

Nicki: It is time to make your health an act of rebellion. We're tackling personalized nutrition, metabolic flexibility, resilient aging, and answering your diet and lifestyle questions.

This is the only show with the bold aim to help one million people liberate themselves from the sick care system.

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Warning, when Robb gets passionate, he's been known to use the occasional expletive. If foul language is not your thing, if it gets your britches in a bunch, well there's always Disney+.

Robb: Howdy, folks.

Nicki: Welcome back to another episode of The Healthy Rebellion Radio.

Robb: I haven't seen you all year.

Nicki: That's a dad joke. It is episode 137, excuse me, the first of 2023. I forgot to wish everybody a Happy New Year last episode I think. Just sort of-

Robb: We were a bit rushed.

Nicki: ... I didn't think about it. Yeah, hope everybody had a great start to the new year. New Year's Eve is our anniversary, so we went out with some friends to a party at a little place in downtown Kalispell and there was some live jazz music and ...

Robb: They had a 1920s theme like a speakeasy?

Nicki: Yeah, like a speakeasy. Anyway, it was very fun, but we were both like, it's like eight o'clock and pitch black outside and we're like, "Oh my God, are we really going out?"

Robb: But this place was-

Nicki: We're so old and we don't ever-

Robb: -a bit like Yankee stadium though, so that kept us awake.

Nicki: I mean we go to bed pretty early. We're like crusty old people at this point when it comes to our bedtime, especially in the wintertime here because it's so dark in the winter early and then in the summer it's light until 10:30, 11:00 some nights. So summertime, we typically stay up-

Robb: A bit later.

Nicki: ... A bit later. So anyway, we rallied. We did it. We had fun. We lived to tell to tale.

Robb: We did.

Nicki: We did. Let's see here. Any other stuff upfront, Hubs?

Robb: Did you want me to mention the HRV stuff or do you want to save that for a different moment?

Nicki: I ...

Robb: Sodium HRV.

Nicki: Oh, okay. If you wanted to, actually, what I'd like you to talk about is what you mentioned to me in the car about how good you're feeling.

Robb: Oh, oh, yeah. Yeah.

Nicki: So Rob, as you all probably know, because he has mentioned it multiple times before, definitely suffers from seasonal affective disorder. So when it's gray and cloudy, he definitely is more on the kind of melancholy side. And we get a fair amount of gray and cloudy here in Kalispell.

Robb: Okay. We get 120 days of sun in Kalispell. So the flip side is kind of pronounced and when we lived in Reno, Reno was something like 310 days of sun. And then the non "Sunny" days are still mainly sunny. So it's a dramatic change here. We get an inversion layer here in the Kalispell area, the Flathead Valley, and it's kind of gnarly, I have to admit. And I definitely feel better on sunny days. There's a little bit more of a spring in my step, right?

Nicki: But he definitely, and he's been doing his spurty regularly this year.

Robb: Which I did last year pretty consistently, which it helped. But the big difference this around is I've been super consistent four plus days a week, get up and then first thing in the morning doing some zone two cardio. And I got to say that's been a huge boon for my mental health.

Nicki: And you've mentioned it a couple of times. Even yesterday we were driving into town and he's like, "Gosh," because it was a gray day. And he was like, "I cannot believe that I feel as good as I do right now given this the number of sequential days of gray that we've had." Normally he would be in kind of a dark spot. So I definitely wanted just to-

Robb: Both literally and psychically. Yes.

Nicki: ... Anyway, I wanted to share that because I know a lot of people struggle with seasonal affective disorder and clearly getting lots of sun is amazing and we all love it and strive for that. But if you live in a climate or an area where that's just not feasible, maybe some consistent zone two cardio could be helpful.

Robb: Well, and I really think that doing it first thing in the morning is the key for me. I haven't done an experiment where I do it later in the day. I've done jui-jitsu before where we do stuff later in the day. I mean, one thing is that I'm doing something pretty active literally every day.

I'm either, on the days that I do jui-jitsu, I don't do cardio on some cardio days. You and I also lift on some jui-jitsu days. You and I also lift, we usually lift about three days a week, two to three days a week. If we're lucky, we're able to cobble that together. So I am definitely more consistent in the kind of aerobic-based activity, but I do think that it's this getting it in first thing in the morning. But I'm not sure, because I know that can be a

challenge. We're really lucky that our schedule affords that. The homeschooling kind of makes that possible. I get up early and then get after it. Yeah.

Nicki: But I would love to know if any of you try it or have experienced something similar, we'd definitely like to hear-

Robb: Absolutely.

Nicki: ... If Rob's experience is corroborated, is that the right word?

Robb: Corroborated.

Nicki: Corroborated. All right. Let's see here. Oh, our news topic hubs.

Robb: So nothing super surprising. The headline is the Corporate Capture of Nutrition Profession in the USA, the case of the Academy of Nutrition and Dietetics. And this thing is actually from Cambridge-

Nicki: .Org.

Robb: ... University. It basically, this thing ends up in PubMed. This was a research piece talking about the corporate capture within nutrition and dietetics. And I think we've all kind of known the surface layer of this, that the nutrition and dietetics scene receives an ungodly amount of money. They are the primary funders of the bulk of the research that these folks underwrite and explore is provided by big food. What I didn't realize though is that the Academy of Nutrition and Dietetics and other related entities have massive equity holdings in these companies. They have stocks in Nestle and big food and all this type of stuff and shit, I mean-

Nicki: When you had mentioned it to me because we've heard, I mean Diana Rogers, she's an RD. She goes, she's gone to all of the registered dietician convention type things and she would say, "Oh my gosh, the snack table here is just appalling. It's all these packaged Chips Ahoy, all this-

Robb: There's no real food there.

Nicki: ... It's like a snack aisle from the grocery store laid out on a table. And these are all registered dieticians right there. It's not what you would imagine people who work with others about their health, not what you imagine they would have for the fare at one of these gigs. And so you know that that's going on. But when you'd said that they have stock holdings in these companies, it's just the conflict of interest is so incredibly glaring. Our trust is being broken on a lot of levels with a lot of our agencies and institutions and this is just one more, I guess.

Robb: Yeah, I mean I posted a little screen capture of this on social media and I had in quotations, "What are your declarations of conflict of interest?" And the answer was, "All of them," all of the conflicts of interest. And again, this circles back around a little bit to, I think we've talked about it. Nikki and I talk a lot throughout the day because we do nothing else. We homeschool and we're with each other together all the time, but we've been talking about the network state and some of the implications around how do we change all this stuff? How do we change the FDA? How do we change the government? And there's some folks like Nina Teicholz and Gary Tobs and some folks that, God bless them, they do good work trying to change the FDA food guidelines and whatnot. I see that completely as pissing into the wind though.

The capture there is so complete that it doesn't matter if you win the scientific argument, the economic imperatives, the way that the incentives have been set up are never going to allow the light of day to be shown on that type of stuff. And we literally have to circumvent the whole system and kind of start it anew. And in a lot of ways, this is what CrossFit did. It didn't go to the NSCA, ACSM, hat in hand and be like, "Gee whiz, can we be part of the club?" For right or wrong, Greg Glassman was like, "I don't want to associate with any of those assholes." And he was one of the, he and key people within CrossFit were some of the only folks that exposed some of the really egregious conflicts of interest and fraud that has gone on there, not the least of which are studies looking at both the paleo diet and CrossFit that were funded by nefarious outlets and ended up being complete hatchet job and CrossFit ended up winning trial cases against these folks.

And then ironically, the new ownership has taken all of that shit down. So the one kind of ray of hope that there was, because CrossFit was big enough and well funded enough and had enough cache to a degree, that there could have been the skinny end of the wedge opening the door, which is further why I'm so annoyed at Greg that he couldn't keep his shit together enough to be able to just maintain control of that thing and did what he did and lost what he lost and all the rest of that stuff.

So we are at a spot where we have to figure out what we need to do. And we've been talking about this freedom to transact and NFTs and crypto and whatnot, and it's a brave new world, but it might be the thing that we need to really look at and invest in as a way to circumvent this whole process.

Nicki: More to come on that.

Robb: Yes.

Nicki: Yes. Okay. This Healthy Rebellion radio episode and all episodes of the Healthy Rebellion Radio are sponsored by our salty AF electrolyte company LMNT. Who says electrolytes have to be consumed cold? Stay cozy and hydrated with LMNT in your mug. And if you like cozy winter beverages but don't like the crap and the sugar that accompanies them, you'll want to give the LMNT Chocolate Medley a try. Each 30 count box comes with 10 chocolate caramel salt, 10 chocolate mint, and 10 chocolate salt. You can add it to coffee or just hot water, maybe a splash of heavy cream if that's your thing, and bang, it's there. Cozy yumminess in a mug. LMNT Chocolate Medley is here for a limited time only. So get it while it's hot.

And Rob is making crude hand gestures while I'm saying this so he can, I'm giving him the finger. Remember with the LMNT value bundle, you buy three boxes and get the fourth box free and you can mix and match and choose your favorite flavors. You can grab yours at drinklmnt.com/robb. That's drinklmnt.com/robb.

Robb: Nicki is Italian and speaks with her hands.

Nicki: I gesticulate and you were making fun of my gesticulations and distracting me.

Robb: You're a public gesticulator.

Nicki: I am.

Robb: There's probably rules against it.

Nicki: I don't maybe in California all the new rules are coming to California.

Robb: Oh boy.

Nicki: Oh boy. Okay. We won't go there. All right. We've got three questions for you all today. This first one is from Ken on fermentation.

Ken says, "I bought your book back in 2010 and it was my first dive into evolutionary medicine, et cetera. I've been listening to your podcast since. I'm 44 years old, 203 pounds as of this morning and still competing in the Scottish Highland games and playing rugby. In 2011, I was tested for auto nuclear antibodies as and was on the cutoff. The thought then was celiac disease, but there was never a colonoscopy follow up. As the doctor never called me from the referral and eating paleo made me feel better, so I just ran with it.

A couple of years later, my TSH was low and instead of taking Synthroid, I did a bout of AIP Autoimmune Protocol and didn't notice anything then, but my TSH went up. A few years later we found a baker's cyst in my knee, did AIP again and found that alcohol was a trigger. Doing different things to address my gut health, which was always an issue and was always an issue for my dad who had Crohn's disease. I found that not only was alcohol a trigger, so was anything fermented, including kombucha, kimchi, sauerkraut, and soft cheeses. Everything after about three days of daily consumption would make me sick."

"So I guess my first question is, have you ever heard of anything like that before? In January, I'm scheduled to have a hemorrhoidectomy and was told by the doctor, as usual, to increase fiber. Since I still have issues with a loose stool, I figured I'd give it a shot. I also bought Dr. Kate Shanahan's book, Deep Nutrition, and started to implement the four pillars and a cilium husk fiber."

"To my surprise, I started getting sick again the way I would to prolonged exposure to fermentation. With that, I ask, is the fermentation of fiber in my digestive tract making me sick. Another, have you ever heard of that? Right now I only see carnivore as an option. Is there a possible door I can check for a way to fix my digestive tract enough that any type of fiber doesn't affect me? And how far does this go? Am I destined to only drink water? Is there any fiber in coffee? Do I need to switch my LMNT order to only raw unflavored? I'm willing to turn over stones and look, but I just don't see anymore."

Robb: Man, we could do, and probably should do a whole podcast just on this. And what Ken? Ken, these are great questions and it sounds like you and I are kind of cast from the same mold here. So the first question, have I heard of anything like this? Fermented items giving people problems? Yes. First just personal experience and it's the God damndest thing. I used to make sauerkraut all the time and the kids liked it, I liked it, but it's this weird deal. Even life culture, kimchi and some things like that. What I find is I can do it intermittently and I feel like if I get a dose, my digestion seems better that day, which then causes me to want to do it a second day and a third day or a second meal and a third meal. And it's the sequential exposure that ends up giving me problems.

And it took me forever to figure this out because it's another one of these things where it's like live culture foods are good for you and everybody said so and then you get that one exposure and you're like, "Oh, I actually think I feel better." For me it's always been a stool being on the loose side and when it is loose, I feel worse. I would feel okay until I went poo. And then I would feel bad after that. And I don't know if it's an electrolyte

deal because of the loose stools or exactly what was going on and rich in anecdote, but many, many people have reported similar things. I feel pretty good. And people would report things like I need to go poo twice in the morning and the first time it's formed and I feel fine. And then the loose one is the second one and then I feel terrible. And so I've heard lots of stuff like that.

I don't know what's going on. I do remember Diana Rogers and I did a speaking gig, I think it was Polyface Farms and they basically had a really great kombucha truck there and we basically had access to an open tap of the stuff and I drank, I don't know how many servings of this kombucha and I was sick for three months afterwards and it took-

Nicki: I remember that, yeah.

Robb: ... Forever to figure this out. And I ended up getting a gut screening. Did I have a parasite? Did I, we were eating food outside. So it was possible that a fly went from a barnyard animal to my food and maybe I got some weird parasite. But I had tried a little bit of kombucha maybe two years later and it made me sick again. But exactly the same, only orders of magnitude less because I only add one, not multiple. I'm like fuck, that's what it was. So these fermented items are really problematic for me. We hear about it in the Rebellion all the time. There's a whole cross-section of people in there that they're like, "I love fermented food." There are other people like Tara, she does a little bit of fermented food, but I don't know if it's an everyday thing. I know it's in the mix.

Nicki: I don't think it is. And I don't know how much of it she actually does. I know vegetables on the whole really, really bother her.

Robb: I know that. But every once in a while you'll see her, she'll make a soup and it's got some cabbage in it and she cooks it super well and all that stuff. And I know that she's mentioned a little bit of fermented food here and there.

The long and short of that, Ken is, I think you just have to run with what the clinical results are. And for some people, under some circumstances, like fermented food is just not a good jam. And is that indicative of problems? It could be. This is something I've been noodling on a lot and we'll kind of get down to this stuff as we go forward here. But I've been tested multiple times for intestinal permeability. I don't have it, I don't have a leaky gut, but I've got something going on. The other something, Ken had the other questions about, just fiber in general and whatnot.

And so we just found this study, a high fiber diet synergized with *Prevotella corporis* and exacerbates rheumatoid arthritis. This is a study in a mouse model scenario, but the higher fiber diet caused the specific bacteria to create these different organic acids. Some of them, these short chain saturated fats, some of them just some other organic acids. And these things in certain individuals create a pro-inflammatory profile. It gets macrophages freaked out.

When I posted this on social media, people asked about could this be a histamine mast cell thing? It's not that it is some other elements of the immune system and it's kind of detailed in the paper. One guy popped in and said, "This is a mouse model that this doesn't apply to humans." And I was like, "Listen asshole, this is kind of where this stuff starts," is a hypothesis paper then animal model. And then we go to human trials. And also just at an anecdotal level, we've got a ton of people that clearly don't do well with fiber. And I don't know why.

I do think that generally humans, so I'm of two minds. On the one hand I think that humans should be close to a garbage compactor in that you should be able to throw just about anything down the human gut and inhabit work if we're healthy and robust and resilient and all that type of stuff. And some days I'm kind of in that mode. And then I remember it was a historical account of different explorers and it was Ponce de Leon and it was part of the folks that did the Lewis and Clark expedition. And it was a bunch of different explorers that went from one place geographically and ended up in other places geographically.

And the point of the account wasn't specifically about their digestive woes, but all of them reported significant digestive issues while traveling and while exploring and whatnot. I remember some of the Lewis and Clark expedition when they made it to the Pacific Northwest and made contact with some of the Native American tribes there. These folks lived a very, very good life. They basically were salmon farmers, technically they farmed salmon, I mean they harvest them and everything, but economically you could make the case that it was more a agriculture type case than hunting and gathering type type deal. And they had a lot of access to starchy tubers. And the Europeans in this group, part of the Lewis and Clark group, talked about the flatulence that they got from these tubers that was just unbearable, made them crazy. And these guys, although were grateful for eating salmon, wanted meat so badly that they actually bought some dogs from the Native American tribe to eat the dogs because it was red meat versus fish.

So this is another thing where I'm like, maybe humans aren't that digestively robust. And even though we think about hunter gatherers and we think about a changing life ecology that they experience depending on where they are and what time of year it is and everything, maybe they're just not as much latitude there as what we might fantasize about. And maybe we're kind of ideally a little more constrained in the variety and the magnitude of the types of things like the changes that we get exposed to. I'm not totally sure, I don't know and I could argue both sides of this.

But the point that I made, and when I posted this thing about the high fiber diet in this model worsening rheumatoid arthritis, was simply that from a clinical perspective, some people are, and do fantastically on a high fiber diet that is crystal clear, and it's becoming pretty obvious also that other people don't do well on a high fiber diet.

And the only thing that matters, literally, the only thing that matters in that whole discussion is the clinical outcomes.

Nicki: N equals one?

Robb: N equals one, and he had done some ANA testing before and he was like right on the edge, this anti-nuclear antibody, which is looking at rheumatoid arthritis type factors and then that celiac inflammatory profile. If you do something clinically that ameliorates that, that's probably a good thing and people will do all kinds of hand ringing about, well if it's carnivore or you end up in a nutrient deficiency and whatnot. And I think that those are valid questions. I think that there's usually solutions that that can be applied to that, whether it's organ meats or maybe even some sort of low dose supplement, or maybe you find exactly the right plant material at the right dosing. Maybe you do some sort of fermented vegetables once a week or once every two weeks instead of daily or something like that.

But when people are in an autoimmune flare or if they have ulcerative colitis or over leaky gut, God damn, there is nothing that you could do that would improve your health more than addressing that. And all the theory around whether or not fiber is good or

bad is just bullshit and goes out the window. And it seems like, even though it's funny, I feel so much kinship in many ways with the carnivore scene, but so many of the people in that scene make me kind of crazy because they're as over the top about this stuff as the raw vegans are. It's like, my God, you guys are embarrassing and we need to take each person, each situation, one off, one at a time and look at what their situation is. And I also posted a follow-up about this stuff when people pushed back on any of this.

And it was funny because I almost hesitated posting anything about this because I knew that people were going to take the wrong context. They were going to focus on the thing that I was actually posting and not the analogy. And the thing I posted about was that the variability in caffeine detoxification within humans, and some people are fast metabolize r's and the half-life of caffeine in their system is four hours. If you consume a hundred milligrams of caffeine, which would be a stout cup of coffee, four hours later they've only got 50 milligrams in their system and then four hours later they've got 25 and on and on.

Some people are slow metabolize r's and it's 36 hours for the half-life, but the human population average is eight hours. And so if somebody says, "Is coffee or tea a good or bad thing for me," it totally fucking matters as to whether or not you are a fast metabolizer or a slow metabolizer.

And if you take the population average and then apply it to people who are slow metabolize r's, you're going to fuck them up. They're going to be broken. And this is where a lot of the evidence based people make me crazy because they'll go back to the randomized control trial, which by inference is an aggregation of data. And there have been some really interesting papers that have been published, kind of high brow pieces, saying, basically making the suggestion that these may be worthless at this point. They aren't telling us anything, whether it's, well, and this is a drug trial of sorts, but Vioxx and different things like that. There are some people that were horribly genetically poorly matched for Vioxx being a good thing for them. It was a type of non-steroidal anti-inflammatory, and there are other people that motored along pretty well with it and offered phenomenal treatment efficacy and seemed to be comparatively safe and it just depended on the person.

And we keep trying to aggregate data and make a one size fits all approach to all of this stuff. And this is some of the danger of the science has settled and the follow science and everything people don't know have any God damn idea what they're talking about with this. And the back to the caffeine deal, a bunch of people started asking questions about caffeine metabolism, which wasn't my point in that thing and part of the reason why I didn't want to post it. But within the evidence-based crowd, usually if you talk about some sort of a kinetic study like the caffeine clearance, they're like, "Yeah, okay, I get this." But then it's like, "Okay, well how many situations with nutrition and metabolism do we have similar situations where there's a four, wait, what is it? A 9x difference between four hours and 36 hours?"

Nicki: Wow. Yep, fuck.

Robb: And so is there a 9x difference in the ability for somebody to benefit or be harmed by fiber or-

Nicki: Anything?

Robb: Yeah. And this is where I think we take these big picture concepts, but there's almost always AB testing on this fiber. Good, okay, well let's pressure test that. If you eat a lot

of fiber, are you bloated? Are you uncomfortable? Do you feel terrible? Do you see things like rheumatoid factors and whatnot increase? Well then maybe either that type of fiber, the frequency of the fiber, all these other considerations may be a piece to that. And Chris Kresser ran onto this, so he's much smarter than I am, but he made the case that a carnivore diet is basically a type of fast and it's a fast that you're actually getting calories and you're actually getting a significant amount of nutrients.

But almost all of the digestion, virtually all of the digestion happens immediately in the small intestine. And there's effectively little to nothing that is left for the rest of the digestive system to work at. And some people will say that's bad because of the mucosal layer and different things. And I think that there are answers to that. It's not always a problem. And even the meat plus fruit perspective on carnivore is similar in that fruit really doesn't have that much fiber generally, depending on the type of fruit. And usually people end up magically migrating towards lower fiber fruit as the preferred items anyway when they're in these scenarios.

So I don't know, is there anything else I can beat that to death? It's a big important topic and there's a lot of nuance here and there's a lot of shit of to be learned from this.

And it's another one of these examples where there were a few crazy folks, I'll think of Amber O'Hern and some people like that that have been carnivore effectively since like 2009. And within the paleo sphere, I remember Amber was kind of like this interesting oddity. It's like, "Oh, here's this gal that eats no fiber and no plant material." And it's like, "Well that's kind of quaint." And then fast forward 12 years and it's like, well actually a lot of people need to be there. Some of the questions, can you recover it? Can you come back? Some people do, some people don't.

Denise, in our Healthy Rebellion, she had some poor metabolic responses to carbohydrates. She did six months of carnivore and she leaned out, she did some other lifestyle changes and then she reintroduced some carbohydrates and she did great with them. So I think in some circumstances you can recover both metabolic and gut health, but in some circumstances, you can't. I still keep kicking the tires on all this stuff, trying to figure out how I can have more latitude in my diet versus less and it doesn't always work.

Nicki: So it really comes down to this N equals one. Maybe he goes carnivore for a period of time, maybe he reintroduces some things, but instead of doing it like three days in a row, which would normally make you sick, maybe you have one serving and then wait a week and just kind of play with your tolerance and you're a giant experiment of one.

Robb: Literally. Yeah. And what's interesting is when I reflect on my exposure to fermented foods, maybe one serving a week is good for me, maybe it does help my digestion and maybe three servings a week is bad for me. If for whatever reason it just off pisses off my digestive system.

The main thought around fermented foods is that it helps to tune the gut response to the bacteria that are in those fermented foods. It's not generally that those fermented foods are populating the gut, but it can provide substrate for some endogenous bacteria to grow on and then it tunes the immune response. It is generally thought to be a favorable way, but again, maybe it's a dose response curve. Maybe one exposure per week is good and maybe three exposures in a day is bad or three exposures in a week is bad.

Nicki: Okay, all righty, Ken, please keep us posted. Okay, our next question is from John on muscle loss. "Hey gang, what are the major contributors for muscle loss as we age? I am a diabetic 61 years old and have lost significant muscle and continue to do so. The doctors don't have any answers other than that I am older and diabetic. So how do you stop or slow down and even better reverse this process. I love all your stuff and don't want to leave out the wife here. We know she is great too. A long time listener John."

Robb: She is great. John. There are several factors that go into this or just legitimately seems to be some degree of age related muscle mass loss. We tend to lose the large motor units, the power producing motor units as we age first. And it's worth mentioning we lose both the ability to produce power and also the mitochondrial density of muscles. So we lose the ability to produce energy over a sustained period of time.

Physical training forestalls, this stuff. So doing some sort of a mixed modal strength training program, something like a Westside barbell conjugate method where you've got a body building day, a max effort day, and then a speed day is, I think, one of the most ideal ways to do this. We do some training with Sarah and Grayson of Basis NY and part of their programming, virtually every session you're getting a little max effort, a little speed work, a little hypertrophy work or they-

Nicki: And lots of joint rep.

Robb: ... aside from the joint prep, but the actual stimulation of the muscle bellies themselves. So that that's a thing. We tend to lose anabolic signaling. So the ability for the muscles themselves to sense an anabolic stimulus tends to decrease. Our anabolic hormones tend to decrease. Gosh, what else, myostatin, which is the genetic inhibition of muscle growth, tends to get more pronounced with age. Just as an aside, some things like Sildenafil, like Viagra seems to have a mild effect on myostatin inhibition. It's not going to turn you into a myostatin knockout like giant monster, but it does seem to have some benefit there, interestingly. So there may be some case as an anti-aging protocol to use a really low dose Sildenafil in that scenario.

Adequate anabolic signaling, again, you've got both the strength training as a signal and then also protein consumption as a signal. So adequate protein. A gram of protein per pound of lean body mass up to a gram of protein per pound of body weight. I think at least three meals a day. I think that this is where some of the fasting stuff gets dodgy, particularly as we age because you one simply cannot get enough anabolic signaling to gain or maintain the current muscle mass.

And the more frequently one eats the lower the total amount of protein that one relatively needs to be able to get a general anabolic response. We need about 20 or 25 grams of protein at a meal in theory to get enough of that branch chain amino acid to get an anabolic response.

If you're eating less protein than that, then in theory you don't kick over this threshold in which mTOR is activated and we get this kind of anabolic response. So I think there is a case for at least three meals a day, three meals and a snack, something like that with proper choloric control to be able to maintain good body weight.

And then John, if you're diabetic, could be like, man, let's figure out how to undo that because diabetes is a muscle wasting phenomena as a standalone item. There's a couple of different mechanisms there. It blunts the anabolic response and because of the blood sugar swings, there is a tendency to go into gluconeogenesis to start breaking down

your body's protein to convert it into glucose because of the variability in blood glucose levels.

And this is kind of a case for something like a lower carb or ketogenic diet and ketogenic diets do seem to enhance anabolic signaling, the perception of what constitutes anabolism, there are some other arguable anti-aging kind of benefits within that whole scheme. So some smart strength training, a little bit of zone two cardio, three meals a day, sunlight, sleep, all those sorts of things. But it needs to be this holistic thing.

I got to say Wired To Eat is bang on for what you would need for something like a one-stop shop that will lay out, if you do everything that the book recommends, it will lead you down the path to mitigating these things. And maybe at some point down the road you look into some hormone replacement therapy or some things like that to be able to augment this process. But I would work towards getting leaner. Work towards improved metabo metabolic health before you start venturing down that path because the hormone replacement therapy is really much more difficult to manage if the individual is overweight and/or diabetic because the testosterone tends to get converted into estrogen and it creates all kinds of problems.

Nicki: So eating protein and-

Robb: Strength training.

Nicki: ... Strength training are like two-

Robb: Must haves.

Nicki: ... Must haves.

Robb: Must haves, yeah.

Nicki: And then everything else obviously helps the picture like the sleep and the-

Robb: Generally improved metabolic health and all that. Yeah.

Nicki: Right. Yeah. All righty. All right.

Robb: Did you have other thoughts on that?

Nicki: No, I don't think so. Okay. Our third question for today is from Jodi on whey isolates. "Hi Robb and Nikki, thanks for continuing to do the podcast, great information and very entertaining. I love your humor and your no nonsense approach. My question is about whey protein. I have an autoimmune disease and I avoid gluten and dairy other than ghee, which I tolerate well. I'm an avid lifter and I do some running in yoga as well. Sometimes I find it hard to hit my protein targets, but I don't want to overdo the legumes or grains by using a plant-based protein powder. From what I can find, it seems that caseine is more immunoreactive than whey. I'm wondering if I should try a very clean whey isolate or if dairy is just a bad idea in general. What are your thoughts?"

Robb: So what were we talking about here a moment ago? N equals one.

Nicki: N equals one. Yeah, I was just going to say it really depends on if you tolerate dairy. It sounds like you've eliminated it due to the autoimmune disease, so she might not tolerate it.

Robb: And unfortunately whey protein, this is one of the things that I had going on in the background that I didn't realize was really flaring up what I assumed to be rheumatoid arthritis. And I had probably three or four years of low grade hand pain that we related in other shows. I had this, you made me a wonderful cheesecake, keto cheesecake for my birthday over a year ago.

Nicki: Last year, yeah.

Robb: And my God, it put me into a flare that I needed prednisone and painkillers and it was really awful. And any... So goat dairy does not bother me. So a thought within this whole story is goat, sheep, camel dairy. I know that there are some goat milk protein powders out there. So you might try those. And as a very first thing, you might try the whey protein. What was interesting for me though is I feel like it got worse over time.

It didn't start off really bad. And what was really weird, I would do this Greek yogurt and I felt like metabolically wonderful on it. I was clearheaded. I felt like it was good on my gut, it just, my gut felt happy and my fucking hands hurt crazy. It was really weird because with the celiac stuff, I'm so used to if I would get systemic issues from gluten exposure, but my gut would hurt really bad too. And then I have these... Talking about fiber earlier, too much fiber or the wrong type of fiber or fermented foods would make my gut hurt.

Dairy doesn't make my gut hurt. My gut seem super happy with dairy, but there's something else going on there. Either the proteins aren't getting broken down entirely and they make it through the gut wall and then there's some molecular mimicry there or something like that. I don't entirely know, but I guess the A1 dairy, the standard bovine dairy that we are exposed to, really seems to be a problem. I would agree that casing seems to be more immunogenic immunoreactive than whey protein, so you could try a good quality whey protein, but I would be really fastidious in paying attention to any type of inflammatory stuff.

Nicki: Do they make A2 protein powders?

Robb: I'm not totally sure.

Nicki: I'm sure it'd be really expensive.

Robb: The only one that really comes to mind is the goat, goat milk stuff, goat, sheep, camel, those sorts of things. So a goat yogurt could be an option. I do know that the Mount Capra folks make a goat milk protein and all that kind.

Nicki: It's a goat milk, like a powdered milk?

Robb: Yeah. Yeah. But I think they have a goat whey protein also.

Nicki: Oh, okay.

Robb: It is pricey.

Nicki: I'm sure.

Robb: It's kind of on the pricey side, but yeah, those are my thoughts. And the hydrolyzed beef protein and stuff like that, those things tend to be really low in branch chain amino acids, so they're kind of a nice addition. They can help balance out that cystine

methionine ratio from just eating mainly muscle meat and stuff like that. But they really don't fill the gap the same way that the anabolic response that we get from whey protein.

The previous question was asking how does one forestall muscle loss with aging, God damn, whey protein is phenomenal at producing an anabolic response. It really is kind of one of these magic items. It's one of the really rare food supplements that does something, really does something magical there.

It has a potent anabolic response. It really upregulates a glutathione production. It's great if you can tolerate it, but clearly there are some folks that can't. And again, this circles back around, not to belabor this point, but maybe some amount of gut health intervention allows people to reintroduce that.

But again, with me, I just haven't cracked that nut. I've continued to look and look and I mainly just have to find foods that work for me and color within those lines. And I will say that when I do goat cheese though, doesn't hurt my hands, doesn't hurt, my gut does give me acne. So there's that.

Nicki: The puzzle is ever, the pieces are ever shifting, changing shape. We don't even know what the picture is that we're trying to put the pieces together to make.

Robb: Right. Right.

Nicki: This is the story of Rob's guts.

Robb: So Jody, if you tinker with this stuff, I'd love to hear back. These are the things that really matter to me because again, if we take the aggregated information about say, dairy and whey protein and strength training, it's awesome. It is awesome. It's such a great item. It's definitely it. It's similar to creatine. It's really worth the money to incorporate it in. It can really simplify some aspects of folks lives and for some people it's just not a good fit.

And so it'd be interesting to see does regular bovine dairy work for you? Or if it doesn't, does goat or other dairy sources actually work for you? Because this is where, although again, it's anecdote, but within this N equals one experience, this is kind of all we've got. We've got some big picture stories again, fiber, good or bad dairy, good or bad. And it's really just going to depend on who we are, what our situation is.

And that situation can change too. You get a gut bug, you get bit by a tick that has Lyme disease or something and everything changes. Then we have to rejigger what we're doing. The aggregated evidence-based medicine just doesn't tell us that God damn much about what to do. It can be like, what I see is it's a lot of the beginnings of a journey where there's multiple forks in the road and we have these starting spots. Fiber yes or no. High protein, yes or no. Carbohydrates, yes or no. And then we have to just start tinkering and iterating from there.

Nicki: That's a good analogy, there are forks in the road. I was right there with you seeing it.

Robb: Did you see it?

Nicki: I saw it.

Robb: Cool.

Nicki: Yep. Okay. That was our three questions for this week. Any other closing thoughts?

Robb: Not currently. I jabbered on a lot, so I'll shut up.

Nicki: You were quite the little chatterbox today.

Robb: Yep.

Nicki: All right everyone, thank you so much for listening. Please check out our show sponsor ELMT for all your electrolyte needs. You can grab yours at drinklmnt.com/robb. That's drinklmnt.com/robb. And hope you're having a wonderful start to 2023 and we'll see you next week.

Robb: Bye everybody.