

Nicki: It's 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 a bold aim to help 1 million people liberate themselves from the sick care system. You're listening to the Healthy Rebellion Radio. The contents of this show are for entertainment and educational purposes only. Nothing in this podcast should be considered medical advice. Please consult your licensed and credentialed functional medicine practitioner before embarking on any health dietary or fitness change. Warning, when Rob 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 plus.

Robb: Hi-diddly-ho neighbor.

Nicki: Hello, hello. Welcome back to another episode of the Healthy Rebellion Radio. We are in the middle of the worst storm that Texas has seen since 1985.

Robb: 1985 or something.

Nicki: So it's been an interesting few days.

Robb: Unpack that for for the listeners?

Nicki: Well, we honestly we are very fortunate because so far knock on wood, we have not lost power. So we have heat and electricity. So we're very grateful for that. We haven't had water for two days now. The neighborhood we live in, has a shared community water-

Robb: Well system.

Nicki: ... well system. And there are multiple frozen, broken pipes and pumps and things there. So the entire neighborhood is without water. So it's been a little bit challenging. But we had water stored, and we have a swimming pool so we're able to grab water from there to flush the toilets and heat it up on the stove to wash dishes and whatnot. But definitely makes you appreciate all of the modern conveniences of what we're so accustomed to.

Robb: And we would have been a little better squared away, but we're three quarters halfway packed up for moving. And so there's just stuff I was kind of head down focusing on packing because we holed up moving here very, very soon. And so there were some additional resiliency things that it could we have done, but it's kind of funny we talked about this throughout COVID and whatnot and this resiliency stuff and everything and a very non resilient point in your life it's moving. You have a lot of exposure.

Nicki: Especially if you've eaten down 95% of what's in your chest freezer because you can't really move that very easily if you're moving across country. But thankfully this storm should be short lived. And hopefully-

Robb: And hopefully we will not be short lived.

Nicki: Hopefully we'll have water here in the next day or so. So I am very much looking forward to a shower. Rob showered the morning of the day that we lost water. I don't shower every day. I'm kind of one of those.

Robb: You're Italian.

Nicki: I shower when I need to but not every day. And so it's been a while for me. I am so looking forward to a shower. Anyway, probably TMI.

Robb: Never.

Nicki: Let's see here. We had lots of successes from our winter 2021 rebel reset that just wrapped up last week. We're recording this episode a little bit early, so that's super exciting. I'm going to actually grab some big wins and share some stuff in next week's episode kind of let you all know some of the fun stuff. Are you okay?

Robb: Yeah, I'm trying to get my sweater off here without arm barring myself.

Nicki: The folks-

Robb: Maybe it's freezing and I'm going to the platform.

Nicki: Fun times in the wolf household. But we will share some of the highlights from our most recent rebel reset. Our next one is coming up in April. And we also have Sarah and Grayson of basis health and performance, they're going to be doing another live strength program for us here starting in March. So we'll have some more details on that coming up as well. And that is not to miss. Those folks are amazing. Their programming is top of the line and people have gotten a lot of results from their previous programs that they've done for us, so that will all be happening inside of the healthy rebellion community.

Robb: Great.

Nicki: Your turn. What's our news topic?

Robb: So the title of the paper is green tea extract only effects markers of oxidative status postprandially lasting antioxidant effect of a flavonoid free diet so-

Nicki: That's a mouthful.

Robb: It's a mouthful. Hat tip to Mickey Willie Dean-

Nicki: Willie Dean.

Robb: ... who's running a great podcast herself called Mickeypedia. And it is fantastic.

Nicki: She's one of our rebel members.

Robb: Yeah, just an amazing woman. And this is a really interesting paper and I don't want to over hype this thing. But it is interesting in the context of carnivore and things like that because there's a lot of back and forth like, "Well, won't you die because you're not getting antioxidants from vegetables and whatnot." And now, this thing is not a vegetable free diet they did include potatoes and carrots. So potatoes have some vitamin C, carrots have carotenoids and whatnot. But it's really interesting. And so I will read through this, this is from the conclusion of the paper. In conclusion, the green tea extract incorporated into meat patties in doses realistic for addition to processed foods only leads to a short term change in plasma antioxidant capacity, and has no long term effects on oxidation parameters within the blood or urine compartment in smokers or non smokers. So it was a very transient process by two hours, the net antioxidant effect

of incorporating a really hefty dose of green tea extract into these meat patties was gone.

Robb: And this was basically a metabolic ward type setting, people lived on site, they only ate the food that they was provided for them. So it was actually remarkably well done. And they had smokers and non smokers to just kind of see what the effect was. The study can therefore be seen as a 10 week controlled study with dietary depletion of all food antioxidants derived from fruits and vegetables, except for carrots and potatoes. There is that little thorny deal there. During the depletion, we observed a decrease in oxidative damage to proteins, DNA and lipids concomitantly, with a major reduction in plasma, ascorbate, and minor changes and other vitamins in antioxidant enzyme activities. We speculate that the seemingly positive effects on oxidative status are partially due to depletion of some pro oxidant compounds coexisting with vitamin C in fruits and vegetables. And this underlies the general lack of solid knowledge of the mechanisms by which a diet rich in fruits and vegetables causes a decrease in the risk of chronic disease.

Robb: So when we look at epidemiological studies, there's a clear correlation between fruit and vegetable intake and better health. The problem is that fruit and vegetable intake goes along with a bunch of other stuff. And this is one of these really rare, like this is a gold standard study method. And wouldn't be difficult to replicate this thing and just make it pure carnivore, just pulled the potatoes and carrots out of the mix. It's a very long paper. And the analysis that they use for looking at advanced glycation end products and oxidative stress and in spin trapped oxidative compartments, it's just huge. And I haven't really dug into that stuff in a long time. But this is where we have a really fascinating compare and contrast between what we see out of epidemiology, which can be helpful, it can be interesting, but then we can have something hidden in plain sight here, which is that we actually saw less oxidative stress, absent the addition of other fruits and vegetables.

Robb: And this was in both smokers and non smokers. Now, there will be people in the carnivore scene that are just like, "See, see, we told you this is the one and only true way," and not enough data to say that yet, but I will concede that this is a little bit of a hash mark in favor of this idea that maybe some plant material under some circumstances. So one of the things that they talked about in this piece is that beta carotene and carotenoids in general, are really problematic to get a handle on within a population setting, because their conversion into retinol varies massively, their absorption out of the gut varies massively. So one person may absorb a huge amount of carotenoids, which may have beneficial or deleterious effects and another person may absorb almost none. And so there is just a there is a massive person to person variation there.

Robb: So I mean, again, this is stuff that needs to be carefully looked at but it's really interesting, like there wasn't a clear and obvious deleterious effect with the removal of the lion's share of fruits and vegetables. And this was not a ketogenic diet. But this scores up a little bit with what we've seen in ketogenic diet research where the antioxidant capacity of individuals eating ketogenic diet improve, just the endogenous antioxidant functions improve. And it reminds me a little bit of getting vitamin D from the sun, it happens in a self regulatory way. Because anything that is an antioxidant can be a pro oxidant it's all context dependent. Just calling something an antioxidant is bullshit. It's all relative to everything else, because redox reactions go in these cascades from things that have a greater or lesser oxidative or reductive capacity. So it's really interesting stuff and hat tip to Mickey for tracking this thing down.

Robb: And, again, I know I can see the people in my head who in the carnivore scene that are going to overly conflate this thing. This is interesting, it is definitely a feather in the cap of that idea, it creates a beachhead to at least start having a discussion around the removal of plants largely may not be as hazardous as what we thought. But this is not saying that a carnivore diet is the best thing for all people under all circumstances. And again, let's not turn carnivore into the veganism of the ancestral health movement, just keep your feet on the ground a little bit. You can still garner a following by having a nuanced approach to things and not just selling hyperbole, it can happen.

Nicki: And we will link to this in the show notes. So rebels.com under the podcast.

Robb: Anybody would want to listen to it by then, but yeah.

Nicki: It's time for our T shirt winner. This week, it goes to a three star review that we thought we would read and have a little discussion about. This one is from Lou Tang, and he says or she, "Just read the books. I'll save you the time of having to listen to today's episode. It starts out with some libertarian nonsense, followed by the self indulgent reading of a positive review. Finally, we learned that more electrolytes specifically LNT will cure all of your underlying health issues. I'm a big fan of Rob, the scientists, nutritionist and I think his books are outstanding. I still listen to this podcast for the occasional nugget of nutritional insight, but it's becoming increasingly difficult to stomach all the other fluff."

Nicki: So I wanted to read this because we do read a review each week as you all know, if you listen. And part of the reason is we like giving out t-shirts, we think it's fun to share that with our loyal listeners. So that was something that we thought would be a fun way to get some branding out and promote-

Robb: And also say thank you for the participation.

Nicki: And also say thank you for the reviews. Obviously reviews are what make a show grow. And the larger your podcast audience, the the more sponsors you can attract. Those of you who've been listening for any length of time know that last year, we had a variety of sponsors throughout the year. And this year, we decided to have LMNT be the sole sponsor. And sponsors make the show go.

Robb: And I was noodling on that a little bit. When we went this direction, the whole 10 year run of the Paleo solution podcast, we didn't really have a sponsor.

Nicki: Zero. Occasionally we would say it was a sponsor, but it was-

Robb: We actually took know-

Nicki: ... it was just usually brands that we liked or knew a founder or had some sort of connection with the person but we were not paid for any episodes of The Paleo solution. So it was only when we launched the Healthy Rebellion Radio that we attempted to monetize the show.

Robb: And part of that is because we were one of the early folks to experience some amount of canceled culture. So Google made our website almost unfindable on the interwebs. And we had a decision before us do we do something else which we could do other things. You were the co founder of a tech company, I can do a few things here and there. And we had a long discussion about is our departure from trying to push this health and wellness thing. We still enjoy this, we still feel like there is really important work to do. With The Healthy Rebellion, the goal of liberating a million people out of the

sick care system. I'm pretty passionate about that. And that actually dovetails a little bit into the libertarian angle on this. I do have some pretty powerful feelings around things like liberty, freedom, transparency. I'm the crazy guy that doesn't think the US should be doing a whole host of foreign interventions with our military.

Robb: I think we should be very, very circumspect about getting involved in anybody else's stuff. And it always makes me chuckle a little bit when people get a red ass about that position. So you have a problem about self determinants and responsibility and freedom. I'm not sure what about that really rubs people wrong, it usually ends up being the more market centric part of things. And if I have a discussion with the person then they usually end up tapping out to side control pressure, and basically like, oi kind of get it but it just doesn't jive usually with their emotional attachment to the way that they think the world is. But anyway, the long and short of that. Looking back, it might have been cool to have run this in a patronage type format, like the way that the Dark Horse podcast operates. It's 100% donation based and whatnot. But when we did this, when we made this pivot, there weren't many people doing those types of things. The last two to three years has been a really rapid evolution space.

Robb: And I don't know if this is coming across as some sort of justification for what we're doing. But a lot of people who listen to this podcast also have businesses and think about things and looking back it might have been cool to go 100% patronage angle. In that case, we would have found out pretty quickly whether or not-

Nicki: We had only six listeners.

Robb: ... we legitimately had six listeners. But that is it at the end of the day, the reason why we did it. So is long as this thing keeps going forward, it's going to have some type of sponsorship, we do believe in LMNT. It's an interesting dig though, to say that we're suggesting that electrolytes address every underlying health issue. I'd say about 50% of the time we're like this may or may not be the thing we recommend chicken bullion about as often as we recommend LMNT itself, So that's a watch. I will hold Lou Tang to one point though, if you're listening to this podcast for the occasional nugget of insight then you're wasting your goddamn time. And you should be making better use of your time I listened to no podcasts, unless I am basically enraptured the whole time. And there are so many podcasts out there you can find one that doe, The Dark Hobs podcast is one that I listened to, I listened to the Dan Crenshaw podcast a little bit here and there.

Robb: I do kind of pick a little selection based off of when things go freakanomics there's a couple other ones, but our time is literally the most important thing that we have. So for anybody with any podcast, if it's not really doing something for you, don't listen to it. And if this one's not doing something for you don't listen to it.

Nicki: There's too much information that we're always bombarded with and we have to be really, really protective and safeguard all of the stuff that we let come in through our eyes and our ears. And to Rob's point, if this one's not for you, then don't listen.

Robb: So if my leanings towards freedom are off putting definitely don't listen to this, if a orientation towards electrolyte centric health is off putting definitely don't listen to this, but this will be part and parcel for this podcast, at least through 2021.

Nicki: But Lou Tang, if it's not too awkward for you to walk around wearing a healthy rebellion t-shirt-

Robb: We will still send you one.

Nicki: ... we will still send you one. Send us an email to Hello@Robwolf.com with your T shirt size and your mailing address. And now for the sponsor that makes this entire year of The Healthy Rebellion radio possible. If you find any value at all in this podcast, our 2021 salty AF sponsor LMNT is to think. And today we wanted to talk a little bit about why we didn't include any sugar in the electrolytes, which may seem like an obvious question, but first I want to read a verified customer review from Rory. Rory says, "So far, I have used the salts for two to three hour rides. Taste is good and very agreeable with the stomach. I'm looking forward to using them on a four plus hour gravel ride soon. And that will be the true test for me. Great product for me since I don't want sugar or carbs in my hydration." And Rob, we've gotten this question a lot because a lot of other popular electrolyte drinks on the market, not Gatorade necessarily, but other ones in this newer space do contain sugar. And a lot of people think you need it for proper hydration.

Robb: It's interesting because when you really get deep into the mechanisms of how electrolytes are transported out of the gut and into circulation, the sodium glucose co transporter you could actually make the more accurate statement that sodium is necessary to transport glucose not the other way around. Because sodium and other electrolytes can be transported with amino acids, with ketones bodies, with various fatty acids. So there's actually a host of other items that can and do move electrolytes into the body. And this is obvious when we see a situation like extended fasting, medically supervised fasting, they still give people typically some type of electrolyte, a product to drink, because they need that people will get lightheaded and hypovolaemic and have problems, and they're able to absorb it. And the reason why is because they enter a state of ketosis, the beta hydroxy butyrate translocates from the circulation into the gut. And that is likely one of the co transporters that's occurring there.

Robb: Now, it's not to say that glucose specifically can't be of benefit in this story. But by and large, most people get more than enough sugar in their day to day lives. And some of the products that offer glucose in conjunction with electrolytes, it's just a number that they throw in there, you can't infinitely vary this thing. And what we've found is that if and when people need glucose, it varies based off the person in this situation. And so instead of trying to do a one size fits all, we offer people the thing that we think they really, really need which is electrolytes that actually tastes good. And then you can tinker the glucose up or down based off of your need. And I've talked about this before, just with jujitsu, if I've got a really hard day of rolling ahead of me I may do 20 grams of glucose per hour in addition to the electrolytes. It's a bunch of old beat up husband's like me, I don't do any additional glucose because I really don't need it and it's just pointless.

Robb: So that is why we did this stuff. It is kind of funny, whether we're talking about the specific formulation of LMNT, the amount of sodium, potassium, magnesium, or even the inclusion or exclusion of glucose, folks just assume that we screwed this up somehow. And in fact, it was all incredibly intentional and knock on wood but thus far it seems to be pretty well received and working quite well.

Nicki: So you can grab some LMNT at drinklmnt.com/rob. You can try a sample pack with our original flavors, the raspberry, citrus salt, orange, and raw unflavored or the Fiesta pack that contains chocolate salt, lemon habanero, and mango chili, which are all great as cozy, warm beverages as well if you're in a chilly part of the world, right now.

Robb: And you have running water.

Nicki: And if you have running water and heat. Again, that URL is [drink -M-N-T.com/](http://drink-lmnt.com/) R-O-B-B. And now it's time for our questions today. This first one is from Deidre and she's has a question about potassium intake. "Hi Rob. I stumbled upon a couple of journals that state there is a link between hypokalemia and insulin resistance, metabolic disorders and NAFLD."

Robb: Non alcoholic fatty liver disease.

Nicki: Thank you. "Of which I have all of them. I have a difficult time losing weight even when following healthy eating to a tee. I've been tracking my food on My Fitness Pal for a month and upon reflection, I'm not getting nearly enough potassium every day. Sodium doesn't seem to be an issue. I salt my food pretty well. I do magnesium soaks once or twice a week. Can you touch on this subject a bit more and maybe make some recommendations on how to hit that 4,700 milligram mark for potassium daily. Even with eating a large amount of veggies and protein it's still a difficult number to hit. Dried herbs like chervil, parsley, basil and tarragon seem to be my best bets. But it's difficult to get 100 grams of dried herbs in a day. Hello, help."

Robb: I know of some stoners that can do a pretty good run at that.

Nicki: Thanks, Deidre.

Robb: Really quickly just at the early part of this journal to talk about the link between hypokalemia insulin resistance metabolic disorders etc. This is again typically these retrospective epidemiological type studies, food frequency questionnaires and whatnot. And it's not surprising that low potassium diets typically correlate with poor health because it's usually highly processed foods. So these processed foods, when you just look at even white rice versus brown rice, the amount of potassium in them is non trivially different because of the removal the rice bran and whatnot. So that's a piece of this but then the other piece of this it would have been really interesting had Deidre given us a day or two of what she's really eating and then what the actual numbers are. If you scroll down a little bit, half a pound a steak is 800 milligrams of potassium and avocado is a gram of potassium, and out of nuts, it's 200 milligrams of potassium. So in this is again why with LMNT we have some potassium but not a ton of potassium because when people are generally eating whole unprocessed foods, they usually do pretty well on potassium.

Robb: And the thing that they're really deficient in most the time, particularly if it's hot, or they're athletic or whatnot is the sodium, and the sodium being deficient ends up being the more problematic feature because you start bleeding off potassium at a higher rate trying to recalibrate the sodium potassium levels. So Deidre, definitely there is a linkage here. I think the linkage has much more to do with eating highly processed foods. It'd be interesting to know what you really are eating. We hear people say they eat a large amount of protein all the time. And then they come into our reset, and we actually scrutinize what they're really eating, and they're usually eating about half of what they were eating.

Nicki: They think they're eating.

Robb: And if we double your protein, all of a sudden, you probably are going to be right in that ballpark of 4,700 milligrams of potassium per day. So if you want to follow up, give us a couple of days of your food and also detail what the actual potassium levels are. That would be great. But I think if I were to guess, I think there's probably still more processed food in this story than what we might think. And when we look at insulin

resistance, non alcoholic fatty liver disease, the non-alcoholic fatty liver disease, I wouldn't say is exclusively a product of liquid calories, but man it is high. And so like fruit juices, sodas, stuff like that, which also the fruit juices can provide potassium but they introduce a pretty remarkable bolus of sugars.

Robb: And Peter T. had a pretty good podcast with I'm blanking on the guy's name where they dug into this and it really ruffles the feathers of the evidence based nutrition crowd. But there is something about fructose, particularly in liquid form that is really problematic at the liver level with the way that it changes hepatic metabolism. So you do need to overeat, you do need to be in a net calorie excess. But the interesting thing is even at isocaloric or hypocaloric levels, consuming significant amounts of fructose moves one's physiology more in that insulin resistant non-alcoholic fatty liver kind of state. And again, yes, thermodynamics matter but hormones matter too. Both of them matter.

Nicki: Okay, our next question is from Mariana and she has a question about hormone replacement therapy. She says, "I'm 69 years old and a postmenopausal female, who a little over a year ago started HRT about 18 months ago. I use bioidentical hormone replacement therapy for the first seven years after menopause then in keeping with recommendations, I went off of it for about 11 years. My goal in retirement is to be as mentally and physically healthy as possible for as long as I possibly can. I'm quite active exercise daily, including cardio and strength training, with yoga thrown in. Through intermittent fasting and low carb eating. I've recently lost 25 pounds and I'm five foot six and 155 pounds. The HRT I'm using is administered via bioidentical pellets every fourth month with oral progesterone taken daily.

Nicki: My decision to go back to HRT was prompted by reading Avrum Blumming book's Estrogen Matters and it was recently reinforced by reading Lisa Mosconi's book, The XX Brain. Now finally, to my question, am I doing myself harm or good or just wasting my money, I can afford it by seeking HRT at my age. As far as noticeable health benefits, the main thing I noticed is that my skin looks a lot better."

Robb: So super controversial topic. For a long time, the research suggested that in women in particular, HRT was likely increasing different forms of cancer. I'm not an expert on this stuff, so I'm taking this definitely secondhand from people that I do consider experts like Kirk Parsley and Gabrielle Lyon, they have made the case that those studies had a lot of flaws with them. That just the basic methodology was very, very poor. There's also this whole story of bioidentical versus synthetic hormones, which generally the synthetic hormones are biologically the same structure. Sometimes there's a little bit of difference there, which may or may not have a big effect. But one of the biggest challenges with this and we see this, maybe almost arguably, more on the male side of the story than the female side, is actually giving some thought to the levels and the cyclical nature of the hormones that would be reflected in you for biology.

Nicki: A normal cycle.

Robb: Yeah, trying to emulate a normal cycle. Sounds like what she's doing is much more in that line of trying to emulate a normal cycle. We do have a paper here that I linked to effective menopausal hormone therapy on components of the metabolic syndrome. These folks are not using a sophisticated functional medicine approach, but it dramatically improve the metabolic syndrome parameters of these postmenopausal women being on even what I would consider to be a ham handed HRT approach, much better ways of doing this, much smarter people than myself to describe how to do it. But I would go out on a limb and say that for virtually anyone, a more youthful hormonal profile is generally going to be better. And again, this doesn't mean that

supraphysiological like more testosterone is not better, more estrogen is not better. There are funny enough u-curves in virtually all of biology. And we would like to hit that optimum level, ideally, and know what that is and run with it.

Robb: This is an interesting opportunity that our kids will have when they get in their 20s, they have an opportunity to get their blood work done and see what a youthful hormonal profile looks like. Because some people operate greater-

Nicki: For them, specifically.

Robb: Yeah, for them. Instead of it being a complete guessing game. So that at least as they motor forward and they look back, and they'll say, "Well, this is what I was in my 20s. That seems like a really good spot to start when you start tinkering with the hormone replacement therapy. For us, it's kind of a guess most people haven't really done much in this regard. And so we just have to get in and look at what normal ranges are and maybe tinker at the higher end of normal, which seems to benefit most people. But again, I would generally say that tinkering with this seems like a good bet. But again, with all things in biology, there are trade offs with with everything.

Nicki: I have not read Avrum Blumming's book, Estrogen Matters, but I've heard it's great. There was some chatter about it inside the healthy rebellion community the other day. So that's on my reading list as well. Our next question is from Bradley on toenail fungus. "Hello, Robb and Nicki about a year ago, the middle toenail on my left foot curled on the right side of the toe, and I noticed there was fungus under the toenail. There was no pain and did not seem to be a problem. During this past summer I went to the doctor for my regular annual blood draw and showed the doc the toenail. She said it is just cosmetic and is not an issue unless it spreads. Also, she said the only thing that can be done is take some pills which she said are very hard on the liver for several months until it clears and recommended that I do not take the medication unless the fungus spreads. Then in October, November, I noticed fungus behind the big toe toenail on my right foot. The toenail on my right foot did not grow but it has more of a lumpy feel and I can see the white fungus growth underneath the toenail.

Nicki: I still have zero pain on either foot and not sure if it is even a big concern. However, considering a conventional doctor is reluctant to put me on the medication because of the potential side effects do you happen to know of anything else that can be done? I have tried the foot baths with tea tree oil and other foot soaks and toenail ointments and they are not working. I have found some doc's on the internet recommending special diets for around six months or more. But they all vary somewhat and I have not attempted them yet. Also, I found a somewhat fringe treatment by ingesting sugar and turpentine. I have not tried this either. Supposedly the sugar attracts the parasite or fungus or whatever and the turpentine eliminates it and you just shut it all out. Thanks very much."

Robb: It will eliminate, the turpentine will kill you. You're actually more of an expert on this than I.

Nicki: So I actually got toenail fungus on my left foot after a pedicure when I was 19 in college, and for most of my 20s and 30s or 20s actually, I would just paint over it. Actually I take that back I did go on one round of I think it was maybe dye fluke and some really gnarly toenail fungus drug that my mom paid for when I was still on her insurance and it was super expensive and I only did a month of it and it really didn't do much probably because I needed to take it for longer than a month. And then really kind of suffered with it for the rest of my life till I turned 40 because it was super embarrassing. As a

female you want to wear cute shoes in the summer and flip flops and you go to a wedding and you want cute open toed sandals, you know all these things.

Robb: Jiu Jitsu was a big factor.

Nicki: And jujitsu was really the deciding factor because up until I started Jiu jitsu all of my athletic endeavors. I could wear close toed shoes. Whether I was trying Olympic weightlifting or CrossFit or whatever you have sneakers on, it's not a big deal. But as soon as I started doing Jujitsu, it was just this unsightly thing that gave me, I was pretty self conscious about it. And you don't want to give it to anybody else as well. So it was the turning point for me. I actually went to a podiatrist because I had read online too. And I've tried everything too. I tried the foot baths, everything that you mentioned Bradley, except for the turpentine. I basically did it.

Nicki: And so I had not even done laser therapy back-

Robb: You had the toenail removed, you did laser therapy.

Nicki: I had a toenail removed then they put laser on it. And that didn't work. And so I finally went to a podiatrist in Reno, Nevada. right after I turned 40. It was all the toenails on my left foot. I never got it on my right foot. And I wanted him to remove them all. And then I thought I could put some topical stuff on, and then it would just, as gross as it sounds, getting your toenails removed that was where I was at. And he said, "I can do it, if that's what you want." He's like, "But the only way to get rid of this is with this prescription." And he's like, "My sister in law, she's an avid athlete, she had the same problem. If you were my kid, this is what I would tell you. If you really want to get rid of it, you have to take it." It was-

Robb: I can remember.

Nicki: It's terbinafine.

Robb: Yeah, terbinafine. You have good memory.

Nicki: Yes, terbinafine. And it was a three month, 90 day course. And the liver issues were a thing after the 30 day mark, you get your liver enzymes checked, mine were fine. So I continued. I was nervous about that. So obviously, it's a super personal decision, if you don't have to be barefoot around other people where it's bothering you, and it doesn't have pain, then you probably don't need to do, and I didn't do anything about it for 20 years. But for me really getting into Jiu Jitsu was sort of the driver for my decision and in taking the chance with the side effects and obviously monitoring the liver. Your podiatrist will have you go in and get your blood work done at the 30 day mark to make sure there's nothing awry there. And then I felt comfortable continuing because my numbers were all normal.

Robb: And you've been fine since then?

Nicki: And it's been gone since so that part it has been great. All right. It's time for The Healthy Rebellion Radio Trivia. Jesus. And Robb added the question this week, I was like, "Oh shit, I didn't add a question."

Robb: Because you didn't add a question. So when you leave it to me to do then you get what you get.

Nicki: So I left a blank so you get to add it. Our Healthy Rebellion radio sponsor Drink LMNT is giving a box of LMNT recharge electrolytes to three-

Robb: And LMNT may deeply regret ever doing any of this.

Nicki: ... lucky winners elected at random who answer the following question correctly. Robb will we freeze to death in one day?

Robb: Yes.

Nicki: The answer is yes.

Robb: The answer is yes. You know what's hilarious. So we were on an LMNT team call the other day. And I think the vast majority of people are from the East Coast. Jalen is more-

Nicki: She's in Colorado.

Robb: ... she's Colorado, but she kind of more West. And we were just yucking it up. And I said, Well, it's going to be a guaranteed Donner party." And everybody just sat there looking at me except Jalen, who was laughing. I'm like, "So everybody's from the East Coast, right?"

Nicki: Nobody knew what the Donner Party was.

Robb: Nobody knew what the Donner Party was, which is a group of people that were trying to get over the Sierra Nevadas I believe got stuck in the middle of the winter and ended up eating each other basically. And so it's-

Nicki: And we now call it Donner Pass when you're driving on the AD from Nevada into California.

Robb: Yes. And so it's just kind of funny to me, and people on the West.

Nicki: So the answer to this week's trivia question is yes. To play go to Robbwolf.com/trivia, enter your answer, and we'll randomly select three people to win a box of LMNT electrolytes. The cutoff to answer this week's trivia and be eligible to win is Thursday, March 4, at midnight winners will be notified via email and we'll also announce the winners on Instagram as well. And this is open to residents of the US only. Our fourth question this week is from William. He has high bun should I be concerned? "Hi, Robb and Nicki, over five years of taking annual blood work, I found that my bun is consistently high 30 to 35 milligrams per deciliter. I've had my own theories as to why so see if I'm on the right track with this line of thinking. One, I've been a daily sauna user for the past five years, which could lead to dehydration and elevated urea in the blood. I drink at least a liter of water during and after and probably an additional one to two liters around dinnertime. My total daily liquids average four to five liters. I salt my food heavily and take magnesium and potassium supplements but I don't measure total electrolytes.

Nicki: Two I tend to eat most of my protein at night 100 to 150 grams with a half coming in the form of plant based protein powders. Three, the blood tests are always taken first thing in the morning so it's possible I'm still dehydrated from the previous night's sleep combined with the high protein intake. I don't normally drink a lot of water upon waking because I don't feel thirsty, although thanks to LMNT I'm starting to change that. My doctor is concerned about my high bun and an increase in chance to develop gout and

kidney damage. He has advised me to reduce my protein intake. However, my average daily protein is 150 grams and as an active 165 pound man, that number seems safe and appropriate.

Nicki: Have you looked much into by non people on paleo keto diets with high protein? Are my numbers way out of whack and dangerous? Or is high burn less of a concern in the context of a clean diet and low systemic inflammation? Could there be something else going on to contribute to this consistently high marker or is it as simple as spreading my protein intake more evenly throughout the day, instead of one large bolus at night, any thoughts and insights you have would be very helpful."

Robb: It's really interesting. And when you dig into what the blood urea nitrogen levels are with people, there's a fair amount of variability, although normal ranges, if I recall correctly, are more in like the seven to 20 range. And so 30 to 35 is definitely on the high side, until you look at athletes. And then athletes have markedly higher creatinine burn number of other markers. Dehydration can be a factor in this, but usually they can adjust for that if they're looking at GFR, the glomerular filtration rate. But the interesting thing about this is, is that typically, blood urea nitrogen isn't the thing that's potentially causing damage to the kidneys, it's kind of a sign that the kidneys are getting damaged, although increasing urea levels can cause problems systemically. So I mean once it starts ramping up, it can be a problem.

Robb: If this has been something that's going on for like five years though, I'm just thinking that probably within genetic variation, he may be on the higher side of things, he's active, the large meal before bed and then getting blood work in the AM, that could skew things because the body is going to be processing a pretty significant whack of protein in that whole situation. So it certainly could skew things in that direction. I guess what you could do a couple of different things, you could take the bulk of the protein early in the day and not have it be the bulk of the protein right before bed. You could reduce protein intake overall. In both of these scenarios, I would do it for a decent period of time. And again, see if you look feel and perform better, and then see how the biomarkers change in that circumstance.

Robb: But I wouldn't be surprised if this is just normal operating parameters for William. Maybe his normal is more towards 20 or 25, a little bit out of range, and then add some high activity, some sauna, and some different things like that, you could definitely skew things up into this range.

Nicki: Oh, it's fascinating to me that he's eating most of his protein at night because we have so many people that struggle to get in that much protein throughout a whole day.

Robb: We said he's using protein powders. So only some shakes or something. I don't know.

Nicki: Plant based protein powders. I mean, there's no reason to be doing plant based powders given his kidney.

Robb: It's no more beneficial or deleterious than doing anything else. I will say this though that's actually a good thing you pick up on their. Protein powders hit the system faster. And that will I think relative to say like a whole protein, which is say like beef or cottage cheese is going to have a slower entry and so the liver and the body is able to get on top of it a little bit faster.

Nicki: How long do you think it would take like if he was to do an experiment and ditch the protein powders and just do real food, how long do you think he would to-

Robb: A week.

Nicki: ... to run that before retesting his numbers and seeing if it made any difference?

Robb: Probably a week.

Nicki: William and that would be a really fascinating personal experiment to do.

Robb: Yeah, I like it.

Nicki: And if you do it please let us know because I'm curious. Our last question this week is from Carrie she wants to know where in the world. "Hi guys huge fan since way back in the day. I love the podcast and I'm grateful for all you do. I have a weird possibly not typical question but value your opinions and feel like it's relevant and something you might have an opinion on. Anyway. My family has been working towards moving to a small debt free self sufficient farm since 2009. We're currently ready to start looking to buy. We grew up on farms, ranches and have years of experience. We're into regenerative agriculture, pasture raised animals, etc. We also home school all of our kids. My question is we can move anywhere, considering political climates taxes, cultural, social environment, health freedoms, homeschool laws, ag environment, i.e, I don't want to live right next to poison sprayed conventional fields, but need a decent growing environment and all of the things to ponder and choosing where to live in this crazy world, what state would you choose? I'm super curious if you guys have thoughts."

Robb: Do we have thoughts?

Nicki: Well, I would say and we're going to link to this book that we've dug into a bunch.

Robb: Dig down a little bit. So there's a book called Strategic Relocation North American guide to safe places, fourth edition. And it actually talks about the whole world peripherally, and then it digs into Canada, a fair amount, but really focuses a lot on the United States.

Nicki: On the United States. And the cool thing about it is it addresses all of the things that you're questioning here, like political climate, taxes, homeschool laws, and it rates every state-

Robb: Access to public land.

Nicki: Access to public land for hunting, gun laws, health freedoms, and it rates every state on a scale of one to five stars. And so, obviously the growing environment, and it actually talks about that too, land available for growing, best places within inner state. So when they talk about the state, they'll say if this is the state you choose or if this is the state you live in, these areas are preferable for these reasons.

Robb: So as an example, most of Texas isn't that preferable because of hurricanes, tornadoes, there's so much seismic activity like they take some of that stuff in.

Nicki: They take military-

Robb: It gets a little Doomsday bunker too. Like proximity to a military base is not good because potential nuclear strike. So I mean, some people would look at this thing like oh my god, crazy preppers or whatever. There's going to be some information in there that is germane to you and something that's not. It is a marvelous book. And it was referred to me from a PhD in computer science, who's one of the smartest people I've ever met.

So unless you are smarter than that person, you may not know as much about this. And again, some of the stuff will be more germane to some folks and others but the hill country of Texas starting right about New Braunfels going up into Fredericksburg is an example of an area that has pretty good weather comparatively, although the snowpocalypse is challenging things right now. Tends not to get hurricanes, tends not to get tornadoes, decent amount of water, it does get hot, but not too, too hot, does get cold, but not too, too cold, generally.

Nicki: Except for this week.

Robb: Except for this week, so it takes all those things into account. It ranks like how much documentation do you need to do for homeschooling and whatnot, like different states will vary in that regard.

Nicki: Some states have mandated curriculum, other states are very open and you choose your own curriculum.

Robb: So the top states that were recommended it had Wyoming as number one.

Nicki: I think Wyoming.

Robb: Utah, Montana, and then South Dakota. And those were the really high ones. And then from there, it stratified output. But even in places like California, which is generally it gets a very low ranking for a variety of reasons. It points out that if you have to stay in California, and you could move to far Northern California, like the Redding, Palacido area, it's a much better option than being in Los Angeles or something like that. So you can-

Nicki: And obviously, you guys need a place where you can buy some land and raise animals, and it's going to be conducive to all of that. So you'll have those constraints as well. But I think you guys will really geek out on this book.

Robb: It's a great book.

Nicki: It'll give you a good starting point for further research.

Robb: And it was just updated the beginning of 2020.

Nicki: Right at the beginning of COVID.

Robb: Beginning of COVID.

Nicki: Carey send us an email once you guys make your decision and let us know where you landed. I think that is it for this week's episode. Any other parting thoughts Robb?

Robb: I've got nothing.

Nicki: I've got nothing. All right, good folks. Thanks so much for joining us. Remember to support our 2021 show sponsor LMNT for all your electrolyte needs. And your cozy hot beverage needs to just go to drinklmnt.com/Robb. That's drink L-M-N-T.com/ R-O-B-B and we'll see you all next time.

Robb: Bye everybody.

