrooms they knew and they ranked them how good they were for you. Reishi mushroom was number 1.

Shawn Stevenson: Number 1.

Tero Isokauppila: Number 1. 2000 years ago, and after that thousands of studies have come out and first, it was for immunity, for HPA axis, calming your body but then you're starting to unwind, it's like, no, gut biome. And we already knew that the most active compounds in these mushrooms are these complex sugars, polysaccharides, and sugar sound bad, but again, the good and the bad, these are very small amounts of sugars that have very specific molecular structure.

And what they do is they get absorbed in the digestive tract so all kinds of mushroom experts have known for a long time that there's definitely a connection between the gut and mushrooms. And now in the last few years, tons of research is coming out and about that. And pretty much every gut biome expert is now highlighting the importance of not just probiotics but prebiotics and fungi for healthy gut biome, and you can test it pretty easily.

Shawn Stevenson: Yeah, and in addition to that, that's so funny that we have to say this, but when you find something that's good for one thing, it tends to be good for a lot of other stuff, you know what I mean?



Tero Isokauppila: But we hate that. Why do we hate that?

Shawn Stevenson: Because we're looking for that silver bullet thing, that is just like, in this lane we have this kind of pharmacological mindset in our culture where I take this being for this headache, or whatever, versus like this makes my whole body work better. And just kind of pivoting with Reishi assisting in weight loss via the effects on the microbiome, also the sleep side as well, let's talk a little bit about that.

Tero Isokauppila: Yeah, so again, these are all very connected but to make it a little more isolated to catch on, is a stress is, it's a hormonal response, so these hormones, these slow-moving messengers impact how are we feeling and our nervous system, again so much to learn there still more, but what we know is that simply put, we have these stress responses, fight or flight and those control our hormones and let's say melatonin response or especially this big thing that talk about adrenals and HPA axis and this link between our adrenals, giving us energy but also kind of putting us in a state where we cannot relax, and we might sleep 7 hours but we don't get that deep sleep because were a little bit too alert.

So what Reishi does is that it has these, besides these polysaccharides, these certain terpenes, marijuana industry is talking a lot about terpenes, but these triterpenes and this Ganodermic acid that seems to work on our endocrine system and really calming the body and helping increase deep sleep.

I'm not like the craziest biohacker but I've been tracking my sleep for years with oura rings and few other things just to kind of see particularly HRV and deep sleep, and once you get these adaptogens like Ashwagandha and Reishi in, the amount of calmness in your body's pretty dramatic. It's not the only thing obviously, there are many other things, temperature, quality bed, sleep position, all the things highlighted in "Sleep Smarter" but that is a huge factor as well is that if your nervous system is fired up if you eat too much at night and you are trying to digest, all of those impact.

Shawn Stevenson: Yeah, I love that you pointed that out because it's kind of like stack, what we want to do is stack conditions, but the great thing still is that these mushrooms don't care if you're doing everything right, they're still going to help at least a little bit and you know I've cited it many times in the show but there's a peer-reviewed study that found that Reishi improves overall sleep time, sleep efficiency, sleep latency, so you fall asleep faster without changing anything

else. However, we do want to have good sleep hygiene, but it's just so effective with calming the system.

Tero Isokauppila: You stack them up but you've got to start somewhere. You go to IG you see a guy or a girl, perfect abs and you are like, honestly, that took 10, 15 years but they started somewhere. One day they were like, "I'm going to go boxing," or something, "Go for a walk."

We all start somewhere, every marathon starts with the first step. And then you build from there. And you want to make the first step fun, easy, that's kind of always been my game, it's like don't aim for perfection, aim to get going, you know, get going. If that means putting mushrooms in your coffee or putting in your chocolate and having beautiful evening chocolate for a moment for yourself, great just get going.

And from there as you start to kind of build up every month you can add one more thing. So instead of thinking what I can't have, like, "I can't have gluten, I can't have dairy, I can't have this, I can't have that," it's like, "No, how can I upgrade or add stuff, add goodness?" Just add a little goodness, upgrade a little bit, you take what you already do a little better and that's a lot easier to maintain.

Shawn Stevenson: Yeah, I love that man, I love that so much. So the reason I want to have you on and to talk about beauty, this is obviously— Throughout time we've kind of prized beauty, I am thinking about Cleopatra. And just the story, the kind of legacy and how that just kind of ties into our culture and just looking for physical well-being and just being the best that we can possibly be.

And I was on a flight a few weeks back and there was, you know how they have like in-flight magazines and there was Sephora ad in there, they are like at the boss makeup place right now, I believe, I mean that's just my, seen from the outside. And there was Four Sigmatic in Sephora, and I'm just like, "What's going on here?"

And of course, I just started going through my mind like, "I know that there are so many beauty aspects to this, but how did they find out about it?" And so let's just kind of start there because when I think of Sephora and you know that industry, I tend to think of skin and skin health. So how do these medicinal mushrooms relate to our skin health?



Tero Isokauppila: That's a great question that highlights again the same thing about this historically very isolated view of the world. We would study fungi for gut biome, and bacteria but together they're more. Or we would focus only on animals and plants but not on these other things. Same with beauty. Beauty was so focused on an external, topical thing.

We can absorb things through the skin, for short, that's why we take a magnesium bath or if you swim in the beer you get drunk and random stuff, right? Lotions, you put testosterone creams or whatever, we absorb things through the skin. We also absorb obviously by eating. And this has always been there, but that beauty industry's been really isolated on the topical, treating the symptoms— I got dry skin, I'm going to put lotion on, or a moisturizer, serum, a face oil. That helps today, so today you got good skin.

But what is really making the skin is your cells. And your skin is your biggest organ, it's often the last place to get nutrients, so that's how you often know, it's like, hey maybe zinc deficiencies, vitamin D, these things. If you're healthy, you have healthy skin, when you have healthy skin you need a lot less topical products. So the beauty industry is catching up in this really quickly right now, they're all about indigestible beauty or edible beauty. And it's coming fast. And it's driven actually funny enough by the Korean and Japanese beauty industry, and particularly mushrooms in that class are one of the hottest and also most studied things. So let me tackle those why and how.

So why— well one thing is that these mushrooms have incredible amounts of antioxidants, specific types of antioxidants they calm down the skin the same way they calm down our gut, come down our stress. So the Reishi's and the Shiitake has Kojic acid, Tremella has hydrochloric acid, Chaga has melanin, these antioxidants calm the skin, lower inflammation. Asian consumers have been using these mushrooms for a long time.

Just one example, this huge skincare company Estee Lauder, one of the biggest, they have this big line called Origins. Origins' bestselling product is a Mega mushroom line. They have a mushroom and skincare line and it's been their best seller for ages and the reason is that Asian consumers buy these mushroom skincare for a long time. And now the western consumer, especially in the US Sephora, they are like tuning into K Beauty, Korean beauty, Japanese beauty, they are like what do those guys take that they have this like, at 50 they look 20



and it's like what are they doing? Mushrooms, it's one of the top of the list of things they do.

Shawn Stevenson: I've got to go back because you said melanin in Chaga.

Tero Isokauppila: The highest source of melanin in nature is in the Chaga mushroom.

Shawn Stevenson: Come on. That's nuts.

Tero Isokauppila: Yes. And a lot of people don't know, melanin is a very powerful antioxidant, very powerful.

Shawn Stevenson: Yeah, it's part of the reason black don't crack. And there's more melanin in their skin and there's actually nutritive sources in Chaga being like this superstar with that. But Chaga has just overall more antioxidants than I think like anything.

Tero Isokauppila: Yeah it's melanin and SOD the Superoxide Dismutase. Those particularly crush it, funny enough you'd mentioned black, for anti-aging and longevity, black foods: cacao, coffee, black olives, black sesame seeds, Chaga, these things, black foods particularly, those color pigments tend to be amazing for longevity.

Shawn Stevenson: Nature's communicating with us. That's so cool.

Tero Isokauppila: Yeah, skincare is moving towards a more holistic approach versus this isolated, topical approach, you know that you need to have good skin, good cells, good health, good gut to have healthy skin then it's easier to keep it beautiful and they're moving more towards ingestible beauty to support the topical beauty. You can use both but it helps, and they know from this Asian consumer that the top of the list is mushrooms, probably the hottest trend in skincare right now.

Shawn Stevenson: Wow. You also mentioned superoxide dismutase with Chaga. I just want to make sure Chaga gets its credit. This is like a master antioxidant, this might be if we're talking, having this conversation about antioxidants, the major place we do get it from food but if your body can be assisted in producing more superoxide dismutase or just finding a source of that, it makes every other enzyme system antioxidant system work better.

And that's one of the most fascinating things for me, when I think about Chaga, I think about like you just mentioned, longevity, that's what I think when I think



about Chaga. But also Reishi has kind of lure of being the longevity mushroom. Which one is it or is it just both?

Tero Isokauppila: Yeah, that's funny there are stories of like in the Shaolin temple, the home of Kung Fu, is also one of the centers of traditional Chinese medicine. And they often like put photos of masters on the walls but the story says when you go to the head of the medicine wings, there are 2 things elevated— the king and the queen, the Reishi and the Chaga put on a pedestal.

It's always fascinating to me that certain cultures would make food sacred, why was cacao the currency like what made people see the value, like currency's value in a certain food. I always think that that's pretty fascinating. So same spices, saffron, so nutrient-dense, and vanilla and others.

Shawn Stevenson: And salt?

Tero Isokauppila: Oh, salt, the best example. I've always thought that in the macronutrient category we need a fourth one, and that's salt. We can't live without salt so I think even though it comes from minerals, but I think we should think about carbohydrates, lipids, fats, amino acid, proteins and then we should think about salt, it's essential. I hate it when people are scared of salt.

Shawn Stevenson: Yeah it's an issue, we've talked about it many times and kind of getting over this stigma, and the good news is that we have folks like yourself who are out there talking about this stuff and even just a little quick nugget on salt since you're going in on it.

When we're talking about beauty we're talking about when people see you we're seeing a compilation of those cells, and us being able to even hold on to hydration, it depends on whether or not we have salt in our system, like if we have dry skin guess what— we're really not retaining water in our tissues correctly. And it's not saying that you're deficient on salt, you might be deficient the right kind of salt because there is like bastard eyes like toxic salt that is in processed foods.

Tero Isokauppila: If you go to horse stables what you are going to see is they have water and they have a little salt rock for the horse to lick. And there are like monkeys trying to break rocks to find salt. Animals will fight for it, it's so critical.

Shawn Stevenson: Yeah, and horses got that mane, man, they got that dupe. They got their hair dupe.

Tero Isokauppila: They also got that sex drive.

Shawn Stevenson: When I think about horses just like flipping their hair back and forth like a willow— was that Willow Smith, Flip my hair back and forth? They are about that life, but it's that, salt is a big driver for them, big attraction to really all animals. So I just wanted to talk about that a little bit.

So let's go in because now I know that you guys, and understanding the market, and this what I love about what you guys do is like you know that people are doing this thing, people are drinking coffee, let's upgrade the coffee, let's get a high-quality organic source of coffee, let's add some Chaga in there, and just it becomes this super nutritive longevity drink that you get to have. And now, of course, like there's this huge market for topical treatments as well because you mentioned before like our skin eats.

And really understanding this, that we're putting these random chemicals on our bodies. And our skin is absorbing that trash, we need to be thinking about our skin having food, basically. And if we're eating great high-quality food internally, shouldn't we put great high-quality ingredients in our skin's food, on our face and on our body. And so you guys have put together some unique formulas recently that really addresses because again, the market is looking for but you guys do it better because you are not putting all of these extra toxic chemicals in it that just simply don't need to be there.

Tero Isokauppila: Yeah, unfortunately, we think so often that more is better. But better is better. And skincare is one of the shadiest industries in the world. And you don't need to do much research, you go to one of these large companies and you go look at their public statements and they're saying is that they're spending 3 to 4 percent of their revenue on the product. So if you buy \$100 serum, it cost 3 to 4 dollars to make.

And actually, it's, I know, because I know those producers, it's a dollar for the thing, product itself and it's 2 to 3 of the packaging. So you're buying a \$100 product you're getting \$1 value. And it was for me, it was always like I will not take those and people would go always like, "What do you do for your skin, why is your skin glowing?" I'm like, "Nothing, I do not put, I do not use skincare." "So



what do you put on?" I'm like, "Coconut oil, olive oil, but usually just eat healthy," that's the baseline.

But there is use for topical, it kind of helps today, it helps tomorrow, it helps in the short term, you still want to get those healthy cells, but for me, it was always, it's like, I don't want to use these even these eco products, eco beauty products. They had polymers, which means they have plastic. Even these clean products that are crazy expensive are made with plastic. So what your body really needs is pretty simple stuff. Obviously, the Reishi mushrooms and certain vitamins, vitamin C, and there are certain things, the really small nutrients to help, but you also need very simple stuff like healthy fats, healthy fats are our friend for hydration.

And we just do a couple, you don't need 75 skincare products, it's like we need really a couple. It's a very simple routine that we need. Most people want hydration, that's the number one so they use a serum or a moisturizer so it's just simple things like honestly, olive oil. Olive is one of the healthiest foods in the world. So you obviously should have good quality olive oil but also great for skin, and there are a few other healthy fats, cacao butter is really good for your skin and just having those things that you can also eat.

So our line is fully just like few ingredients, everything you can need, it's dual purpose, our face mask is also a hot chocolate so it's a powder, you mix a face mask but you just pour hot water, it's full like edible, delicious hot chocolate that cleanses your skin. The serum is also like a stress-reducing supplement that you can spray on your mouth. I just think that the skincare industry is going to have a big wake up soon.

They've been selling us \$100 products that really could be \$1 value with hidden all kinds of stuff and not just the parabens and other people talk about, but so many other nasty things and you're buying really water, alcohol. That's most of those products are water and alcohol and you're way better off putting something else on your skin and there are so many examples of that.

Shawn Stevenson: Again, if you can't eat it you probably don't want to put it on your skin.

Tero Isokauppila: No, because it does absorb, I really don't understand why people don't get this, like you got a magnesium bath and you chill. You put CBD lotion or whatever lotions and things but you don't think that the deodorant or the skincare is not

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going absorb, of course, it's going to absorb, for sure.

Shawn Stevenson: I think people are understanding more about the absorption you know about these taste bud challenge?

Tero Isokauppila: No.

Shawn Stevenson: Let's not get into it too much, but for those who know it's about soy sauce and it's about your kibbles and bits, all right and apparently you can taste it once you put it on your kibbles and bits, alright, I'm just going to leave it. Very PG, but when you put it on your body, you can taste it but there are other things that you can actually have that experience with, like DMSO, right? Putting that on your skin it can, literally, you can taste kind of like this weird, garlicky taste in your mouth, you know by putting DMSO on your skin.

But that's neither here nor there, shout out to the taste bud challenge for those that know my son told me about it. But anyways. So one of the things that's in this and I love a good face mask, like occasional, for me, its maybe like once a month to do a face mask. I've done like aloe, like fresh aloe, just put it on my skin for the day.

But like bentonite clay I have used over the years but you've got bentonite clay in the formula, but you've also got a couple of medicinal mushrooms in there, you've got the Chaga which is that melanin in there, super antioxidant source and you've got some Reishi in there too. So I want to talk about— oh, and you've also got Ashwagandha, in the mix. I think you might have mentioned it a little bit earlier about that stress aspect.

Tero Isokauppila: Yeah, I mean so if you think of what— this can get really confusing, so if you're listening to this and you're like mushrooms, adaptogens, adapt to what, like what am I, I am confused. Like no, you can, let's bring it back, let's bring it like simple. So we've talked about the king and queen, the Chaga when you want to prepare in the morning, Reishi in the evening to calm you down.

And then if you want to do a day routine, Lion's Mane is probably like for the brain and nervous system. But the same can go for these adaptogenic roots so that you compare these mushrooms, adaptogenic mushrooms of the adaptogenic roots, these routes have so many amazing nutrients. And what pairs really well with calming, stress-reducing is Ashwagandha.

So Ashwagandha is like the Indian ginseng, it's not really ginseng, but it's a really beautiful, beautiful adaptogen, tons of studies on it as well, a lot for calming the body, also calming the skin. But funny that happens is that when your body's calm, often your happiness, productivity and brain power improve.

Because when you're in the fight or flight situation and you're like looking everywhere, where is danger, where is danger, you're not focused, really if you think of it. Focus, that means you're just like calm, collected, confident. So Reishi and Ashwagandha kind of can help with that as well. So just you don't need to learn herb number 24, or a mushroom number 56 just 3, like morning, afternoon, evening. Like that's it. And Ashwagandha is great for the evening.

Shawn Stevenson: Let's talk about because I think this is a good segue to some other recent data that's out there, just with the exploding popularity of the medicinal mushrooms, their new report showing that most mushroom supplements on the market aren't actually mushrooms.

Tero Isokauppila: Yeah. This is really tough for me, because I've been waving the mushroom flag for 15 years and it's real difficult for me to talk about it because you don't want to trash the few companies out there. Because when I started, there's like one or 2 other companies and it's a real bummer, but now yeah, it's like consumer labs came out with the research showing that like the most popular products in the market are not actually even mushrooms.

FDA has a rule saying that these products that are sold should not even be called mushrooms because they are not the actual mushroom part of the fungi. And there is the United States Pharmacopeia made a study showing that only one-quarter of the products on the market actually had Reishi mushroom and three quarters, like three-quarters of what you were buying, and these can be like pricey products, and you're not buying.

So same is with skincare. Unfortunately, the supplement industry is full of all kinds of players and it's just a bummer. But I think now the mushroom movement and it's big enough that people have started to question is like, "Hey, this doesn't taste bitter, this tastes like oats." I'm like, "Yeah, those bitter compounds are the one that helps your health, if it tastes like oats, probably is made with rice or oats."

So, we can go into the details why that's not good because those products don't have these beta D glucans, and you can test these very easily. But if they're not bitter and they're made in laboratories and they don't actually contain the mushroom, they don't actually contain these active compounds, that's a real problem, you're paying for rice powder.

Shawn Stevenson: Man, that's crazy. It's kind of like a lot of people don't realize, like Kraft's slices, I grew up with Kraft slices like a lot of people did, unless we had government cheese, but the Kraft slices, they can't legally say that it's cheese, it says "cheese product" there is not enough cheese in the sheets. You know what I mean? And it's just like with any of these industries that marketers grab on to try to make some quick money and not understanding, and also just the supplement industry being as aloof as it is, and the regulations just aren't there, that folks can just go for a cash grab and just say, I've got this, whatever this product, this and that.

One of the things that I love about you and just why we connected in the first place, those early companies that you would, that you knew about when you came into space, I was buying from them. I was one of the few people that I knew that were buying these different mushroom products and I buy like tinctures, and then I buy the capsules and I would like combined them and I was doing my own little science experiments in my kitchen.

And then you guys come along, it was just like, oh, it's a dual extracted, you're doing both of them, and I was just floored, just right off the bat from that, it was just like this is going to save me time and money because they're doing both things. So we mentioned a little bit earlier but I'd love if you talk about it, you mentioned like a decoction, but let's talk a little bit about the dual extraction and why that matters, because you mentioned like the triterpenes, beta-glucans, and these are going to be retrieved through different methods.

Tero Isokauppila: Yeah, so basically mushrooms have, particularly these functional mushrooms have a very sturdy cell structure, they have this compound called chitin. And we humans have very little of certain enzymes to break this chitin. Chitin is also the compounds that is in the cell structure of the lobster shell, so think of eating the shell the lobster, not easy or fun.

So enzymes are hard workers, I always think of like the macronutrients being the walls on a building, and then the micronutrients being the tools to put the



house together but the people who actually work— enzymes they put a lot of that together. But we don't have this worker who can use this machine, so we need to make those mushrooms bioavailable. So what I'm saying is don't eat mushrooms raw, if you go to the salad bar and there's like raw mushrooms, skip on them. Like no bueno. So always have mushrooms in a way that they have been exposed to heat and lipids or alcohol.

So in order to break them and make them bioavailable, you need those 2. Chefs have always known this, they sautee mushrooms on a pan with butter or they put in a soup or a broth and they cook them a long time, that's awesome. But you shouldn't have them raw, so there are 2 kinds, there's the hot water, the heat element and then there are these non-water soluble compounds that need either fats or alcohols to get them out.

And if you do both, that's called a dual extraction, it's double-double, it's like that's what's happening. And the water-soluble compounds, if you cook them it's like, kind like make tea, that's called an infusion, make coffee for a few minutes, but if you cook something a soup, that's more of like a decoction, and those unlock those polysaccharides that are good for our immunity and gut.

So if you want mushrooms to be good for immunity and gut, hot water is really important. If you want to get those adaptogenic, those Lion's Mane, brain-boosting properties, those like Reishis, triterpenes you need this other kind of alcohol or a fat extraction and if you want both then you need dual extraction. So instead of buying a tincture in a capsule, you can just one and done.

Shawn Stevenson: Yeah, and these super easy to use which is so funny man, and I have shared this with you before, but I've been with my wife for 15 years now and I've seen her drink coffee once when we were in college. And I think it was like finals or something. But the entire time we've been together I've never seen her drink it except maybe that one time.

And, I hooked up with you guys and I was just super interested in the elixirs because it's what I was doing, but I was like doing different brands to try to get both, the alcohol extract and the hot water extract. And so you guys sent me some stuff and I was, the Lion's Mane, the Chaga, I was just in love. And you sent me some of the coffee and I was like— because I've never had coffee my life outside of when I was like maybe around 5 and I drank some of my grandma's Folgers.

And I determined at that moment I will never drink coffee again. And I thought I actually had the thought at my mind, like my grandparents, there is something wrong with them, like how could they think this is good? But they seem so happy when they have coffee in the morning. And so, but anyway, I made some for my wife, I put a little fat in there for her, maybe it was I don't know some ghee or something and some stevia and she had it.

And the next day she asked for it again. And then the next week and then the next month, like day after day after day. Now I'm her barista, literally even today, I came downstairs and I was like, "Hey Babe can you help me set up this," I got this vibe playing out with the test out and she was like, "Make my coffee." She didn't say good morning and I know she loves me but I'm just like— And what can I say. So anyway she was just raving about it, and maybe it was like a year before I actually tried it.

Tero Isokauppila: So what do you think it was for her, was it that it doesn't give the jitters or it doesn't ease her to digest, what do you think is the magic?

Shawn Stevenson: So she likes the way it makes her feel it's not like this crazy energy, it's just like it's a compliment, it's a compliment to feeling good. And you know exactly what I mean, and there is no fall-off anywhere, it's just like this is a transition into your— and the great thing about it is that you're not dependent on it either if you don't have the coffee you're not having like headaches or you're like down, it's just a compliment to feeling good. And just the joy, the experience of getting those nutrients.

And one, I think the biggest thing, now that you're asking and I don't think I've mentioned this before is that when she has the coffee, the Four Sigmatic coffee in the morning, along with some high-quality fats, maybe some MCT oil she doesn't really, she's she doesn't eat for a while, like she's just in her day, executing, getting stuff done, feeling good and not thinking about food which is a really phenomenal kind of aspect, and this is kind of highlighted in the research you shared earlier about the impact on the microbiome and the efficiency in support of like insulin sensitivity in the body.

So she just feels good. I know that too now, all I am saying is she feels good. I feel the same way. And so that's, it was just such a joy because I got over my misconceptions and, of course, I just kept coming across research on the coffee,



I was like, I don't know coffee is bad, coffee is bad, and then I just opened myself up.

Tero Isokauppila: It's the Ying and the Yang. It's one of the most studied things for longevity those black antioxidants, there are so many studies for brain longevity. But coffee does come with a couple of major downsides one is that it's so stimulative for the nervous system and then the other one is that it's kind of tough for digestion, with that acidity. So that's where the minerals and the more alkaline Chaga kind of comes in to balance that out, but also the Lion's Mane for the nervous system, that balances out the stimulation part. I know you're big on the Lion's Mane.

Shawn Stevenson: Yeah, I love it, man. I just had some little energy shot before the episode with you. Man, I love this so much and it has become a huge part of my life, my daily routine and I love hanging out with you and the insight. What I most respect about what you do is that you study this stuff so that you're coming to the table not just like, "Hey my grandma said these mushrooms are good" like you should have some which your grandma's right.

Tero Isokauppila: She's always right.

Shawn Stevenson: I just love the fact that we have a lot of great science that you're on the cutting edge of just paying attention too, to be able to help us understand the value of some of this has been around so long. And so right now you guys have some incredible new products that I mentioned, you've got the skincare products, you've got the face mask, you've got the body butter. Is that right?

Tero Isokauppila: Yeah, body butter that also you can put in your coffee, maybe you'll put some of that, it uses cacao butter as the means so maybe put that on your wife's coffee.

Shawn Stevenson: Oh my gosh, come on now. And then we've got the superfood serum and of course, the mushroom coffees, the elixirs, the hot cocoas, and you guys are so much good stuff, you get an exclusive 15 percent off here with The Model Health Show, it's foursigmatic.com/model, that's F-O-U-R-S-I-G-M-A-T-I-C.com/model, you get 15 percent off everything they carry.

So pop over there get yourself some of these incredible products, you will thank me later, I promise you that. And while you're here, man, Four Sigmatic— what, where the name come from?



Tero Isokauppila: It's the nerdiest and the worst name, I feel like, we've been around for about 8 years, I've been like a million times like man, I should have chosen an easier name. But it means that in all sciences, including natural sciences, if you take a large enough sample size of people or things and you compare that sample size against a single variable, they will form a bell curve in data. For example how tall are Americans? Take every American, look at their height, you'll form a bell curve. Most people are average height and then there are extremely short, extremely tall. IQ, whatever.

But in food, if you look at the nutrient density of foods, you take all the things you could put in your body and you look at how much there are micro, macro polyphenols antioxidants, you look at the amount of research on food, you'll form a bell curve. And then here comes the math part, there are standard deviations from the center point, the mean and they're called sigmas.

And if you go four sigmas, you're better than 99.999. So that's like the top 50, 200 foods that we know of today so think of like simplistically, top 100 foods based on today's research and there is so much hype what I hated growing up in this industry was always like this Amazonian super berry that has never been studied, it's like cool, let's look into it and I want to learn more, I'm probably one of the persons who is also going to buy it.

But for you who's getting started and is confused like let's start with the top, like what is undeniably proven, some of these are very common, green tea, coffee, coconut, hemp. These are things that we know are amazing for us, olive certain kind of like dark leafy vegetables. But then there's also these like lesser known like the turmeric, the Reishi, the Ashwagandha, the ginseng those are the kind of super, well-proven and studied but maybe a little lesser known. So the top 100. I could have said it easier, probably.

Shawn Stevenson: No, I love it, man I love that because it's again, it's a testament to the goal like when you guys started, like we want to provide the best, the top stuff. And it's a cool little shout out to the geeky way of doing. And man, just, but thank you so much for having the audacity to get into this and I'm grateful to be one of the early—

Tero Isokauppila: One of the first.

Shawn Stevenson: Adaptors and supporters because I mean, I love the products, man.

Tero Isokauppila: Even before we connected years ago, I remember you giving talks somewhere in Missouri about Reishi mushroom and you talked about dual extraction. I don't know if it's still in YouTube. Before we even met.

Shawn Stevenson: There are some videos floating out there.

Tero Isokauppila: Before we even met there was, production quality was not yet there, but somebody you giving a lecture, like a consumer lecture on Reishi, I don't know if it's still out there, but I remember before we met checking out like, "Dude, this guy's on top of it."

Shawn Stevenson: Oh man, that's so awesome. I am smiling ear to ear. Yeah, those are out there floating around somewhere. But man, again, thank you so much for coming to hang out with me man.

Tero Isokauppila: Thanks for having me on.

Shawn Stevenson: I always love hanging with you.

Tero Isokauppila: Likewise.

Shawn Stevenson: Awesome. Everybody, thank you so much for tuning into the show today. Make sure to pop over to FourSigmatic.com/model, check out Four Sigmatic and also you can check them out on social media at Four Sigmatic?

Tero Isokauppila: Yeah, all the channels.

Shawn Stevenson: At Four Sigmatic, they've got some great stuff on social as well. And listen, beauty really starts from the inside out and this is something like I really want us to get these. When we talk about beauty this isn't, I'm not talking about the cultural standards of beauty, I'm talking about us reaching our highest potential and we know that there are so many different versions of ourselves and so much potential.

And it just depends on our inputs, it so much depends on our inputs and also the way that we think. And making sure that we're getting in the right nutrition helps the way that we think as well because we know that we can stress

ourselves into manipulating our genes in unproductive ways. We can also eat ourselves into positions where our genes aren't doing what we want them to do, these are these epigenetic influences. And we have so much power today, we know this on determining what our genes are doing and how they're being expressed.

Collectively as humans we have 20,000-ish genes that we're all sharing and there's more data, I think there's a bit more than that, but we know that there are thousands of different potential expressions of many of these different genes. This is why you have so much variety in the way that we look from each other and even within ourselves, because chances are you probably don't look like you did when you were 16 or even 5, what changes the genes are being expressed differently, you've got all these different potentials.

And now we know that not only do we have our chronological age, but we have a biological age. And that biological age largely depends on what our genes are doing, and the copies that are getting printed out. I just had a great conversation with Mark Hyman and even though he 60, this man is 60 years old, balling out of control impacting the world, but his biological age after testing his telomeres and these different factors, is 39, all right. You can be so much younger than what it says on the calendar.

And he recently worked with Will Smith— yeah, that Will Smith. Gemini man, that probably should have been the one I start with, but Bad Boys, Men in Black, Fresh Prince of Bel-Air, all right, and Will funny enough, he's a lowest biological age in his family, like he's younger than his kids because of the way that not just his nutrition and self-care, because he has some holes there, but also because of the way that he thinks.

And again, going back and leaning back on the fact that beauty is from inside out, and it is from our nutrition and also our nutritive thoughts and it's easier when you feel good by getting the right stuff in there. And today I just wanted to highlight some of the, we're talking Four Sigmatic like what is the best of the best stuff that we can get in our body to help our minds and our bodies to do the cool things that they're capable of.

And I hope you enjoyed this if you did please share this out with the people that you care about on social media, Instagram, Twitter all that good stuff and tag us, tag myself, tag Four Sigmatic, let everybody know what you thought about



the episode. And we've got some powerhouse stuff coming up very, very soon for you so make sure to stay tuned. Take care, have an amazing day and I'll talk with you soon.

And please make sure to head over to iTunes and leave us a rating to let everybody know that the show is awesome. And I appreciate that so much. And take care, I promise to keep giving you more powerful, empowering, great content to help you transform your life. Thanks for tuning in.