Episode 134: Five Benefits of Fasting, Autophagy, Diet Variation & Cellular Healing with Dr. Daniel Pompa

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Katie: Hello, and welcome to the Healthy Moms Podcast. I'm Katie from wellnessmama.com and you are absolutely gonna love this interview. I can't wait to get into this interview because I'm here with Dr. Daniel Pompa who is widely considered a global leader when it comes to health and a variety of topics. And he's on a mission to educate practitioners and the public. So he trains doctors and just the general public on the origins of inflammation-driven disease. He's trained as a chiropractor but he also overcame neurotoxic illness and heavy metal poisoning using his unique cellular detoxification strategies. And so for the past two decades, he's been studying and practicing and teaching this True Cellular Detox program around the world with amazing results. He's now considered one of the top experts in the world on the therapeutic application of the ketogenic diet, the benefits of fasting, ancestral-based health approaches and cellular healing and detoxification. And I wanted to have him on because I'm gonna be going through his program, actually, in February, and we're gonna talk all about it. But welcome and thank you so much for being here, I'm honored to have you here today.

Dan: Yeah, I'm honored to be here. Thanks for having me.

Katie: Yeah, it's gonna be awesome. So I have come to call you and your wife, Merily, personal friends and I've heard your incredible story myself. But if you don't mind could you tell it again? Because I think it will provide really important context and inspiration to everyone who's listening. I know you and Merily both have a health journey that led you to where you are.

Dan: Yeah, exactly, pain to purpose has been our mantra as you know. We've been through a lot but it

provided what I needed, honestly, to take the message that the world needs. And, yeah, I mean when I started getting sick I didn't know what was wrong. I didn't even know, first, I was getting sick. I thought I was overtraining. I was actually in really good shape at that time, racing my bike, and I got fatigue. And it just kind of went to fatigue to anxiety. And, of course, I still thought I was overtraining and take more time off. It didn't work. Then it went to insomnia, then it went to food intolerances, became allergic if you will, intolerant to everything I ate, bloating. Then it went to panic attacks. Then it went to every hormone challenge you can imagine, my hair started falling out, so my thyroid was shot, my adrenals...I couldn't even adapt to normal stress like loud noise, let alone crying children, which we had two young babies at that time.

So life as I know it came to a screeching halt because things got worse, not better. You know, at that time, honestly, I really, I couldn't even exercise. I mean if I took a long walk, I'd be left wiped-out and then sleepless that night. You know, so functioning in my practice, which is very busy, became impossible. Thank God I had a business partner who like picked up the slack. But, yeah, I mean that became my new reality and through the years, I was just trying to figure it out. Only to find out later that I had mercury poisoning. And it's funny because I had…became friends with a very bright endocrinologist and I was working with him because I knew my thyroid was not working correctly even though my blood work was normal. But he said to me, "Dan, I think you have mercury poisoning." And I said, "You know, I thought so too." I found a condition called "mad hatters disease." And if you don't know what that is, they were the people making felt hats were using mercury in the process and they became known as mad hatters.

So I was like I am one of these people. This is my symptoms. But I went and got a blood test and it came out negative. And, you know, a little over a year later he's like, "You had the wrong test. Do this one," where you challenge it out of your tissue. Then, sure enough, I had high mercury and lead and some other metals. And I asked the obvious question I think most of you would ask, "Where did I get it from?" He said, "Did you have any dental work done around the time this all happened?" And as it turned out, I did and I just didn't correlate that with the symptoms. I had two silver fillings drilled out, which is called amalgam fillings, which contain 50% mercury. And that's what ended up spilling my bucket over.

But, you know, looking back at my life I had been accumulating mercury. Even contact lenses, in the '70s, '80s, and '90s, there was thimerosal, which contains mercury in the saline solution. So I mean that was my story and if that weren't enough, my wife ended up with a hormone dysfunction because of lead that she got from her mother, which is the number one source of lead toxicity. You know, and so, yeah, I had a lot of experience. And then if that weren't enough I had...we adopted two children who tragically lost their parents. And he was vaccine-damaged and loaded with mercury and bioaccumulated other toxins. And, anyways, he was on the autism spectrum when we got him. And what I learned in my own battle, I fixed them. So we have seven of us in our family. In all seven, now, I don't have time to go through every story but all seven of us were dramatically affected by heavy metals.

My wife, actually, got her lead level from her mom and gave it to our children, who ended up with major digestive issues. And like I said, the number one cause of lead toxicity is you inherit it from your mom and then it creates problems from there. So that's the story in a nutshell and that's why I'm so passionate about what I do, here.

Katie: Yeah. It's so amazing and I know that you have an amazing journey -- all of you -- to recovery. And I feel like, like you, I got into…or I kind of am where I am now in this journey because I struggled through a problem. And it was learning through that that got me where I am today, so I'm grateful for that. And I'm sure, like you,

you could look back and have gratitude for the lessons in that. But I recently got to attend and speak at one of your events where you actually train these doctors and practitioners in this really high-level stuff. And so I want to delve into so many of the topics you talked about there. But to start, I know this was really instrumental in your recovery, so let's talk about the things that were, the 5 Rs I believe you call them and the three pillars that you use to like find your own way back to health and then, now, have done with so many others.

Dan: Yeah. You know, it's that when I started teaching this, I would walk away from many lectures to doctors, right, not to the public at this point. And go, "God, they just didn't get it." My message was, look, you have to fix the cell to get well. Or, in this case, fix the cell to get people well today. The problem why people don't feel well? Even why they can't lose weight, it's a cellular issue driving hormone dysregulation, right? You know, and then when we look at really what's driving this, you know, the problem at the cell, it's toxins. So I, you know, toxin-induced weight loss resistance and toxic-induced hormone resistance, you know, but we have to get upstream to the cause.

My 5 Rs became a roadmap that I started teaching doctors because of my frustration going -- they didn't get it. So I am literally on an airplane. I have to believe God gave that to me but, out of my frustration and prayer, but it became a roadmap. And R number one is removing the sources from our life. You know, obviously, that's two ways. You know, if I didn't get the silver fillings out of my mouth correctly, I wouldn't have gotten well. I don't care how much detox I would've done. If you live in a moldy home, if you don't get out, you're not gonna get well in any aspect.

But I had to get the mercury out of my brain, you know, from the fillings and that's really why I was sick. I mean it was going right into my pituitary, which controlled my thyroid, which controlled my adrenal. So all the efforts I was doing in my thyroid and adrenals, it wasn't working, you know, and I just wasn't getting well because my pituitary was loaded with mercury. That's the importance of getting upstream to the actual cause but…so that's R1.

R2…and I'll go through these quickly, and if you have questions you can ask me. But R2 is regenerating the cell membrane. And listen, folks, you...whether it's a hormone condition, whether it's just low energy, brain fog, the membrane is everything. And not to bore you in science but your membrane is where the hormone receptors are. So this is why my blood work looked normal…in my thyroid blood work and most of my blood work because my thyroid hormones were normal but the problem was they weren't getting the message in my cell. Toxins weren't affecting those receptors to the thyroid hormone on my cell, driving inflammation, and they weren't working. So, of course, it makes your hormone levels look normal in the blood. But if you can't get the message in the cell, you don't feel well. That's why my hair was thinning, etc.

So, you know, that, we have to fix the membrane. And, by the way, many of the symptoms that you all have or conditions, there's certain genes that get turned on even by these toxins that I'm talking about. When those genes are turned on, you won't feel well until they're turned off. So what science shows is you have to fix that membrane to turn off these bad genes, so the membrane is huge.

R3 is we have to restore cellular energy. It becomes a critical turning point when we can get energy up in the cell, now, we can detox the cell. Now, we can get the cell doing what it should do and that's really critical. And, then R4, I think is the obvious, it's reducing the cellular inflammation, which interferes with those hormone receptors and the energy, etc. And a lot of my dietary things that we can talk about apply there as well. R5 is

reestablishing something called methylation. And methylation, you need it for cellular detox and you also need it to turn off bad genes. You also need it to get rid of toxic hormones. So, you know, we want to reestablish this. So those five things really are critical to getting the cell to function, to do what it was designed to do so you do get rid of toxins and so you do feel normal.

Katie: Yeah, that makes so much sense. And I know we're gonna talk about it more in-depth towards the end of the podcast but I know that you also…like your True Cellular Detox program, essentially, addresses all of those from the ground-up, basically, right? Because I feel like there are so many "detoxification" programs out there. And, at least from the ones I've seen, a lot of those can actually be really dangerous or do more harm than good. But yours is like a very like systematic approach that addresses all of those, right?

Dan: Yeah. I mean, look, real detox has to get the cell. You know, I'm obviously kind of making that point. But, you know, when people do these things like colon cleanses, liver cleanse, juice cleanse, like the master cleanse…I mean there's so many. Not that they're bad because I don't necessarily think they are. Some of them could be. But the real issue is that they're all too far downstream to where the real problem is. The problem is the cell, real detox has to be at the cell. So those five things I went through, those are the things that are getting affected by toxins that we're exposed to, unknowing most of the time, that we have to upregulate. Yes, and True Cellular Detox it's designed around upregulating cell function, opening up downstream detox pathways, and using real binders so you don't redistribute the toxins. That's what real detox is. I define it by those three things. You have to upregulate cell function, which most detox, you know, programs, the 10-day cleanse, colon cleanse, they don't do that. So that's real detox. And then we have to open up all of the downstream pathways -- the liver, the kidney, the gut. And then, we have to use real binders so we don't redistribute these toxins, which those detoxes do not do.

I was just in Whole Foods literally this week…this weekend. And I took pictures of the three things that were the number one supplements, right? The detox was a whole like 10 shelves of different detoxes. Go and look yourself. Because people are cluing in that this is probably why I don't feel well. But, you know, all crap. And then you had the fish oil, which I don't even want to go there but the whole fish oil section. And then you had the whole probiotics section. I have a problem with all of those things. But anyway, I don't want to open up Pandora's Box but the point is that you know most of it is done wrong.

Katie: Yeah, I agree. And I think that's why conversations like this are so important. Because the other thing I say all the time and I think you might agree is that like we don't have the luxury that maybe our great-great-grandparents did or anyone before that, where we can just actually like live a pretty normal life and be okay in our environment. We have all of these factors that are bombarding us daily and so we do need to take a proactive approach. But that doesn't have to be like a scary or really evasive thing, it just means we need to be like cognizant of that. And I think that's what you do so perfectly with the 5 Rs, is bring up all the things we need to aware of so that we can actually address them so that we can live healthy lives. And from being at your conference and talking to people who have gone through the program, I was blown away, honestly, by some of the stories that they had. Because things that were like considered not treatable or like things that were like life-threatening and these people were fine. So I'd love for you to talk about that just like some of the amazing things you guys have seen, obviously in your life, but other people live as well.

Dan: Yeah, it's amazing. I mean you got to hear some of the testimonies. I mean there was one of my clients she was there with her 11, I guess, 12 now year-old boy who was autistic and I mean and just dysfunctional. And here, now, he is going to regular school doing amazing. You know, and she in tears gave that testimony

just, you know, his world changed. As a matter of fact, I had the pleasure of, you know, meeting him in person, which was great for me. Because most of my clients are virtual, now, from like all around the world and I got to see him. And he gave me the biggest hug and he cried. He didn't want me to leave because he literally connected with me as, you know, the reason why he's, you know, feeling normal. And I cried so that was just a touching experience.

And there's another amazing testimony that the guy who tried to get off one of the most addictive drugs, you know, known to man…and, he tried multiple times. And through the cellular detox, he was able to break through that addiction and get his brain back and life back. And then there was another woman who was…had massive adrenal fatigue and really disease and stuck on Cortef, and she gave her testimony. So, and none of that that was planned, actually. Most of that, they just would love to tell their story.

But, you know, look, when you get upstream to where the problem is, you know, therein lies the magic. And I think the criticism I have even of alternative care today is that it's too far downstream. You know, they're just giving more vitamins and minerals instead of realizing this is why, you know, people still don't feel well, despite taking bio-identical hormones, despite taking, you know…this or that or the other thing, or even dietary changes that may be good but they still don't feel well, completely, because they haven't gone upstream, yet. There's still a stressor, toxic in origin, most often.

Katie: Yeah, I think that's such a profound point. Because I've heard it said and I agree that the medical system isn't broken, it's doing exactly what it was designed to do, which is for like injury care and infectious disease. And those are the things you can, at least in that moment, treat one-on-one. But even natural medicine, now, they're trying to do that same approach and like target something with a vitamin or target something…and like look at the body as isolated pieces. I think that's the wisdom of what you do, is that you're looking at the body as a whole and realizing like the problem may be coming from somewhere completely different and approaching it that way so I think that's a brilliant way to address it, for sure.

Dan: Yeah. You know, one other thing I hate is that for functional medicine because I go to this conferences and, you know, and it is, it's just more vitamin pushing for symptom chasing and blood work. You know, thousands of dollars worth of blood work and then you end up with, you know, thousands of dollars worth of symptoms chasing. You know, alternative medicine is falling into the same…and there's a time and place for it. I give supplements as well, and you recommend them as well. However, if you're doing that not getting upstream I have a problem with that.

Katie: Yeah, that makes sense. And another thing that you spoke about at the conference that I'd love to go a little deeper on because I've been experimenting with myself, is the topic of fasting. I mean your presentation blew me away, just all the information about it. And I've since done like a five-day water fast and a seven-day water fast and I was absolutely shocked because I was monitoring my blood levels of a lot of different factors, testing before and after. And not only how much better I felt but also how drastically just things like fasting blood glucose and like different biomarkers improved in that short of a time. So I'd love if you could walk us through some of what you have in that presentation at your conference, just explaining benefits of fasting and how well-researched it is because that's astounding?

Dan: Yeah. You know, if I just kind of go through five big things that fasting does, you know. And, by the way, there's different types of fasting. There's I think people nowadays have heard of bone broth fasting, where you're just drinking bone broth and very popular. I'm not a fan of juice fasting because it raises glucose. But

that's a type of fast. There's something called whey water that it's not whey protein but its whey water. When they make cheese, this gold liquid comes off. That's a type of fast. But my favorite is just water fasting and, I believe, is actually the easiest. Because after about three days you become very fat-adapted, meaning your body will use only its fat for energy and you just lose your hunger. So I think it's actually easiest. When you're doing some of these other fasts, sometimes, you don't lose hunger. There's something called fasting mimicking diet, or AKA partial fast. Where you're eating maybe 500 to 800 calories a day and there's massive benefits to that as well. However, you don't kind of lose the hunger. I think it's a little harder even. But even, still, I train my docs to use that, oftentimes, for different conditions.

But water fasting, you get the highest level of something called autophagy. So if we kind of breakdown these five benefits, autophagy, it's kind of a word that we've known about for a long time. Meaning your body will…in its amazing intelligence, will use the bad tissue, first, bad cells for energy first. So it literally balances all its nutrition, protein, needs…everything from literally feeding from itself but it does it in an intelligent manner that it will use the bad stuff. So if you have bad cells that potentially become cancer cells, your body knows it. It'll eat those first. It'll eat the rubbish before it eats your good tissue. Incredible. The gentleman who actually won the Nobel Prize in 2016, he won it for autophagy. And now, scientists are realizing that you know, how incredible this is. And let me just give you an example but there are so many.

So in the old days when we…I was trained in water fasting years ago. And one of the criticisms were that, well, your immune systems get lower and that's dangerous during a fast because your white blood cells drop so dramatically. Well, what we learned today is that the reason that's happening is the body, in its amazing intelligence, will get rid of through this autophagy the bad white blood cells. And why is that significant? Because all of us have so many of these white blood cells that hang around too long, live too long, and become over-reactive, hyper-reactive.

So think of allergies, think of food intolerances, think of autoimmune where the body starts attacking itself. If we can get rid of these overactive hypersensitivity cells then, oh, my gosh, we can turn off our autoimmune. We can turn off these sensitivities and that's exactly what happens. So the white blood cells drop and here's the second benefit to fasting, something magical happens. Your body raises up stem cells to recreate new non-hyperactive white blood cells. They're called naïve, meaning that they're just not overreacting but they're still going to do their job so it's remarkable what happens.

By the way, you get even your muscle. If you lose muscle, which is a myth, you don't lose good muscle, you lose bad proteins that would keep you from recovery. So, therefore, recovery in exercise goes up and you end up, in a month, gaining good muscle. So I mean all these amazing things happen but, so number one, the autophagy. Number two, stem cells. Number three, your body resets it's DNA. I mentioned the importance of turning off bad genes with a lot of the symptoms you may not like or conditions you don't like. Like a thyroid condition, we have to turn those genes off. Well, fasting, it does this. It's turning off these bad genes. Fourth is, it will reset your microbiome, so that's your good and bad bacteria in your gut, which we've learned is really important for our immune system, how our brains work. So you reset the microbiome. So it's a way to fix the gut. And the fifth is…and there's many other benefits. I'm just kind of giving you the top five, here. Fifth is what I call hormone optimization, where body becomes more sensitive to the hormones you have. See, it's not about taking more hormones. Healthy people don't have really high hormone levels that cause diseases, cancer, etc. Healthy people are very sensitive at the cellular level to the hormone you have. Fasting does that. You also get this amazing growth hormone rise, you know, during the fast in certain days, which, again, very healing in nature. So I call it hormone optimization because it seems that your body optimizes the hormones

that it has. So, you know, when we look at those five things, you know, the stem cell rise alone, people pay $10,000-$20,000 to get stem cell injections when we realize you get it for free during the fast. So really, the neat stuff that happens during a fast.

Katie: Yeah, it's so fascinating. And I love that you really drove home the point, too, in your talk that the literature is super clear. Like if you look at long-term studies across all metrics there's clear data that caloric restriction does increase longevity. Like they know that. That bears out in the data all the time but nobody wants to just eat less food all the time. And so like you said…I believe you said, you don't have to eat less. You just have to eat less often and then you can still eat when you eat. And I think that was a brilliant way to do it and just giving your body a break. There seems to be such an inherent wisdom in that, that I think people…it makes sense when you actually like understand it the way you just explained. And all those benefits, how long does that take to actually start happening in the body and like in a normal person? I know I've like done a couple of these fasts. What I'm curious, is it like a cumulative effect over a fast over a period of time or when do those things start to kick in?

Dan: Each fast, more and more amazing things happen. I mean, you know, when you look at the Hunza people, they had something called "fasting spring," where they fasted every spring. And that really, you know, we've realized today was the key to their longevity, you know. And most ancient cultures were forced into fast just from environmental factors, right? Today, we're not, so recreating it, fasting even…I fast once or twice every year. My more unhealthy people that I help, I make them fast sometimes once a month, every other month. Because every fast, magic happens. The body gets healthier and healthier and it's amazing watching. You know, I had the opportunity, and you saw that, to fast over 2,500 people right through Facebook. You know, you saw like people would have these things of retracing like, you know, "Gosh, I had this pain, you know, 20 years ago and I'm getting it again." That's your body healing, right? That's those stem cells that are literally creating that healing. It's so amazing, you know, what the body does.

When you're fasting you're relying completely on your body's innate intelligence to healing and it knows what to heal, first, you know, and then second. So every fast you kind of get a deeper level of healing that occurs, you know. But, yeah, so when you look at day three of a fast, you start to see some of the autophagy happening. By day four, it really is kicking it. And that's when I said you become more efficient at burning your fat as energy. So we have a way of looking at something called ketones, which, when you burn a fat you make these. And we could see if you're burning like most of your fuel if not all from ketones. That starts to happen around day four.

Day five, now, you're really using just fat and your ketone levels go way up. And by the way, your ketone levels that those are shown in studies, to heal your brain. That's what they...when they used to put epileptic kids in ketosis and stop the epilepsy, seizures, and neurodegenerative conditions like MS, Parkinson's. We can use ketones to help the brain like almost instantaneous. So you get this high ketone rush, you know, day four and five. And then you also get the stem cells really start going up day four, day five, you know, to even a maximum level at day five.

So that's why we always say, you know, at least, you know, go four days. Five is even better. And that's why I led that particular group in a five-day fast. But and then when we start feeding on day six that you start feeding the stem cells and they start even…the healing continues even after the fast is done.

Katie: Yeah. It truly was an amazing experience. And I think from what I'm remembering, there's like a

mitochondrial aspect as well that kind of falls into the benefits. I know like the mitochondria's gotten a lot of press recently. Like, there's a lot of research about how important it is but fasting benefits, even, like at the mitochondrial level, right?

Dan: Yeah. I mean when you look, again, like the mitochondria, we have in every cell and that's where we make energy. And, really, when you're not making enough ATP, that's the energy that our cells use, that's when you have brain fog, that's when you don't feel well, low energy, can't adapt to stress. So, you know, we know through fasting, you know, each fast are, I called it mitochondrial fitness. Your mitochondria become more efficient at using fat as energy. You have to understand that most Americans, they're stuck at sugar burns. So let me back up. Your cells can only use two things for energy, sugar or fat. Healthy people, they have the ability to go back and forth. If they're not eating, they'll burn their own fat as energy. You know, if they eat fat, they'll burn fat. You know, but most Americans are stuck as sugar burners. And, again, toxins are related to this problem. But they're stuck in sugar burning mode with the inability to use fat as energy. So one of the ways outside of the detox to get the mitochondria to use fat is by putting them in these states of these fasting states. And we even do it daily, which we can talk about in a moment. But every time they fast, their mitochondria become more efficient at using fat as energy. So we can get their cells using fat again.

Now, again, that's great because now you can, you know…when you're not eating your body is burning fat and you feel normal and you don't have cravings and you're getting leaner. But fat burns cleaner than glucose. So we can down-regulate cellular inflammation when we burn fat as energy. Why is that important? Because I'll just make it really simple -- you feel better. Whatever condition you're dealing with, now you have a chance of your body healing it if we can down-regulate inflammation. So getting yourself to use fat is very, very critical and that's what this does.

Katie: Yeah. I definitely, like I noticed I felt incredible while fasting. Is there like an upper limit like to a maximum that you should fast at any given time, or like a maximum length, or how often you can fast, are there any limits there?

Dan: Yeah. I mean I had said, you know, some people would fast even once a month and every other month. And that really it depends on the person, the condition they have. But let's...daily fasting is part of this process that I teach. It's been called intermittent fasting as a name. And that means that even if we go, you know, 15 hours from our dinner and, maybe, miss breakfast and go to the first meal, say, at 11:00 -- so we just fasted 15 hours. Studies show you still get some autophagy, meaning your body will eat some of the bad cells. I always say this, bad cells don't adapt so doing that every day, your bad cells just don't adapt to that very well and they started dying off and you start making better and better more efficient fat burning cells. You know, so doing it daily, short, has a benefit.

Now, you're not gonna get as much autophagy in stem cell rises as you would doing a longer fast. But, I, intermittent fast every day so I haven't eaten today, and it's 3:30 my time. So, and today I may eat one meal today or I may not eat until tomorrow. One day a week, I fast all day. I mean I just don't for a whole day. I do that one day a week. Now, also one or two days a week, I have feast days where I actually purposely eat more. There's a reason for that and I don't want to throw us off course, here. But anyways, you know, so in these intermittent fast…but, typically, I eat in a four to six-hour window. I'll have two meals, typically. Where, maybe, my first meal is at 2:00 p.m. and then I'll have my last meal at 6:00 or 7:00 p.m. So I'm fasting every day, 18-20 hours, which, again, I'm getting autophagy every day. Less but because I'm doing it every day there's a major benefit and we know that your body becomes more and more efficient, again, at using fat, you

know, and as an energy source, which it helps fix our mitochondria.

Katie: Yeah. And what really like turned me on to your approach with this is that, for so long, you hear it said like people with thyroid problems can't fast and people with blood sugar problems can't fast and like all these people aren't supposed to fast. And when you started talking about it and you were like, "And people who have those problems, this is what they do." And it was this variation that you build in and it was like a lightbulb moment for me of like, that, completely makes sense -- listening to what the body would actually need. And so I'm actually, today, on the like 24-hour not eating as well, ironically, right now. Which is great because of my brains way more on, when I record it when I'm in that state, now. But can you explain that? How you like even with your patients throughout the week, you mix things up just to keep the body kind of, you know, on its toes I guess?

Dan: Yeah. There's, I called it diet variation, AKA feast-famine cycles. You know, the bodybuilders learned years ago that if they were staying like in a low-carb diet too long, they would actually start storing fat. And if they just threw in a high-carb diet day…actually, it would tell their body, "Hey, we're not starving. Go ahead and burn fat as an energy source." And it works like that. I mean the body would just feel, "Okay, good. We have plenty of source." Because you have to understand if you're just using fat mostly are your cellular energy the body wants to survive. It will get more and more efficient at using fat and want to store more of it because, what if it doesn't, you know, have food and we need this fat? So let's hold on to it.

So, you're going lower and lower carb, going, why am I getting fatter? Well, if you throw in a carb a day or two, boom. Your body just goes, "Okay, we're good. We have plenty of...we're not starving. We'll burn fat for energy," and it does. It fires up the fuel, it fires up the engine again. So, you know, that's kind of where I got it from but there's another principle and, you know, you brought it up. That when we throw in famine days, these days when we don't eat or we just eat one meal, that forces the mitochondria to use fat as energy. So with feast-famine, we're given the feast where we eat more oftentimes that day. Maybe even more healthy carbs -- more potatoes, sweet potatoes, berries, fruit, and maybe just more. Maybe we eat three times that day. That's a feast day. That reminds our body it's not starving. And then we have these famine days we throw in. That variation scientists, have realized is the key to hormone optimization and it forces our body to, you know, really adapt. And, again, that adaptation, you're optimizing your good hormones. It's clever. It works.

And there's monthly diet variation where you mentioned thyroid people…and by the way, when you do this with these thyroid people as an example, they're able to fast because they're throwing fuel on the fire. By the way, when insulin gets too low, okay, this is why the thyroid people are supposedly not able to fast or even be on low-carb diets. Insulin gets really low. You need insulin to make certain hormone convergence. So, for example, T4 is the store hormone or the inactive thyroid hormone. It has to be converted to T3, which is the active hormone that makes you feel good. Insulin is needed to make that convergence. So if you're already low on thyroid hormone, imagine doing a low-carb diet or fasting, it gets even lower. So by throwing in these feast days, it actually pushes up the insulin and then you're able, now, to make this thyroid conversions that you need to feel good.

So I learned this just by accident but we took women who, during their period or right the week before would say, "You know, my hair starts falling out more. I don't feel well. I get more cravings." And I started saying, "Okay. Well, give into the cravings but just do it with healthy carbs. Eat high carbs for that whole week, whether it's the week before or the week of your period." And lo and behold it worked. So I started doing that with my doctor group and it was magic. I mean it was one week of higher healthy carbs, it was just

transformative for these hormone convergence and it work. So variation weekly, variation monthly, and even seasonally where we go in and out of low-carb diets or ketosis. I'm telling you, you know, that's the key. Every ancient culture was forced to move in and out of different diets at different times, and all we're doing is emulating that it works.

Katie: Yeah, it's so logical. And like I said I was testing because having had thyroid problems in the past…my blood levels before and after fasting and all that, just to make sure. And they improved and that was kind of what made it like really set that in stone for me, of realizing like not only is that okay for my body like it did great on it.

This podcast is brought to you by Vivos. This is something we recently invested in for our entire family and we are absolutely loving it and here is why. So, data shows that the nutrition we receive in utero determines our palate development and how narrow or open our airway and jaw structure are. So a narrow mouth, jaw and airway increase the chances of needing braces, of getting sleep apnea, breathing difficulties and much more. But it was pretty much assumed that your jaw structure was set in stone once you were born or for sure after the first couple of years of life. But Vivos has found that not only is this not true, but they created a non-invasive, non-surgical, easy way of widening the maxilla, the jaw and the airway. So for our kids, this means that they get to avoid the braces that my husband and I both had and for my husband, this means his sleep apnea has disappeared and he stopped snoring, which is a bonus for me. I'll be writing more about this soon but you can check them out, in the meantime, at wellnessmama.com/go/vivos

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Katie: I'm curious if you could address the blood sugar, people with blood sugar problems/issues, not even necessarily people who have like diabetes, necessarily, although that, too. But I get a lot of people who say like, "Oh, I can't fast because I get low blood sugar, or I'm hypoglycemic." So I'm curious, is there a point when the body kind of resolves that?

Dan: Yeah, no doubt about it. As a matter of fact that what you say you can't do is exactly what you need. You know, hypoglycemia if you will, is a precursor pre-diabetes. And what...this is the mitochondria, where you make the energy, which needs to be fixed so this is mitochondrial fitness. You know, when we just gradually get the body to force it to use fat…now, think about this. Think about what's happening. When you're going without food, okay, your glucose levels are dropping. And, which, in a healthy person if your glucose levels dropped, your body will burn its fat and then it will use that for energy. And then your brain uses the ketones that are the byproduct of breaking fat down. You feel great and normal.

So when we have people on this fasting state, you probably saw a lot of the, you know, fasting group was saying, "Well, my blood sugar is in the 30s or 40s, am I gonna die?" It's like, "Well, how do you feel?" "Well, perfectly fine." "What are your ketones?" We showed how to measured them, right, just with a blood prick, you measured glucose and ketones. My ketones were soaring high. Well, that's why you feel good because you transitioned from that needing glucose to using fat and ketones as energy. So, you know, that happens,

eventually, to all of us. So fasting is a way to just keep your…now, if you're one of these hypoglycemic persons you just better stay home, lay in bed two/three days, you'll get through it. And then, all of a sudden, now, you're forced to use fat and ketones. And all of a sudden you're going, "Hey, I have low blood glucose and I feel absolutely fine and fantastic."

But we can do it gradually, too, by, you know, getting them to intermittent fast. So now we go maybe 12 hours without eating. You know, "I don't feel well." "Okay, great. But, eventually, you'll be fine." Then we can go 13, 15, 18. So we even start pushing out when they're eating daily and your mitochondria will adapt. Remember, bad cells don't adapt. Okay. And you said it early. I always say don't eat less. Because we know that eating less creates healthier cells and people live longer. But in America, we think that means eating half of your plate. No, it doesn't. We need to emulate what ancient cultures do and eat less often. That's how you eat less. But when you eat you eat until full so the body never thinks it's starving. So with these persons that have hypoglycemia, we get them eating less often slowly -- that's the key. And, by the way, Katie, sometimes the first instruction is eat three meals with no snacks. That's sometimes…like, eventually, you will live. You will live no matter what but, eventually, you go, "Okay, I'm doing okay." Great. Now, let's cut it down to two meals, so that's how we do it.

Katie: Yeah, that makes sense. And I look back…like I used to have blood sugar problems in college. And, now, like fasted for seven days and had no issues at all. So I think you're right, the body will eventually figure out what to do for sure. I know like for people who are new to this idea, both, for intermittent fasting and for block fast, which are like typically just water fast, I know I'm gonna get all the questions related to like what actually breaks the fast, can I brush my teeth, can I drink coffee, can I drink herbal tea, what about stuff without calories, what about...so how do you answer those people for both, intermittent fasting and water fasting? Is there a difference or what things break the fast?

Dr. Pompa: Yeah. I mean normally on an intermittent fast, where you're just fasting 15 hours, as an example. You can take supplements. People can even drink coffee. I always get that question, right? Yes, you can drink your coffee but here's what I recommend. Is, testing your blood glucose 30 minutes after…well, before and after. So meaning that you test your morning glucose, let's say it's 80. And then drink your coffee and test 30 minutes after. If it goes up to 90, 95, 100, then you'd probably better switch to maybe tea because we don't want to raise glucose. If it stays the same or drops? Great, drink your coffee. We don't want to eat food. You know, some people can do it fine with a little bit of fat in their coffee. Some people do better with black coffee. The point is, is test to see if it's okay. So you can take supplements on an intermittent fast.

But block fasting, you know, these extended fast we don't want to take supplements. Some sea salt, electrolytes definitely will help people the first three days because you lose a lot of water and then you lose electrolyte. So, you know, that's gonna help the majority of people. Eventually, it balances out. But if you're doing a four-day or five-day fast, you probably won't have time to balance, so drink some sea salt. That'll help maintain your electrolyte. That's it. I mean brushing your teeth? Well, that can stimulate digestive enzymes, so not recommended. Just dry brush. You know, scrape your tongue and that's the key. Honestly, that will help your breathe more than even brushing your teeth with those toothpaste that will stimulate digestion. You don't want to do that. So, yeah, on a block fast, no supplements, just electrolytes, some magnesium is fine. That's it. And no coffee or tea, just water on a block fast. Shorter fast, you can go ahead and do that stuff.

Katie: That makes sense and good to have those metrics. I'm curious, this is a sheer curiosity question for me but I noticed in the group when everyone was fasting and, also, in myself. My blood sugar levels never were

ever in bad ranges. They were all like, even my higher fasting blood glucose were like in the low 80s. But I noticed like some days my fasting glucose in the morning was actually higher than my like evening glucose, even on a fast. And I've read a little bit about something called the dawn effect but I was curious like why am I someone seeing numbers like that? Because that was kind of confusing to me.

Dan: Good, good question. Yeah. The dawn effects mean that to get up in the morning and have energy, your body will raise its cortisol up. It's very normal for all of us. And when the cortisol goes up you get a little pop in glucose, which, again, normally your body will use that glucose as energy. Most cultures do not eat breakfast, by the way, so it's not necessarily the most important meal of the day. And that glucose, you know, will burn up and then it will drop down -- very normal. On an intermittent fast let's say where, you and I, right now, you know, we haven't eaten today. It's 2:00 or 3:00, depending on where you are…in the afternoon. Our morning glucose, let's say our morning glucose is 80. Mine will tread down towards the day but my ketones, because now I'm burning fat, will trend up, so that will go up. That's normal on an intermittent fast. That's, basically, that's a way we use…and I train docs to see how someone's doing on their intermittent fast? Do they need to shorten it or lengthen it?

But during a block fast, we often see the opposite effect. Because you'll wake up and your ketones, because you burn fat all night, it will be very high. And then what we see is, your body then will use the ketones through the day and we see it trending down. So it's kind of confusing, but it is, there's a little bit opposite. But that normal glucose, in the morning, higher is normal. But, again, during a fast, sometimes, you can see an opposite effect. You might have a low glucose and high ketone in the morning and then have a raise in glucose. As your body is active, it could release some glucose from the liver and muscles and you could see a trending up, so kind of opposite what you would see normally during a block fast and intermittent fast.

Katie: That makes sense. Thanks for explaining that. And you've mentioned, so you mentioned the keto diet a couple of times and I want to touch on nutrition a little bit. Because having seen you guys eat…and I feel like there's so much information, right…out there, right now, about the keto diet and what it looks like. And there's like these recipes for like keto foods that are, essentially, processed junk foods without carbs. And so I'm curious like, first of all, how do you define that keto diet? Because it seems like there are certainly like plenty of vegetables and plenty of food that get included in that. It's not restrictive at all. But I would love if you could just give a little guideline of what a healthy keto diet looks like.

Dan: Yeah. I mean ketosis, keto diet is basically getting yourselves to use fat as an energy source, you know, least 95% of the time. Well, how do we do that? On average, if you get your carbohydrates under 50 grams a day. Some people, under 30 or 20, some people can be 80, you know, but 50 is a good average. If you could get your carbs, your total carb intake in a day under 50, you'll get into ketosis eventually. It takes only two weeks, three weeks, even four weeks for that adaptation to do occur. That's ketosis.

You know, I believe every ancient culture was forced in the times of ketosis. The American Indians went in the winter but in the summertime, they weren't in ketosis. And I mentioned the Hunza tribe. In the winter, they were in ketosis. In the summer, people thought they were vegetarian. So as part of my diet variation, I believe it's important to actually switch diets. So I think the mistake that people make is they stay in ketosis all the time. You know, that's one mistake with ketosis. I like moving people in and out of it. And that variation, there's magic there.

So I'm a fan of vegetarian diets. Sometimes I'm a fan of ketosis, high-fat diets. But that's another mistake is,

it's a high-fat diet. It's not a high protein diet where people just loading up with tons of protein, which can be a mistake as well. It's a high fat, moderate protein, low carbohydrate diet would probably the best to describe it. And people say, "Well, how much protein? You mentioned how many carbs." You know, about half your lean body weight, so if you're 150 pounds lean, you know, maybe 75 grams/80 grams of protein a day, and that's just an average but...so, you know, and if you're an active exerciser, you probably get away with little more.

But anyways, so, you know, those are kind of the things. Now, in ketosis we can eat a lot of vegetables. Because, really, it's the net carbs that matter. So if you Google how many carbs are in broccoli because you're trying to figure out your daily carb intake, let's say it's 10. Okay. Let's say five are from fiber, five are not. You only count the five not from fiber. So you can minus the fiver carbs and that's called a net carb. So when you look at vegetables, you know, they're...okay, there may be some carbs but most of them are fiber carbs so they're very low in carbs, so eating good grass-fed meat, vegetables, you know, raw cheese, nuts, seeds, I mean even berries, all of those are on a healthy ketosis diet, so low carbs but it could still be plant-based. By the way, we have even vegans in ketosis. So I mean that shows you that ketosis really just means getting your carb intake down low enough but it can still be a very plant-based diet so that's healthy and that's a healthy ketone diet.

Katie: Yeah. I like that you said that. Because I feel like I've seen people fall into the trap of like a ketosis type diet and they're eating like bacon and cheese and it's...but realizing like that you can eat…like you said, that you can eat a lot of vegetables on a keto diet. And, also, that those healthy fats can come from fish, or olive oil, or olives, or avocado, or so many other sources besides just cheese and meat.

Dan: Absolutely. I have something, just, you know, my two-two-two rule. Where it's like get two tablespoons of coconut oil a day, get two tablespoons of olive oil a day, two tablespoons of like gee or grass-fed butter. Gee is a clarified butter that…short chain fatty acids, butyric acid helps heal the gut, amazing. And then one or two, get two teaspoons of sea salt a day. Because remember I told you on the fast you're gonna lose electrolytes? When you go into ketosis you will lose electrolytes, too. And a lot of that low energy that people experience is the depletion of electrolytes, so the sea salt will help you maintain potassium and other electrolytes.

Katie: That makes sense. And to make sure, because I know we'll get this question if we don't answer it fully. Are there any other specifics that women specifically need to be aware of, if they're going to fast or go into ketosis? You mentioned like the weekly variation and the monthly variation. Are there any other things that women specifically need to be aware of?

Dr. Pompa: Yeah. I think that women definitely need to be aware of after you adapt, so electrolytes in this adaptation phase…and I said it takes two weeks to four weeks to adapt. Electrolytes are very important. And then, once you do adapt…oh, and by the way, you can buy a ketometer online, keto, K-E-T-O-, mojo, keto-mojo.com, $35 bucks, get glucose and ketones strips, both. But when you're above 0.5 on that test…and I always say just take it first thing in the morning. You're officially in ketosis, 0.5 or above, you're in ketosis. So once you adapt, that means you're getting above, you know, 0.5 or above consistently every morning, now, you're keto adapted or fat adapted so to speak.

Now, it's important to add those high carb days. Some people do better with one, two, or three of those a day…a week, I'm sorry. And that means getting your carbs up to maybe 100-150 healthy carbs a day, one or two times a week. Very good. And then throw the fast days in, where you only eat one meal. That's the feast-

famine. Right? Very important for women. And then some of you may need the week of your period or the week before of high carbs, healthy carbs for one week -- magic. So very important to add the diet variation. And, again, I don't believe you should stay in ketosis. I like to be in ketosis in the heart of winter. But in, you know, November-December, I'm out of ketosis purposely. Spring, I come out again. And, you know, in the...I like being in ketosis at some point of my summer because I'm fat-adapted…so I'm a cyclist and I like doing things like that. And when I'm in ketosis I can go forever. So I move in and out of ketosis, seasonally and I think, for women, it's very important as well.

Katie: Yeah, that's great to know. And now I want to make sure we delve into the detox challenge, too. Because you have that setup, you have yourdetoxchallenge.com. And if I'm remembering, you're actually doing it with my friend, Ben Greenfield as well. And I'm going to be doing it along with you guys and I wanted to make sure we talk about it in case anyone wants to join us. And I'm hoping that like fasting has been helping get my body ready for that as well. But can you explain kind of what that detox challenge is and how are you guys are taking people through the process?

Dan: Yeah. We're gonna be doing 90 days. And the first month is what I call prep-phase of True Cellular Detox, where you prepare the cell as I explained, and the downstream detox pathways. And with it, you know, with the challenge you get all the supplements and the packets, like these two packs a day. And then, month two is the body phase of detox. And the goal there is just to clear the easy to get toxins to set up the last phase which is the most important and that's the brain phase.

Most of you who don't feel well because the toxins are in the brain. Like I was explaining how they were in my pituitary, which controls my thyroid and my adrenals. Studies show that is the problem, right? Hormones, that's the problem. The control tower is the pituitary, it sits right in the brain. But we set that up, so month three, I call it the brain phase. And then that's where, you know, the magic happens and some of you are gonna want to do multiple brain phases after that. But the cool thing is you have access to my portal, where I educate you on this whole process. And as a matter of fact, I talk about ketosis, how to test, all that's in there, all the fasting that's in this portal as well.

And then, Ben and I are going to do a call a month through the process. Actually, it's gonna be four calls, and we're gonna just answer questions. Ben's gonna talk about a lot of his exercise biohacks that, you know, he's learned through the process. Because a year ago, Ben and I did this, the True Cellular Detox program. And it was such a hit, we decided to do it again. And he actually transformed, by the way. He had a massive transformation, himself. He's, you know, a really fit athlete but, you know, his athletic performance transformed. So he wanted to do it again, so yeah, join us. It's gonna be an amazing, fun, and you are going to learn a lot. And you're definitely gonna hear things you've never heard before.

Katie: Yeah. I'm super excited. And the URL will be in the show notes, all the links to your post because you've written about all these topics, will be in the show notes at wellnessmama.fm. But I believe that URL is yourdetoxchallenge.com and I think they can also take a quiz at evaluatemytoxins.com to learn like what respecters they have for their toxic load, is that right?

Dan: Yeah, exactly. Because people say, "Well, you know, how do I know if I'm neurotoxic, right?" You know, I don't know like everyone holds toxins but neurotoxins are these toxins that cross into the brain and the nerves, right -- neurotoxins. And many of which…and we'll talk about this during that challenge but we're unknowingly be exposed to even via our makeup and personal care products. But, yes, so that is

when...because I train doctors, there's a certain set of symptoms that we're able to look at and determine a neurotoxic person. So take it, yeah. I mean that's step one. And then, during the 90-day challenge, we do a Meta-Oxy test, which shows cellular inflammation. Which, again, that's what toxins are driving, disrupting our hormone, you get to take that. That's part of it as well and a visual test as well. So anyways, but start with, you know, that test because there's certain clues and if it quacks like a duck it might be one, so find out.

Katie: Yeah, for sure. And I'm excited because I feel like…everything is included. You guys send supplements and it's this whole protocol and it's gonna be fun to hang out with you and Ben but I really am curious to see my own reaction, just from talking to all these people at your conference. People who like it helps their weight loss resistance, or their thyroid, or like chemical sensitivities, people who are like really chemically sensitive -- just like amazing things. So I'm really excited that you guys are doing it again and that I get to join and that you've opened it up to everybody listening as well, so thank you for that.

Dan: Yeah. Cool, you'll gonna learn a lot, all of you, everyone.

Katie: Awesome. Well, Dr. Pompa I'd love to ask toward the end if anyone is like new to this topics and isn't really familiar with your area of research what would be a couple of baby steps that you would give them at the beginning just to get their feet wet and kind of get started and start moving in the right direction?

Dan: Yeah, you know, eat less often. Get rid of snacks. You know, get yourselves working a little healthier, challenge those mitochondria, right? I think most people right there…and, by the way, most of you are saying, "I only eat three meals a day." Well, not according to studies. Most Americans -- this is hard to believe -- eat 17 times a day. Okay. When I was asked that question I said, "Okay, six." Right? It's like, because, remember that handful amounts, you know, that kombucha -- these are all meals that raise glucose and raise insulin. So eat less often. Don't eat less, eat less often. And start by just not eating snacks. So, yeah, I mean that's a first step. But I think, in this case, the timing of the True Cellular Detox Challenge we're doing is another great first step so there you go.

Katie: Yeah. That's awesome. And, hopefully, we'll see some of you guys there as well. And I'll be reporting on my results as well and writing about it. So it'll be fun, for sure, 90 days, and I'm sure I'll learn a lot because I always do when I am around you. But thank you so much for your time today and for sharing the story and for all the work. I know that you have a tremendous passion for helping people move toward health and for helping families and so I love that you've taken the time to be here.

Dr. Pompa: Yeah. Thank you for having me. From pain to purpose, you know, this is what ends up doing called to when you go through it but it's about changing lives. Thanks for having me.

Katie: Absolutely. And thanks to all of you for listening. And I will see you next time on the Healthy Moms Podcast.

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