



Episode 334: Why We Need Salt (and How Much)
with Robb Wolf

Child: Welcome to my Mommy's podcast.

This episode is sponsored by UpSpring Baby, a company making innovative science-backed products for moms and babies. And I want to tell you about one of their products in particular because even though I'm not even currently pregnant or have tiny babies, it's been really helpful to me. I really like their Stomach Settle nausea relief drops, which are great for any kind of stomach upset from motion sickness, which I get and a couple of my daughters get, to morning sickness, which I thankfully do not have right now because I'm not pregnant, but any kind of bloating or digestive upset at all. I love to keep this on hand and my kids like them too. They help relieve nausea, motion sickness, gas, bloating, and any kind of digestive upset. In fact, I keep these in my car, in my kind of like emergency kit in each of my cars, and also in my purse just to have on hand because tummy aches can be a thing when out and on-the-go. Their lemon-ginger-honey flavored Stomach Settle drops contain not just one but three natural remedies for digestive upset, ginger, spearmint, and lemon. Plus, they contain vitamin B6 to help relieve occasional nausea, motion sickness, gas and bloating. Their ingredients are micronized, meaning that they provide faster-acting relief, and they have been really helpful, like I said, especially for motion sickness. They're individually wrapped. They're great for on-the-go, and I was able to negotiate a discount just for you. You can check this out at upspringbaby.com/pages/wellnessmama, and the code `wellness10` saves you 10%.

This podcast is sponsored by BLUblox. That's B-L-U-B-L-O-X, which is an advanced light-filtering eyewear company. You've probably seen pictures of me on social media wearing orange glasses of various types at night. And here's why. In nature, we aren't exposed to certain types of light after dark, specifically, blue light, because that type of light signals the body that it's daytime. That in turn suppresses melatonin and can interfere with sleep. This is the reason that a really dramatic study found that camping for seven days straight with no artificial light at all could actually completely reset and heal circadian rhythm and help a lot of light-related problems, like seasonal affective disorder. This is also the reason that I wear orange glasses after dark to block these types of light and protect my sleep, which I am adamant about protecting. I also wear certain types of yellow glasses and anti-fatigue glasses during the day if I want a computer to reduce eye fatigue. BLUblox has orange glasses and yellow glasses. Their orange glasses for nighttime wear are designed to block 100% of the wavelengths between 400 nanometers and 550 nanometers, which are the ones that are studied to interfere with sleep and melatonin production, and circadian rhythm. My kids also wear these kinds of glasses at night. And I noticed a difference in their sleep as well, which is a huge win for a mom. This is especially important when we're watching a family movie at night or looking at any kind of screen as the artificial light, there is a source of blue light and can interfere with sleep. You can learn more, they have a ton of educational content and check out all of their innovative protective glasses by going to blublox.com/wellnessmama and using the code `wellnessmama` to save 15%.

Katie: Hello, and welcome to the Wellness Mama Podcast. I'm Katie from wellnessmama.com. And this episode is with one of my good friends on a topic that I think is increasingly important, especially for women, and that is salt intake. Because we haven't gotten the correct story. And limiting sodium, especially in certain scenarios, can actually be a little bit harmful. So, I'm here with Robb Wolf, who is a former research biochemist. He's a health expert and author of the New York Times Best Sellers "The Paleo Solution" and

"Wired to Eat". He's been the review editor for the "Journal of Nutrition and Metabolism" and the "Journal of Evolutionary Health". He serves on the Board of Directors of Specialty Health Medical Clinic in Reno, Nevada and as a consultant in the Naval Special Warfare Resilience Program. He is a former California State Powerlifting Champion and is a purple belt in Brazilian Jiu-Jitsu. He is extremely active and has been researching areas like low carbon keto dieting and sodium intake for a really long time. And he goes really deep on the science of this, and the practical applications of why women, especially potentially pregnant and breastfeeding women, might need a lot more sodium than we're being told that we need. Really fascinating episode. I know that you will enjoy it as much as I enjoyed recording it. So without further ado, let's join Robb. Robb, welcome. Thanks for being here.

Robb: Hey, huge honor to be here. Always glad to bring down property values.

Katie: Oh, well, you are so much fun to talk to. And you are an expert in a topic that I've been reading quite a bit about recently, which is all things related to salt and sodium intake. So I feel like to start broad, a lot of people are aware that salt has gotten kind of a bad reputation. And people are often told to limit or avoid sodium, especially added sodium. So I want to start with that concept that a lot of people seem to think we should be limiting sodium. Is that what we're actually seeing in the data right now?

Robb: Well, it's really interesting because when we look at the problems that folks face like cancer is a big deal, autoimmunity is a big deal, but arguably the biggest problem that folks face is cardiovascular disease. And when we start, you know, unpacking that problem, cholesterol plays a really central role in at least that discussion, to what degree it plays a factor in it is super contentious. But one thing that is really well established is that folks with hypertension, with high blood pressure, they definitely are at elevated risk for cardiovascular disease, either a stroke or a heart attack. And this elevated blood pressure is arguably a feature of what's causing damage to the vascular endothelium.

And what's interesting is a driver of elevated blood pressure is sodium. But what's kind of challenging to unpack in that story is over the last 30, 40 years when folks have been put on low sodium diets and we have great randomized control trials on this, like very rigorous science, they will take folks and put them on an extremely low sodium diet and it doesn't really change their blood pressure much. In some people it does. There are these folks that are sodium sensitive, hypertensive. And in these people we can see a decent kind of up or down tick in their blood pressure based off of what their relative sodium intake is. But this is less than 1% of the population.

So it's interesting, we know mechanistically, that sodium is important in blood pressure, we know that blood pressure is important for cardiovascular disease. But what got missed in that story is that the reason why the body hangs on to this sodium in the first place is we're just generally over-eating and maybe over-eating too many carbs. And when our insulin levels elevate, when we become insulin resistant, then we tend to retain sodium. Insulin causes an upregulation in the production of a hormone called aldosterone. Aldosterone causes the kidneys to retain sodium. And so it's interesting because there is a reason to be concerned about sodium and blood pressure, but it's not really the way that we've been looking at things.

And this is also the flip side when people go on a lower carb diet, whether it's paleo or keto, or what have you. One of the primary features that we see with that is that people tend to lose a lot of weight very quickly. And this is water weight. And this is the body shifting from really strongly retaining sodium to releasing a lot of sodium. And that's good from the perspective of improving our cardiovascular risk profile and just generally feeling better. But if that goes too far, if somebody is on a low carb ketogenic diet and particularly if they're active, what we then need to do is supplement sodium to get them back up to a normal baseline.

And so just in really broad brushstrokes, I think that that's a big part of the maybe mischaracterization of sodium. And then the other piece is that if we look at eating mainly whole unprocessed foods, there's not a lot of sodium there other than what we might add to it. But the place that we do get a lot of sodium is from processed foods. And in any way that you cut it highly processed foods are clearly not good for folks. And so I think that to some degree, there's been both a misunderstanding of the mechanisms of where sodium is problematic, which is mainly elevated insulin levels, but then also guilt by association because sodium tends to go along with processed foods. But that doesn't necessarily mean that adding sodium to an otherwise healthy diet is going to be similarly problematic.

Katie: So what are we actually seeing in the research based on what you've read of how much sodium do we actually need? And I would guess that would vary based on a lot of factors like how active someone is, for instance, or like you said, how much processed foods they're eating or how many carbs they're consuming, but are there any general rules of what the data says we actually do need?

Robb: Yeah, yeah, that's a really good question. And there was a paper that was published three years ago, I want to say, two, three years ago where they looked at sodium intake and all-cause mortality in type 2 diabetic heart patients. So these were the folks that you would make the case that if a low sodium intake was going to benefit these folks and anyone, it should be these people. But what was interesting is what emerged out of this research is what's called a U-curve. And if on the X axis, the bottom axis, we have amount of sodium consumed, and then on the Y axis, the up and down axis, morbidity and mortality, what we found in this study was that the folks that were consuming 2 or fewer grams of sodium per day had very high morbidity, mortality and this is at or below the levels that most medical professionals recommend. They generally recommend the lower the sodium, the better.

But what was interesting is, as folks in this sick population increased sodium intake out to about 5 grams, that was the lowest of all-cause mortality. So 2 grams was quite dangerous, 5 grams was far less dangerous. And then it was interesting, you had to get all the way out to almost 8 to 10 grams of sodium to have the same morbidity and mortality rates as folks consuming 2 grams of sodium. So what you take from that is that low sodium intake is far more dangerous than high sodium intake in general. And so that 5 grams per day is a pretty defensible place to just start the conversation around, you know, this is probably a safe level to consume, and it's worth noting, there are some high sodium cultures around the world like Japan and some other places that their average intake is around 10 to 11 grams a day. So it's significantly higher even than what we're consuming and they tend to have fewer health problems.

But that's maybe a way to think about bracketing the low end, you know, somewhere around maybe 4 to 5 grams a day. And again, to your point, depending on activity level and the size of the person and stuff like that, that's going to dramatically influence the amount of not just sodium but potassium and magnesium and the other electrolytes that we're concerned with. But it's interesting if we kind of focus on sodium, a lot of these other things tend to fall into place. But then when we look over at sports medicine, the American Council of Sports Medicine, ACSM, they have some guidelines that depending on the temperature, the humidity, the activity level of an individual, their recommendation start at 7 to 10 grams of sodium per day for folks that are in warm environments, humid environments, or are highly active.

And just kind of anecdotally within the keto scene, Ketogains, folks that I've worked with, we've seen high motor athletes that are low carb get up as high as 12 to 15 grams of sodium on some very active days. But these are folks that are, say, like doing 3 hours of Brazilian jujitsu and their facility is not air conditioned, and it's 90 degrees and 80% humidity and stuff like that. But it's interesting. We haven't really seen benefit much above that 12 to 15 gram per day level, even in extremely active large individuals. And then we do see, you know, a good case to be made that somewhere around that 4 to 5 grams per day intake levels should be consistent with good health.

Katie: And what are some things that we can look out for? Are there symptoms associated with not consuming enough or with consuming too much? Or how can we gauge individually how much we probably need?

Robb: Yeah, yeah, it's a really good question. And it's interesting because blood work doesn't help us much in this case because the kidneys do a remarkably good job of dealing with different electrolyte levels. And so, folks oftentimes ask if there's blood work that can be done and if somebody is overtly deficient in like sodium or magnesium or potassium. That can show up but it's difficult to pin that stuff down from a lab perspective. So we have to go with much more subjective elements: how do you feel, cognition. Some of the common things that people report when they eat lower carb or just in general if they're lacking in sodium, one of the most common problems is folks will go from sitting to standing, and upon standing, they will get lightheaded, and that's a really good indicator that the individual needs more sodium.

If they're feeling lightheaded or kind of dizzy while exercising, that's oftentimes a pretty good indicator that they need more sodium. Mental fatigue, lethargy, these are pretty common signs of needing more sodium and electrolytes in general. But then the when have you gone too far question? Usually we see a little bit of gastric upset like possibly some disaster pants type stuff, but if folks have to get really aggressive on the supplementation for that to happen, if they kind of sip on their bone broth or their electrolyte beverage or what have you, or if they're just kind of salting food, that's usually not a problem.

Katie: Gotcha. Okay. So you've mentioned other electrolytes, specifically magnesium and potassium. And I know some people are also concerned with getting enough calcium. Are there any general rules of what sort of ratio we need these in or how to know when we need other electrolytes as well?

Robb: Yeah, it's a really good question, and the way that we tackle this, we looked at well formulated whole food diets, and looked at the amounts of calcium, magnesium, potassium, and sodium that these largely whole unprocessed food diets provided. And what we found is that they adequately tick the box typically on calcium. They ended up being pretty good but not quite sufficient on magnesium and potassium and then they were quite deficient in sodium. And again, these numbers kind of vary from person to person. We should throughout the course of a day generally consume more potassium than sodium. Virtually all foods unless they're like fermented and having sodium added to them will typically be much higher in potassium than sodium.

So, again, if we mainly stick with nuts, seeds, fruits, vegetables, meat, shellfish, that type of stuff, the ratios kind of play out pretty naturally, the amounts and ratios, but the one thing that we tend to be a little bit deficient in and that will range from person to person tends to be the sodium.

Katie: Gotcha. Okay, that makes sense. And basically just to recap, so if we all have a baseline need for a certain amount of sodium, but that can definitely increase with things like exercise, being low carb, I would guess sauna use, what about are there any hormonal considerations there? Like, for instance, do women need more sodium at different points during their cycle or during, for instance, pregnancy or breastfeeding?

Robb: You know, interestingly, I don't know for sure about the specifics around pregnancy, but we actually have a study that's underway at Vanderbilt looking at sodium supplementation using LMNT and breast milk production. Just anecdotally, we had a just wildfire of folks tagging us on social media. And it was within these kind of breastfeeding mom forums and gals would post like, "This was yesterday's pump, and it was like a bottle with just a scant amount in it. And then the next day it was three or four full bottles." And this was striking enough that it got the attention of the Dean of the School of epidemiology at Vanderbilt, she's an MD PhD, got her attention enough that she was interested in doing a women's health study around this.

And so this is underway right now. And so it's difficult to say exactly what those levels are outside of just overlaying what our basic needs are, which is probably somewhere between 5 and 10 grams per day. But it mechanistically it makes a lot of sense that it would help breast milk production because it will increase fluid volume supplementing with sodium. It will encourage you to drink more fluids in general. And interestingly, when we look at some of the functional medicine remedies for, say, adrenal fatigue, HPTA axis dysregulation, increased sodium intake is very helpful because it does downregulate aldosterone. And when aldosterone is produced, it tends to release both epinephrine which is adrenaline and also cortisol. And epinephrine and cortisol are antagonistic towards the production of breast milk.

So, you know, again, I think that one could make the case that just generally sticking within the bounds of what we would consider normal intake, which is somewhere around that, like 5 to 10 gram per day level is probably optimum, but you could definitely make a case that in general a really low sodium diet during pregnancy is probably not a good idea. I guess one problem area would be gestational diabetes and some of

the kind of hypertensive state that can occur with that. But you could also really make the case that this is again probably an insulin-driven phenomenon. I don't know if you've had Lily Nichols on the show, but she's the genius with this stuff. She's really phenomenal in helping to deal with that gestational diabetes and the preeclampsia and things like that.

Katie: I have not had her on, but I'll have to add her to the list.

Robb: Oh, she's amazing. She is amazing.

Katie: That's really interesting to know. I'd love to understand a little bit more. You mentioned the HPA axis dysfunction. Can you explain for anyone not familiar what that is and why sodium could be a remedy there?

Robb: Yeah, so the HPTA axis...it's kind of funny within mainstream medical circles, people will scoff at the term adrenal fatigue and this is something that has been in kind of alternative or functional medicine circles for, I don't know, 30 years, 40 years, perhaps even longer than that. And it's this kind of complex of symptoms. It's burnout. You have low energy, tend to be very tired and lethargic in the morning, and tend to wake up more just about the time that you're ready to go to bed. We now understand that there's some elements of flipped circadian biology going on there. But the thought was that in that whole Hans Selye general adaptation to stress response theory, was that if an organism is exposed to chronic stress above what they can adapt to, that the adrenals will eventually kind of poop out and they'll be incapable of producing cortisol.

And over the course of time, what's really fascinating about this is the specific mechanism of the adrenals failing to produce cortisol is not accurate, but the symptomology of people just being sick is, and so you will find doctors that will argue to their death that adrenal fatigue is a non-thing. But then if you say, "Well, what do you think about hypothalamus pituitary adrenal axis dysregulation?" They will say, "Oh, yeah, well, that's absolutely a problem." And they will describe all the symptomology being identical to what we usually...like alternative practitioners have called adrenal fatigue. So it's kind of an interesting thing where people identified the problem, they had a proposed mechanism of the problem, which didn't entirely end up being accurate, but it's still a significant problem that people face.

And the way that sodium helps in that scenario, is that it tends to blunt the kind of cortisol production that is associated with that kind of hyper vigilant and overstimulated, overstressed state. And it's one of a multitude of things that folks will recommend in the course of helping to improve that adrenal fatigue or HPTA axis dysregulation. But usually that burnout is caused by lack of sleep, either exercising too much, or really chronic stress, a traumatic event. So like PTSD and also traumatic brain injury has a lot of overlap in its HPTA axis kind of arena. There's a variety of interventions from cognitive behavioral therapy to adaptogens like Schizandra and other remedies, but also sodium ends up playing a really important role in just kind of establishing that baseline for folks.

Katie: That makes sense. For me, I noticed a big difference. I think I've probably had a lot of those symptoms a couple of years ago for a burnout and I had to address sleep, and also morning sunlight helped my levels a lot getting outside in the morning. But vitamin C and sodium were both big factors for me in over time regulating that. So I think that's really, really wise advice. And you've mentioned LMNT, but I know we haven't really explained what that is yet and I would love for you to talk about that. Because I know you have your own story involving learning how much sodium your body needed. And you realized this was a big enough problem that you actually developed a product to help solve it. So talk to us about LMNT.

Robb: Yeah, so you know, in theory, and I hate the term expert, but in theory, I'm fairly well versed in ketogenic diets. I'm a biochemist by training and all that stuff. And I've largely eaten this way for about 22 years and generally motored along really, really well, but I do some Brazilian Jiu-Jitsu and what I found difficult was fueling the more frisky jujitsu sessions on a low carb diet, and I found that I would need to introduce a little bit more carbs, but then when I titrated carbs up, I didn't feel as good cognitively. And I just felt kind of stuck in this cul de sac. And then I met Luis Villasenor and Tyler Cartwright. They're the founders of the Ketogains program. It's an online ketogenic boot camp and I started kind of stalking those guys and their results are just amazing.

They do a phenomenal job with people and they're really wonderful coaches. And I managed to weasel my way into their lives and told them what I was up to. And, you know, ask them, "Okay, looking at what I'm doing, here's my macros. Here's what I'm up to on my training. What else do I need to do to make things work better?" And they just immediately they said, "You need more sodium." And I was like, "Oh, no, I salt my food. I'm good." And like people will have a tendency to do when your coach tells you to do something, you ignore it for a good long time. And so about a year went by and these guys patiently kept saying you just need more sodium, just need more sodium, and then I finally listened to them.

And Luis made the point, he's like, "Hey, why don't you weigh and measure and put into Cronometer?" It's this food logging app. "Everything that you eat, everything that you supplement, and let's see what your real sodium intake levels are." And my real sodium intake was below 2 grams a day. So even though I felt like I was salting my food, like I just I wasn't doing remotely a good enough job. And so initially, I was just salting bone broth and then I was making some homebrews of lemon juice and magnesium citrate and light salt and regular salt. And it was just a miracle. Like, it changed my performance. It improved my sleep. I got leaner. And the only thing that I was doing was improving my sodium intake. And so this was a good three years ago, if not a little bit longer at this point.

And so these guys had already known that sodium was super important and they had been beating the drum on this for a good long time. And so I started really championing this idea around electrolytes, in particular sodium and we actually posted a make-it at home recipe, like use this much table salt, this much no salt, this much, you know, like magnesium citrate or magnesium glycinate, or something like that. Mix it all together, use some stevia and there you go. And this thing just had a stunning number of downloads. Like people loved it. It helped them. But then we started getting tagged on social media posts where it was like, "Hey, Robb, Tyler, and Luis, I was going through TSA today and they didn't like my three bags of white powder, LOL."

And so we started kind of putting our heads together and asking would it make sense to do some sort of a convenience product around this, because trucking, you know, white powders around and mixing it and everything is not all that convenient. And we started investigating kind of the feasibility around it and I had a suspicion it would either do really well or just like die like a plane into a mountainside. And so far it's done really well. And I think part of the reason for that is when people are deficient in electrolytes in particular sodium, when they fix that they feel better really quickly. I mean, within 5 or 10 minutes, it's a night and day kind of game changer experience. So we've had a remarkable amount of buy-in from police, military, fire, new moms, keto advocates, like it's been really broad and very interesting the variety of people that have been jumping in and giving it a shot and really seeming to benefit from it.

Katie: Yeah, I'm definitely a fan, especially within the last couple of years I spend about 45 minutes a day usually in the sauna. And I notice now if I don't get enough sodium I have to be very conscious of it because that is quite a bit of sweat and plus I'm now also working out and so I've had to start really paying attention to that, and you're right, it's amazing. Like I've had mornings where I get kind of like a headache and I just feel tired and then as soon as I get my sodium levels up, I feel so much better without even needing caffeine as much.

Robb: Let me ask you this and I want to do it in a non...I try to do it in a non-leading way, do you ever notice different times when LMNT tastes more or less salty?

Katie: Yeah, actually. That's interesting. I'm drinking it right now. I'm drinking the orange one and it tastes less salty than it will sometimes after like a really intense sauna or exercise.

Robb: So it tastes more salty for you when you sauna or exercise?

Katie: Mm-hmm. Typically.

Robb: Interesting, because we've had people report the opposite and so I was trying to figure out if this was a way of dialing in dose where like if your body really needed sodium, maybe you wouldn't taste it. And then as you started getting enough then you wouldn't taste it but I guess you could argue that on the flip side of that too, that this was... Sodium is interesting. It's the only kind of micro nutrient that we have a specific flavor for. Like, we don't really taste magnesium or potassium or calcium or anything. Like they do have a taste but like one chunk of a whole flavor repertoire is salty. And so I was just curious if there were times where the same concentration, the same mix, like it might feel or taste particularly salty one moment but then, you know, virtually not salty the next.

Katie: That is really fascinating. Yeah, I'd be curious to know as you guys hear from more people if that ends up being the case. What about kids and sodium intake? Because I know you have two daughters and I have kids as well. I know that LMNT can be a great alternative for sports drinks. And I definitely don't advocate giving children traditional sports drinks that have all kinds of dyes and sugars in them. But are there any guidelines that we know of for how much sodium kids need, especially if they're active?

Robb: Generally, you just kind of adjust based off of size. And so, like Zoey is 7 years old and what we'll do is we'll take one LMNT, which is 1000 milligrams of sodium, 200 milligrams potassium, 60 milligrams of magnesium, put that in about 2 liters, and then split it between the two of them. And then they will sip on that throughout the course of a really active day. Like they've been going to Brazilian Jiu-Jitsu, and they get after it like they're hot and sweaty, and largely just kind of let them self-regulate on that because I will ask them, "Hey, do you want water or do you want electrolytes?" And sometimes they are like, "Dad, I really want water," and then other times are like, "Man, I really want electrolytes?" I just kind of give them the option there and then let them kind of self-regulate in that way. But we also mix things in a fairly hypotonic solution. It's not super concentrated.

Katie: Got it. Yeah. And I think that's...especially with kids, they seem to be very intuitive for the most part about what they need, especially when we're not talking about drinks that have added sugars that are going to...the body's going to respond to those in a different way. I feel like that could kind of skew their response to the sodium if they're also getting sugar and things that are in a lot of the popular sports drinks. But we kind of do the same with our kids and we don't have...ours don't do jujitsu anymore but they're doing pole vaulting. So same thing, they're very active and very sweaty and they definitely tell me when they crave it, which I thought was interesting. So

So we've talked about low carb and keto diets in relation to sodium intake. But this is an area that I know you've also done a lot of research. And so I'd love to talk a little bit about that in general as well because these are obviously very popular right now. And there is a little bit of controversy, especially for women if women should be on a low carb or keto diet or not. So I'd love to start there with your take on is the keto or low carb diet safe for women and do we need to adapt it in any way?

Robb: Yeah, it's interesting and it's a really controversial topic and I've kind of modified my position over time in that I think there are fewer and fewer people for whom a low carb diet isn't probably a good idea either transiently through the year or as we get older. And the challenges that usually emerge for women in particular with low carb or ketogenic diet is there's kind of a camp in the ketogenic community that's almost protein phobic. They're so focused on producing ketones. They get very, very fat centric, and there's a concept called the protein leverage hypothesis that puts this idea forward that if we don't eat enough protein, we will continue to overeat other calories, and it doesn't matter if you're low carb or you're low fat.

And it makes a lot of sense and it kind of explains a lot of what we see where some folks do pretty high protein and low fat, high carb, they do pretty well. Folks that do pretty high protein, low carb, higher fat, they do pretty well. But this middle ground of like low protein and lots of fat and lots of carbs seems to be an absolute

disaster. And so, one of the things that we see happen with women is that they will tend to under-eat too much, even though maybe they're trying to lean out. And then they're also really under-eating protein. And this can cause stress on the body, it will cause people to overeat. So trying to get that little bit of caloric deficit becomes really, really difficult.

And then the other piece to this is that most of what people ascribe to like adrenal issues, thyroid issues around low carb diets, you could also make the case that inadequate sodium causes the same problems. And so, is it a low carb problem or is it a lack of electrolytes while being low carb that's really the problem? And one of the things that I kind of default back to is looking at the Ketogains community. These guys have like 150,000, 160,000-person Facebook group, really robust community, but it's about 70% women, and their demographic is like 35 to 55.

And these gals are just crushing it. Like there's not loads of people with their hair falling out and they have this problem, and that problem, but they're very good at making sure that protein is on point and that electrolytes are on point. So I know it's very anecdotal to point to the Ketogains community and say, "Well, here is people succeeding, you know, this is validation," but I think it kind of speaks to the potential mechanisms of where the Ketogains folks do a really good job getting things right and then where people can get it wrong and how that could negatively impact female hormones in particular.

Katie: That makes sense. And speaking from my own experience, that is something I noticed as well, those were important factors to get dialed in. And I wouldn't say I'm by any means keto all of the time. I cycle everything. So I do eat carbs but just not every day. I'm a big fan of not doing anything every single day. But in general, I would say I probably still eat much lower carb than most people, especially anyone on the standard American diet. But I've lost a substantial amount of weight in the last year, I think it's actually close to 80 pounds now. And for me big factors in that where I really had to ramp up protein and be conscious of it. In fact, I was consuming for a long time more protein than I thought I needed.

Like I had to really make an effort to get enough calories and get enough protein in and also the sodium was a big key for me, especially because I was using the sauna quite a bit during the weight loss. I wasn't exercising during the weight loss, but now I am. And so I found it interesting that with focusing on protein and sodium and being really cognizant of those when I went back to working out, I was able to, for instance, deadlift my bodyweight easily on my first try having not worked out for a year. I think probably protein played a big role in that, obviously, because I was hopefully not losing too much muscle as I was losing the fat.

This episode is sponsored by UpSpring Baby, a company making innovative science-backed products for moms and babies. And I want to tell you about one of their products in particular because even though I'm not even currently pregnant or have tiny babies, it's been really helpful to me. I really like their Stomach Settle nausea relief drops, which are great for any kind of stomach upset from motion sickness, which I get and a couple of my daughters get, to morning sickness, which I thankfully do not have right now because I'm not pregnant, but any kind of bloating or digestive upset at all. I love to keep this on hand and my kids like them too. They help relieve nausea, motion sickness, gas, bloating, and any kind of digestive upset. In fact, I keep these in my car,

in my kind of like emergency kit in each of my cars, and also in my purse just to have on hand because tummy aches can be a thing when out and on-the-go. Their lemon-ginger-honey flavored Stomach Settle drops contain not just one but three natural remedies for digestive upset, ginger, spearmint, and lemon. Plus, they contain vitamin B6 to help relieve occasional nausea, motion sickness, gas and bloating. Their ingredients are micronized, meaning that they provide faster-acting relief, and they have been really helpful, like I said, especially for motion sickness. They're individually wrapped. They're great for on-the-go, and I was able to negotiate a discount just for you. You can check this out at upspringbaby.com/pages/wellnessmama, and the code `wellness10` saves you 10%.

This podcast is sponsored by BLUblox. That's B-L-U-B-L-O-X, which is an advanced light-filtering eyewear company. You've probably seen pictures of me on social media wearing orange glasses of various types at night. And here's why. In nature, we aren't exposed to certain types of light after dark, specifically, blue light, because that type of light signals the body that it's daytime. That in turn suppresses melatonin and can interfere with sleep. This is the reason that a really dramatic study found that camping for seven days straight with no artificial light at all could actually completely reset and heal circadian rhythm and help a lot of light-related problems, like seasonal affective disorder. This is also the reason that I wear orange glasses after dark to block these types of light and protect my sleep, which I am adamant about protecting. I also wear certain types of yellow glasses and anti-fatigue glasses during the day if I want a computer to reduce eye fatigue. BLUblox has orange glasses and yellow glasses. Their orange glasses for nighttime wear are designed to block 100% of the wavelengths between 400 nanometers and 550 nanometers, which are the ones that are studied to interfere with sleep and melatonin production, and circadian rhythm. My kids also wear these kinds of glasses at night. And I noticed a difference in their sleep as well, which is a huge win for a mom. This is especially important when we're watching a family movie at night or looking at any kind of screen as the artificial light, there is a source of blue light and can interfere with sleep. You can learn more, they have a ton of educational content and check out all of their innovative protective glasses by going to blublox.com/wellnessmama and using the code `wellnessmama` to save 15%.

But you're right. I think a lot of women are really afraid of protein. Are there any guidelines you would give of a good target of how much protein to aim for?

Robb: Yeah, so the kind of benchmarks are literally never below 0.8 grams of protein per pound of lean body mass. Like unless you're doing something for like a specific therapeutic scenario like cancer treatment or something like that, like outside of some really specific guidelines like that, like a 0.8 grams of protein per pound of lean body mass, you never want to go below that. And we tend to see people do better at about a gram to 1.2 grams of protein per pound of lean body mass. And if calculating that ends up being kind of onerous. A pretty simple way to go is to just try to eat a gram of protein per pound of body weight. And most people will fail in that. But in the attempt of doing it, what they will generally end up doing is eating fewer calories overall because that protein is so satiating, they will tend to reduce their overall caloric intake.

Katie: Got it. Okay, that makes sense. And, you talk about this and I know we did a podcast episode much more about it, I'll link to in the show notes about "Wired to Eat". But you talk about this in your book quite a bit as well. And I just thought that was a really interesting point because I now even during weight loss, ate so

much more food than I probably was before, that it was not just about reducing calories at all. It was about making sure that I was really cognizant of my macros and where the calories were coming from. But can you go a little bit deeper on that and kind of explain that concept that you go deep on in “Wired to Eat”?

Robb: Yeah, I mean, “Wired to Eat” was really an unpacking of kind of two things. One is the neuroregulation of appetite and how it's our brain that is really driving the boat on when we are hungry and when we are not. And it's not just a matter of sticking something in our belly, and that different foods affect folks differently. And this is particularly true on the carbohydrate side where some people like my wife, Nikki, she has phenomenal carb tolerance. What's interesting is, if Nikki and I sit down and eat, say, like a cup of cooked white rice, her blood sugar will top off about 110 to 115. That's as high as it'll get. And at two hours, it's back down to its fasting baseline.

My blood sugar will get up near diabetic range, it's like 190, 200. I will have vision problems, I feel terrible. And then when I crash after that, I'm just ravenously hungry. And so what's interesting and something that is oftentimes just about universally missed is that the folks who do well on high carb diets have blood glucose responses that look like the rest of us on low carb diets. It's not that they are magically immune to like really huge blood sugar highs and lows, it's that their body is so efficient at dealing with things they never experience those highs and lows.

And Nikki is interesting in that she will go in and out of ketosis. She doesn't feel better or worse, one way or the other, whether she's eating carbs or not, whereas I notice a really, really significant difference being lower carb. And so what that tells me is Nikki is likely much more metabolically flexible than I am. There's things that I can do like a little bit of fasting, lifting weights, and carb cycling to try to improve that but there's just kind of a reality that either genetically or epigenetically Nikki is far, far better than I am at dealing with carbs. And so those are kind of the two interwoven features that we really explore in Wired to Eat and use to help inform choices.

Like what are the foods that we're choosing that for us cause the best satiety, the best ability to eat at the level that is necessary for us? And then, you know, what's our individual response to foods both with regards to glycemic load and then also potentially immunogenic foods? I don't do well with wheat or gluten at all. It crushes me pretty badly. And some people don't do well with Nightshade. Some people don't do well with eggs. And so we do a little exploration both on the glycemic response, the blood sugar response, but then also kind of the immunogenic response, the potential kind of food intolerances and allergenic type responses that folks have to various foods.

Katie: Yeah, I think there definitely must be a genetic component to that. So you mentioned a few things you can do that hopefully help improve your glycemic response. So I hear from a number of people who eat what would be actually a relatively low carb diet and still will have a higher than they'd like fasting glucose in the morning. Are those things potentially helpful for people like that?

Robb: So in that scenario, there's this thing called the dawn phenomenon, which in the morning, we have elevated cortisol levels and cortisol will tend to elevate blood glucose levels. What's important to look at in that scenario is the hemoglobin A1C. A1C is a measure of the average blood glucose over time, not just that singular snapshot. And most of the time, what we find is that the folks who have that, they're eating low carb, they have what appears to be elevated blood glucose in the morning, but that's the only time of the day that their blood glucose is elevated if their A1C is low. If both fasting blood glucose is elevated and A1C is elevated, then we have another problem and not infrequently it may be that they don't have electrolytes on point, which can be a stress that produces cortisol, that elevates blood glucose levels.

Could also be an immunogenic food. Like if they're eating low carb cheese and dairy are really delicious, really handy on low carb, but they are also really common allergens and folks can experience elevated blood glucose when they get kind of an immune response to foods. But the thing to do is to check that A1C and you can go to your doctor, or you could get that from like a local pharmacy to check your A1C. It's just a finger prick test in that case. And if the A1C looks good, not really something to worry about. If the A1C is on the higher side, which anything above 5 starts getting me a little bit concerned. I'd like to see it at 5 or below on the A1C, then we can look at sodium, we could look at are you under-eating? Do we have an immunogenic food? Is there a sleep disturbance going on that is causing this other problem?

Katie: Okay, got it. That makes sense. And I want to loop back just to the sodium thing and talk a little bit more about LMNT where people can find it. Of course, the links will be in the show notes. But it's made a big difference for me. And it's so much easier than, like you said, trying to mix your own or carry the ingredients for that. And my kids like the taste of the flavored ones as well, which is another plus. But just for anyone who's listening, let us know where we can find it. And of course, the links will be in the show notes at wellnessmama.fm as well.

Robb: Yeah, yeah. DrinkLMNT.com is where the main site is and we have a great science and resource section there. So like if you want to dig into some of the science and research that kind of supports what we're suggesting, then we have some great resources there. And then I think all of the social media stuff. It's, you know, @DrinkLMNT on Twitter and Instagram and Facebook and all that stuff.

Katie: Got it. Awesome. Well, Robb, this is really fun round two. We might have to do a round three one day. It's always such a pleasure to talk to you. But thanks for all the work that you're doing in this area and for sharing today.

Robb: Same Katie. I look forward to seeing you in real life. Hopefully we both dodge the coronavirus and we can see each other soon.

Katie: Yes, absolutely. And please tell your family hi for me.

Robb: Will do. Take care.

Katie: Thank you. And thanks to all of you for listening as always and for sharing one of your most valuable assets, your time with us today. We're both so grateful that you did and I hope that you will join me again on the next episode of "The Wellness Mama Podcast."

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