

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 the bold aim to help 1 million people liberate themselves from the sick care system.

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Robb: Welcome back, friends, neighbors, loved ones.

Nicki: This is episode 163 of The Healthy Rebellion Radio. Thanks again for joining us. We had a small miracle occur in our family this week and we are very grateful.

Robb: Very, very grateful.

Nicki: Our cat, we have one cat at this point. As we mentioned, we moved to Montana with two cats. Our one cat, Thor, passed away late December of 2021, and so we still have had Murphy or Meeser or Sonny. He has-

Robb: 18 names.

Nicki: ... 18 names. But he's actually one of the most affectionate cats that I think we've ever, ever had. Just loves pets. You can hold them in all... We got him when the girls were really young, so this cat is so tolerant of being held in all the ways.

Robb: You can actually scratch his belly and he enjoys it.

Nicki: And he likes it.

Robb: And he won't bite you.

Nicki: Kick you with those rabbit feet.

Robb: Yeah. Or like a rabbit, scratch him. Yeah.

Nicki: But anyway, he is an indoor/outdoor cat. He loves to hunt. He's a great hunter, a great mouser. And so I guess it was Sunday night he went out and he wasn't there in the morning on Monday morning.

Robb: And he's usually clockwork.

Nicki: Very.

Robb: He hears us when we get up, and I think he hides under the deck or he is got a few spots that he waits until he hears us.

Nicki: And he can also get into the garage. There's a little dog/cat door that he can come into the garage and he has a cat tree in the garage. And so he wasn't there. He wasn't in the garage. And he has never gone miss... Maybe for 24 hours once, but otherwise it's...

Robb: He's pretty consistent.

Nicki: And so day one goes by, day two goes by, and Robb and I were for sure thinking that he got snagged by a mountain lion or some other predator that are in abundance around here, and just tried to keep our shit together.

Robb: Motored in into day four. Do you want to drop that we have other stuff going on too?

Nicki: We might as well, I guess.

Robb: So we'll get to that. So quick note is we're moving to Bozeman, Montana, and we'll unpack a little bit of that in a minute. So we've got the chaos of moving.

Nicki: We're packing already.

Robb: We're packing already. And I don't know, I think most people have pets, whether it's a cat or a dog. I know some people who are dog people are like, "Oh, cats are..." It's kind of like comparing chicken to beef as a meal. It's like, "Oh, why would you even want to eat that, or why would you like them?" But I get really attached to our pets and was doing all kinds of mental gymnastics, trying to come to terms with losing another goddamn pet. And I talked to Nicki, I was like, "You know, I was thinking about the whole Viking Valhalla thing, that the only way you get into Valhalla is dying in battle." And it's kind of self-serving for a society that doesn't want much of a social security plan for old people. But it's like we were trying to tell ourselves he had a great life.

Nicki: And we were talking to the girls too. There's trade-offs. We have an indoor/outdoor cat. We could choose to keep a cat indoors all the time, but what is the quality of life for that animal? He's meant to be out hunting and exploring and outdoors. And so we chose to have an indoor/outdoor cat. And with that come the risk that there could be something that-

Robb: A good life, but maybe not a long life.

Nicki: Maybe not a long life.

Robb: Yeah.

Nicki: And of course there were lots of... The girls were... By day two, actually

day three, Sagan's like, "Where do you think he is?"

Nicki: And I go, "Honestly, kiddo, I think something got him."

Nicki: And then it was lots of tears. And anyway, long story short, Thursday morning Robb and I go to jiu-jitsu in the morning and come back and Robb had to be on a call and walks out into the garage and...

Robb: I went into my office, which is half of a bay of the garage that we converted into an office, and I closed the door and then I heard this squeaky little meow. And out of my office, it goes either into the garage or up into the attic. I thought, "Oh my God, the cat's in the attic," which they've had occasion to go up in the attic before, both he and Thor. So I ripped the door open. He wasn't there. And then I was like, "Oh my God, I'm hallucinating." And so then I opened the door going to the garage and I did it so quickly that I scared Murphy and he kind of took off, and then I started... calling him, and he came to me and there were some tears shed. I couldn't even barely talk.

Nicki: Yeah. Robb comes in the house, he's like, "Oh my God. Oh my God."

Nicki: I was like, "What?" And I look up and he's holding him. And everyone, the girls were bawling happy tears. We were all crying. It was pretty special. So anyway.

Robb: So they might be tearing up right now.

Nicki: Yeah.

Robb: Yeah, so thanks to... So he came in.

Nicki: He must've gotten trapped in some-

Robb: He came in really hungry.

Nicki: He wasn't hurt.

Robb: Not hurt.

Nicki: He wasn't dirty. My thought was maybe he got treed by something and went really, really high, because we just have pine trees around here.

Robb: Just waited it out.

Nicki: And just waited it out. We had two big storms, a lot of summer rain the last two days, so I-

Robb: Which might've been why he was clean. He must've gotten doused.

Nicki: Yeah. Yeah. Anyway.

Robb: But he clearly didn't eat for a bit, because he came back very hungry, very tired and really looking for some pets.

Nicki: Yeah. Or maybe he got stuck in someone's shed or garage or something. But we're thankful that he's back.

Nicki: Back to our little bit of post-traumatic stress. As you all know, we've moved quite a bit in the last four years. This move is to Bozeman, which is about five hours south of where we are here in Kalispell. And it was not really planned. Well, back in March, James Murphy, our co-founder in LMNT, Robb and James will have these long conversations weekly. And Robb made a comment offhand-

Robb: Multiple times.

Nicki: Multiple times, yeah. "It's just a shame that..." Because James is in Big Sky, which is just south of Bozeman. "It's just a shame that we both aren't in the same city in Montana." Well, that got James's little or big brain actually worrying on the subject. And we've had lots of conversations like, "Well, why don't we live in the same city in Montana?" It would be really great for the company, great to have a lot of face time. And over the course of several months... At first, it was super unsettling for me because we love it here. We have our jiu-jitsu community here. We've made friends. We've only been here two and a half years, but it feels like we've been here five.

Robb: We have a depth of connection like five or 10 years.

Nicki: Yeah. And having come off of multiple moves, it was just like we're home. We're not moving again. But we got to stay open to what the universe has in store.

Robb: Just as LMNT has grown, the complexity of a larger team has become challenging, and there's some move to make an opportunity for more of the team to optionally be in the Bozeman area, and there seems to be a fair amount of interest. There's the university there. I got to say, Kalispell is... The Kalispell, Whitefish, Big Fork area is awesome.

Nicki: It's spectacularly beautiful.

Robb: It is one of the most beautiful places that I've ever been, but it's about five years away from being good as far as food and shit to do and things like that. It's still the underpinning-

Nicki: So there's that component.

Robb: ... of the rustic. Yeah. Yeah.

Nicki: It's a small valley.

Robb: Small community. Yeah.

Nicki: I mean it's a large valley, but it very much has a-

Robb: Low population density.

Nicki: ... small town feel. For me, one of the biggest deciding factors... I mean, as you all know, Robb has this essential tremor among other health issues. And Bozeman gets 300 days of sunshine a year versus 120 days of sunshine here in the Flathead Valley. So there was the compelling case for all things LMNT, and just being closer, Robb and James being closer together. And then the sun was a huge one. And I'm like, "Okay, we have the opportunity and the ability to choose to be in a sunnier place." We're not leaving Montana. We love Montana. And so that was a big piece. We went with the family. The girls really liked it. There's hot springs, there's Museum of the... There's lots of things to do that are of interest for them also.

Robb: And there's an SBG.

Nicki: There's an SBG, which is huge.

Robb: Ricky Davidson is Travis's son. He is the twin brother of Stella who's also a Brazilian jiu-jitsu black belt-

Nicki: Black belt and judo black belt.

Robb: ... and judo black belt. And Ricky and his wife, Cece, with their new daughter, Claire, are running the SBG there, so it's a new gym but still in our family lineage and all that.

Nicki: Our tribe. Yeah.

Robb: So yeah.

Nicki: So we call this the bittersweet move. Other moves have been-

Robb: Just bitter.

Nicki: No, no.

Robb: Leaving Reno was bitter.

Nicki: Leaving Reno was-

Robb: Leaving Texas was sweet.

Nicki: We were ready to leave Texas. Yeah, we were ready for four seasons and just a better, different climate.

Nicki: And this one's... I got to say, it's tough.

Robb: Yeah.

Nicki: But thankfully it's only five hours from here, and so it's not a terrible drive to come back and see people. And a lot of the great jiu-jitsu seminars that happen within SBG, the instructors, the black belts that come and teach, they happen in Kalispell, so we can drive back for those.

Robb: We'll be back. [inaudible 00:11:20] Yeah.

Nicki: And it's not that far of a drive for other friends to come visit us. So anyway, we've been in this complete... Any of you who have moved multiple times in a short span of years, moving sucks anyway you slice it. I think everybody has moved enough to know that. But when you're coming it off of... I don't know, this one's been tough just wrapping my head around the logistics, even though it's not that hard. It's just sort of like I feel a little bit traumatized. But we're getting it done.

Robb: We are indeed.

Nicki: So we're going to try to... This episode, this is actually Friday morning. We're recording it the morning. It will release it later today. It just sort of the way stuff is going with packing, it kind of got shuffled, but we're going to try to have consistent episodes for you guys. There might be a week or two where we miss just because my dad's going to come up and help us with some things, and he's the one that does the audio and whatnot on the show. So there might be probably two weeks where we drop off, but now y'all know why. And then we'll be back.

Robb: Cool.

Nicki: Okay. Let's get to the actual-

Robb: The actual reason why people theoretically come to this thing.

Nicki: ... reason why people are listening to this. Yeah.

Nicki: Okay, I wanted to share... We had a couple listeners share some comments regarding last week's episode. First, we had a comment from Andrew regarding the immune thrombocytopenia topic. He says, "Thanks again for The Healthy Rebellion Radio, Robb and Nicki. I found the immune thrombocytopenia segment particularly interesting. I've had ITP for about seven years now and have been meaning to write in to ask your thoughts on managing it."

Nicki: "I went strict carnivore, just meat, salt, and water for a few months from September of last year, when my platelets were getting close to 30, which is the threshold for treatment. And the following test, they were back up to 54, high

end of my normal average. I swapped to meat and fruit and coffee, occasional ghee and wine/cider, one drink one to two times per times per month max, and nothing else, in late December of 2022, and things have appeared consistently good. It's hard to tell, really tell, without a blood test, but I've had almost zero bruising or petechiae." I'm not really sure how to pronounce that.

Nicki: "However, I went out for dinner last Friday and had yakitori, which probably contained residual gluten in the marinade, with a cider. Saturday night I was out again and had a steak which had pepper on it, which I don't have, with a small red wine. This week, a bruise the size of a tennis ball appears on my chest with several smaller ones on my legs, seemingly out of nowhere. Looking back, I think this happened another time when I had roast beef which had been basted in gravy. I've gotten a bit lax on a few occasions with what I'd thought was trivially small amounts of cross contaminants in recent months, so it's a timely reminder that the small things can make a big difference."

Nicki: So hopefully that is helpful to our previous...

Robb: And maybe just to throw this in there, it's funny, not being in a clinical setting, like running a gym or even when we were working more with the actual medical clinic in Reno, and I think just getting beat about the head and ears from the Layne Norton crowd and all these people, I've gotten more lax about like, well, try gluten, see if it works, see if it doesn't. And what's funny about all this is it so consistently ends up helping people. I mean, it's not everybody. Not everybody has these kind of complex issues, but it's amazing when there is something that pops up, these kind of wacky genetic thing, kind of, air quotes, autoimmune condition things that kind of straddle the border of the two. It's amazing what these elimination diets end up producing as far as results. They're not easy to do. Not everybody can pull it off as a lifestyle remedy.

Robb: But I was having a conversation with one of our brown belts, Jose, who's from Brazil. He's an endocrinologist, and a great guy. He's a really good doc. But he was kind of frustrated with me because I had done a post about... I think it was the study of the week last time, that a low carb diet doesn't produce ketoacidosis and all that type of stuff. He's like, "It's just so hard to get people to change their diet."

Robb: I'm like, "It absolutely is, but it seems reasonable to at least float these things as a possibility, like, 'Would you be open to a way of eating and lifestyle management that would give you much better results?'"

Nicki: Results. And maybe be less reliant on medication.

Robb: And perhaps be less reliant on medication, potentially see far fewer side effects. And if the person's open to that, then find a network of health coaches and dieticians and stuff like that that could support the people. It's not really... Fortunately or unfortunately, it's not really the role of the physician to tackle that stuff. But what has been incredibly frustrating over the years is having different

doctors just cock-block these ideas wholesale because they're not standard of care and they're not formulaic and all that type of stuff.

Nicki: Mm-hmm. Okay. We also have a comment from Ben regarding the question on eGFR readings. He says, "I have eGFR readings in the range of 60 for at least a decade. My doctor pointed out that these tests are very sensitive to hydration or dehydration. If I pay attention to my hydration before my blood draw, the numbers are much higher. A more robust test for kidney function is SDMA, as it is less sensitive to hydration. I live in Phoenix, so this can be an issue."

Nicki: So I think it was Richard who asked the question on eGFR readings last week, so I'm not sure where he lives, but if he's in a very hot area, this hydration issue could be something to look into, and maybe this other SDMA test might be helpful.

Robb: And I did hear it's summer.

Nicki: And it is summer, so yes, this is true. All right, I guess we're onto our news topic section. Hubs, what do you have for us?

Robb: Yeah. This is a news piece, and I forget who fired this off to me, but the title is The Irony of Protein Corporations, and it's a really wonderful blog. It's a WordPress blog. Regeneratarianism is the title of the blog.

Nicki: LatchAFnet.word. We'll link to this in the show notes.

Robb: Yeah.

Nicki: It's not an easy one to remember.

Robb: No. No. But what this person does is there's finally some good research coming in, and this is actually referencing a different piece called The Rise of Meat Substitute Consumption and its impact on US Soybean Industry. And what's interesting about this is when we look at... And I just have to give a hat tip that Diana Rogers and I, we had very little information at the time. There just wasn't that much out there when we did Sacred Cow, but we just did some back of the envelope numbers, and we made the case that chicken and pork consume far more soy products and corn and whatnot than cattle do. There's a little bit that goes into cattle, but that the cell cultured meats and fake meats were going to be massive inputs for soy and row crop food inputs, because there's no other thing that you can put in there.

Robb: Part of the reason why this was so obvious to me is I worked in a lab doing cell culture, and just doing basic Petri dish culture where you use agar in some things and blood agar in strep cultures and stuff like that. It's called growth medium. And this growth medium, you look at the thing and it's like maltodextrin and corn derivatives and soy protein. And so I guess it's reasonable

that not everybody is exposed to that. But this is why it was so obvious to me right from the get-go that this was going to be a huge boondoggle, that the claim was that we were going to somehow find this thermodynamic efficiency by growing shit in a vat. And again, if you're on a spaceship or something like that and you have real limited situation, maybe this is the way this stuff works, maybe that is your most thermodynamic efficient thing.

Robb: Although I have to say, the book in the show, *Silo*, where they grow grass and plants and animals under grow lights. So even there they replicated that whole system and they're not growing stuff in a vat. But anyway, that's a side deal.

Robb: But going back to this paper, the whole thing is worth reading, but there's one paragraph here, "In other words, plant-based "meat" and cell ag actually increases the demand for soy since these forms of alternative protein require, respectively, over two to nearly six times the amount of soy that is required for conventional beef. Now, this is for conventional beef, your Walmart beef, your standard Costco beef. If you're getting 100% grass fed, grass finished, then it increases it exponentially because they don't get any soy in those contexts.

Robb: And this is again, the stuff that is really necessary for unpacking, because people will talk about the destruction of Amazonian rainforest, and the implication there is that this stuff is slash and burned and converted into cattle forage. Cattle are grazed in this area as a way of transitioning it to soybean production. It is not finished ultimately with cattle production. It is finished with soybean production. Cattle are used in the transition process. So you could say that's good, you could say it's bad, but it still though is held up as the rainforests are being destroyed to raise cattle. The rainforests are not being destroyed to raise cattle, they're being destroyed to raise soybeans. And the soybeans are then plugged into these industrial ag scenarios of fake meat, cell culture meat. They are sold as being more-

Nicki: They're patented and owned so that people don't have sovereignty over their food production, but they can pay the man for their fake meat.

Robb: They can pay a premium for it. And other pieces have suggested that the carbon footprint on the production of these lab grown meats may be conservatively 23 times greater than conventional beef. And again, this isn't even looking at legit regenerative ag and whatnot.

Robb: Conventional meat spends 70% of its life on grass and then it gets transitioned into feedlot, and a lot of the feedlot stuff... This is where Diana and I have pissed off a lot of people on all sides of this story, because even in the feedlot scenario oftentimes are giving crop residues and things like that that are either going to oxidize or compost or be fed to animals. And so they are given row crop products like corn, like soy, but they're also given the after effects of after you harvest a rice field or a wheat field or a corn field, just the crop residues that are left there. And I think that that's a wonderful way of doing nutrient

upcycling. And it's not technically grass finished.

Robb: And this is where, fucking shocker, we need a nuanced approach to this, because I think we are actually losing benefit by being, "Oh, it's got to be grass finished or nothing," like some of the Dave Asprey and some of these other people out there, that I think sometimes are well-meaning. But I think also there are a number of these people that just draw these arbitrary lines in the sand. I remember Dave saying that if you couldn't get 100% grass finished beef, you should just fast. And it's like, "Fuck, man, how disconnected can you be from the world?"

Nicki: Right.

Robb: But what's kind of cool, and I forget if I mentioned it in our show, I was just interviewed for a different summit, and so I think that I mentioned some of this stuff as part of the summit. My first two books, Paleo Solution, Wired to Eat, I feel like they're really good books. I think that they've stood the test of time pretty well. But immediately upon finishing these kind of diet books, "Oh man, I'd like to tweak this. I'd like to tweak that. I wish I could update this, that or the other." What's been interesting about Sacred Cow is that it has only been validated more and more as time goes on, and I really kind of pat ourselves on the back for that. We went with the best information we had and then we did some speculation, because there simply wasn't information available. But again, this is where a little understanding of thermodynamic inputs and outputs and the way that fucking systems work, it gives you a pretty good insight. And as time has gone on, it's only vindicated the position that we've had.

Nicki: Okay. Well, I will link to this article in the show notes for those of you that want to check it out in its entirety.

Nicki: And as you all know, The Healthy Rebellion Radio is sponsored by our salty AF electrolyte company, LMNT. It is hot outside. As Robb said, it is summer. And if you're hiking or working in the summer heat, if it's humid where you are, make sure you're staying salty and getting all the electrolytes you need. Same goes for if you eat low carb or keto. If you're an athlete and you're training, if you have muscle cramps, if you're a breastfeeding mom, if you have pots, or even if you're just feeling a little tired and need a natural energy boost without the caffeine, LMNT is for you. You can buy three boxes and get the fourth box free at drinklmnt.com/Robb. That's drinklmnt.com/Robb. And in just a few short weeks, September, just around the corner, grapefruit salt will be back permanently. I know everybody's excited about that one.

Robb: It's almost as big a deal as the cat coming back.

Nicki: It almost is.

Robb: Yeah.

Nicki: Yeah, there were a lot of people commenting on the LMNT posts like, "Hallelujah, praise Jesus. My prayers have been answered. It's a miracle." So it's cool.

Nicki: Okay, we have three questions for you guys today. The first one is from David. He wants to know is caffeine harmful for long-term health? David says, "I recently quit caffeine. Initially, I felt awful, but over time have noticed an improvement in how I feel. My energy levels, mood, motivation, sleep quality, et cetera. My caffeine addicted friends are, I think, in denial and insist it's not necessary to quit. They point to studies showing health benefits of taking caffeine every day. Some even insist it's completely harmless in moderation, but I'm skeptical. Searching the internet, it's nearly impossible to find anything negative about long-term use of caffeine, and this makes me even more skeptical. How can this be the only addictive drug with zero or near zero side effects and no long-term impact on health? Did I give up my caffeine addiction for no good reason? Is there something I'm missing? What is the real story with caffeine? Is it a net benefit or net harm for most people? Have caffeine addicts found the holy grail of drugs or are they in denial? Help me understand this better."

Robb: Man, this is a good one. If you're really honest with the literature, coffee, tea, black tea, green tea, it seems to be beneficial consuming it. It's got antioxidants. It's probably a little bit of a hormetic stress inducer, which then causes you, one, to adapt to larger stressors later on and things like that. But there's no doubt... What's interesting about the caffeine consumption broadly is that I think that caffeine, ironically, is best consumed when one is well rested, not stressed, not harried. And that's exactly the opposite of the way that people consume it. Consume it when we are tired and depleted and run down and we're already one foot on the brake, one foot on the gas pedal, going as hard as we can, and then we throw this stimulant on top of it.

Robb: And very self-serving, but I would make the case that so many times, I know for my situation, so many times in the past when I felt like I needed some caffeine, I needed some electrolytes, specifically sodium, and I've really uncovered that of late. But I think that there are situations, particularly late day caffeine consumption, that can disturb sleep. People that are already just maxed out, caffeine is probably not doing them any favors, leading into this HPTA axis dysregulation.

Robb: For me, with my essential tremor, as much as I would like a nice bolt of caffeine in the morning, I have to really do it when I'm not really going to be interacting with people the rest of the day, like out in public. If I'm just putzing around the house, I can tremor myself away and not really have a problem. But if I have to go talk to people, even I have to think ahead, I'm like, "Oh, I'm going to have to go to the store and ask somebody about something," and I won't have any caffeine that day. Usually I'm down to a decaf coffee with maybe just a

dusting of real coffee in it or I'll do some black tea. The black tea doesn't seem to bother me quite the same way, and it might be because it has theanine in it, and theanine kind of goes into that GABA pathway and seems to mitigate some of the negative stimulatory effects of caffeine. So I think it depends. I do think by and large-

Nicki: So David says that he had a caffeine... "Did I give up my caffeine addiction?" Right? So we don't know what that means. I know there are some people that sit at work and drink cup after cup after cup of coffee a day. And I think one could reasonably say that that might be excessive.

Robb: Right.

Nicki: But if somebody's having a cup or two in the morning, far from sleep, it seems like the literature suggests that if anything, there's a longevity benefit.

Robb: For sure. And even decaf coffee and decaf teas seem to show benefits, neuroprotective benefits, cardiovascular benefits and whatnot.

Robb: When we were running our gym, we had large stovetop espresso makers, like the Italian style espresso makers, and Nicki and I would do four or five of those each a day. And we went cold turkey one time, and my God, it was rough. I felt awful. Nicki came home one day and I was on hands and knees looking at the carpet, looking at the-

Nicki: Just like hallucinating.

Robb: I was like auditory and visual hallucinations. So I had clearly gone to a spot that was maladaptive, that wasn't good for my health. So I think again, dose response curves and all that type of stuff.

Robb: I think a little bit about Peru and some of these places in South America where people have traditionally chewed coca leaves. So they're consuming cocaine oftentimes all day long, and there are no... It's not carcinogenic. Is it addictive? Yes. Nicotine mints and gum are addictive. And it also seems to have an upside for many people. It appears to be neuroprotective. Smokers have much lower rates of Parkinson's and Alzheimer's despite the fact that smoking is just horrible for you. It's one of the worst things you could possibly do. And there's this really suspicious decrease in Parkinson's and Alzheimer's among smokers, which makes the case, God, just do some gum or mints and then you alter the delivery system, and you may end up with a net benefit there. There's all kinds of benefits with nicotine for ulcerative colitis and Crohn's disease and stuff like that, these gut issues.

Robb: So yeah, all of these things can become addictive. And I've heard many people say, "Well, I just don't want to be addicted to something." It's like, okay, that's fine. I don't really get it. If your life is net, net made better, but you would go through a withdrawal period without it, I don't know.

Nicki: There's no direct... It's not directly impacting your health in some obvious way. For you, with essential tremor, you notice an obvious impact when you consume caffeine.

Robb: And even the nicotine, but it makes my digestion better and it helps with some other neurological characteristics, like the rheumatoid arthritis is improved with nicotine consumption, because it's got this anti-inflammatory effect, and it modulates the glucocorticoid receptor in the cells are that kind of specific to RA.

Robb: So there's just all these interesting trade-offs with this stuff, and it maybe gets a little hippie and naturalistic, but I think these substances that humans have co-evolved with...

Robb: Like the Dark Horse folks have made the case that safety-wise, and this gets really fucking controversial, like people will want my head on a pike, but they've made the case that opiates are probably the safer analgesic in many regards relative to a lot of these NSAIDs, because there's this kind of evolutionary basis to them. Now, are there all kinds of problems and are they addictive and are they... Oh my god, yes. But also when you really get in and look critically at NSAID use, it just makes cardiovascular disease skyrocket. And there are still absolutely applications for it. This is where people get... Like when my back used to go out, I either had a choice of being in abject agony for weeks until the thing righted itself, or I could get in and really aggressively do like 600, 800 milligrams of ibuprofen and maybe get out ahead of that thing and have two days of being laid up and then getting back to... and not being in constant pain.

Robb: I tell you what, laying on the floor in just horrible pain for two weeks, I think that took some time off my life. I'm stressed the fuck out and hurting and everything. So I think that that's where we have to really look at the cost benefit story with stuff like this critically. And I think it's highly individual, but then there's also this bigger population level story that some things like caffeine and nicotine, when administered in delivery systems that aren't themselves injurious, like tobacco, seems to have a benefit and an upside. And if it improves your quality of life and makes you a little more productive, but it's not burning the candle at both ends, then I'm hard-pressed to say that it's a problem.

Nicki: And you're not putting a lot of sugary condiments mixed in with it so that you're making it into a calorically dense sugar bomb, because that obviously has its negative effects also.

Robb: I forget about that because the-

Nicki: The midday Frappuccino.

Robb: It's like 200 grams of sugar.

Nicki: Yeah, yeah.

Robb: Yeah.

Nicki: Cool. That was a timely question, because we actually were speaking with our jiu-jitsu coach yesterday about this very topic, because his-

Robb: Parents are going through like a cleanse.

Nicki: ... parents are going through a cleanse, which is a no coffee... is part of that regimen apparently. And so we had a fun conversation about that yesterday.

Nicki: Okay, question number two is from Greg this week on testosterone replacement therapy. Greg writes, "I am a 64-year-old male. I work out five to six mornings a week and bike 25 to 30 miles a week. My natural testosterone levels average 650 to 800. I'm not on TRT, but do take several supplements including Tongkat ali. I've asked my friends who are on TRT what their plan is in the event of a major catastrophe, either manmade or natural. Of course they have none. What would happen to the millions of males dependent on their weekly or monthly TRT when none is available? What would you suggest as a backup plan?"

Robb: It's a really good question. Interesting question. Kind of timely. It just popped up in my newsfeed, but the raw materials to make tadalafil the Cialis erectile dysfunction drug, which is also used for benign prostate issues, it also seems to have a cardioprotective effect, so more and more people are using it as a means of improving endothelial function systemically. There's a major supply chain hiccup. There's no raw material, and the shit's being rationed. And how this happens in the 21st century, in 2023, that we're running out of raw materials for things is kind of like, what the fuck? How does this happen?

Nicki: And these materials are things that can be made in a lab? Are they-

Robb: They're typically synthesized in a lab, yeah.

Nicki: Okay. So it's just... Is it that demand has outstripped the capacity to produce the thing or you don't know?

Robb: I only went as deep as the headline and maybe the first paragraph, and so it probably explained it deeper and I just didn't take the time to go deep in it. But there are supply chain issues that could pop up and deal with this. And more broadly, this reminds me of the book that I read at a very poor timing, One Second After, which is the EMP pulse attack on the United States. And I started reading it immediately after getting done with the I, Caveman show, which when you get-

Nicki: So back in 2011.

Robb: Yeah. And you get off of these things where you are starved and sleep

deprived, and you're kind of crazy. You're a little crazy afterwards. And then I read this book where it's basically the end of the world as we know it. And one of the first story arcs that played out there is that the main protagonist, his daughter is a type 1 diabetic and he knows immediate... He was in the military. He knew immediately what had happened when the power went out. He's like, "Oh, shit, this was an EMP pulse." So he goes to the pharmacy and somewhat heavy handedly gets a good bit of the insulin that they have and brings it home. And the cops end up showing up there and he has to talk his way out of it. But he's basically like, "We had an EMP pulse. The world is going to change and this insulin isn't good if not refrigerated." And basically he ends up hoarding enough and keeps his daughter alive for three months and then they run out of the insulin and she dies.

Robb: So the type 1 diabetics have a month at best, and I don't know how many people are in that category. So if there was some sort of supply chain issue, an EMP pulse or something like that... One-

Nicki: Anybody in critical care emergency-

Robb: Anybody in critical care.

Nicki: In the emergency room.

Robb: You're talking about hours or a day, depending on the situation, they're all gone. Anybody that is dependent on insulin, you've got, at the outer edge, a month, because if you don't have refrigeration, the stuff doesn't last that long. Anybody who is 100% dependent on thyroid meds, they've got a limited window of time.

Robb: And the medical establishment is really kind of prickish about stockpiling this stuff. It's really, really hard to get six months of these things that are critical to life. And arguably the TRT isn't in that category, but this is a bigger problem. And particularly with...

Robb: If you buy into some of the Peter Zeihan stuff about de-globalization. And I forget what it would... The United States, and maybe somebody can fact check me on this, I don't believe we manufacture any antibiotics in the United States anymore. If we do, it's very, very little. They're all manufactured abroad and manufactured in places that we now clearly have antagonistic relationships with. Some of the places like China and stuff like that. And there's a little bit of mutually assured destruction there. I think the United States largely feeds China and China largely provides a bunch of our pharmaceutical and basic tech infrastructure, so if one pulse-

Nicki: And components to our wind turbines and electrical grid.

Robb: Yeah, but it's kind of like, "Okay, well, you guys fucked us over there so we're not going to feed you." And then all hell breaks loose. But it's really kind of

problematic for a lot of things.

Robb: And then on this TRT front, it is an interesting thing. One thing that folks can do is get non-trivial amounts of enclomiphene, which can be used to goose the endogenous production of testosterone. And that can work if somebody's been on TRT for a long time for whatever reason. Sometimes the Leydig cells have basically gone offline, and so it's not really going to work that well, but that is a way that somebody who's on standard TRT could maybe circumvent the complete downsides and just have the complete physical deterioration of essentially being chemically castrated if something like this happened. Enclomiphene blocks the ability of the brain to sense estrogen, and so it then causes the brain to ping the testes to produce more testosterone, which then cascades into estrogen. And so that's the way that that whole thing is maintained.

Robb: In my mind, if people are on the lower side of testosterone or just not feeling that great, I think the enclomiphene or the Tongkat ali, doing these interventions that are augmenting normal production makes a ton of sense for as long as you can before going on TRT. And then there are situations where people have suffered traumatic brain injury or testicular injury or hosts of different things, the TRT is what they have. But because testosterone is a scheduled item, you can't stockpile it. You basically are allowed to have about a month, month and a half supply and that's it, otherwise you're considered a drug dealer. So it's a thing. It's a legit thing.

Nicki: Well, to your point, it's bigger than just testosterone. If there was some sort of disaster, a major catastrophe, there's a lot of people that are going to be in a pickle.

Robb: A world of hurt with this. Yeah. Yeah.

Robb: So Greg, I mean, it's an interesting question. The best that I have is to punt the use of legitimate TRT as far and as long as one possibly can. One could do a cyclic thing like one month of TRT, one month of enclomiphene as a way of just trying to keep some testicular function. It's possible to obtain larger amounts of enclomiphene because it's not a scheduled substance. And so in theory, that could be something that folks use if and when they run out of testosterone, that they could potentially get at least a modest bump in their testosterone levels using the enclomiphene. But hopefully the world just doesn't head to this place, because it would be bad news for a lot of people really quickly.

Nicki: Yeah. Okay. Final question is from Rob Wolf on jiu-jitsu. "Robb Wolf, I'm another Rob Wolf, and I started training jiu-jitsu at age 64, and I just got my purple belt. I would love to learn more about how you train."

Robb: Man. So I started really consistently in 2012, and have had a couple of probably close to one year breaks within that, but now it's 11 years down range. Knocking on the door to a black belt.

Robb: One of the reasons that I really gravitated towards the Straight Blast Gym philosophy is instead of a very technique centric approach, "Here's a laundry list techniques," they tend to be very concept based, which I just learn better from. And I seem to get better faster with that. So I think that finding a school that kind of fits your mentality in that regard is really helpful.

Robb: I've been fortunate to have some coaches that really embraced the less is more minimum effective dose kind of philosophy. That's been super helpful. And so train when you can train. Don't go overboard.

Robb: I'm not really interested in competition. I think some people really need that extra bit of heightened stress and drama. Like Shawn Baker just loves competing and everything, and God bless the guy, but I also think the guy could be at ground zero of a nuclear blast and just walk away and not even be fazed by it. I am not that person.

Nicki: You're not that guy.

Robb: So there's that stuff. As time has gone on, I have shifted my training much, much more towards positional drilling. So I've really struggled with my open guard. And the last six months, eight months, more often than not, I certainly start kind of a sit up guard, open guard bottom, and have people pass. And maybe we do a full roll from there.

Robb: Or frequently, and oftentimes I do this with the larger, maybe a little bit spazzier white belts or maybe even blue belts, but when they start out-weighting me by 60 to 100 pounds and they're 20 years younger than I am, I want to train with these guys, but I want to do it in a way that's safe. And so what I'll do is say, "Okay, you're going to pass my guard. I'll either sweep or submit and we'll reset, or you'll get to cross sides or mount and then we reset." And it gives me an opportunity to get a shitload of reps.

Robb: And what I find is that it also, because we're not rolling necessarily to a full submission kind of scenario, I find that particularly these young kind of go-getter guys, they're not quite as intense. It's more of a game then, and it's collaborative. And oftentimes they're like, "Wow, that was a lot of fun. I never get to practice just passing guard on a brown belt or a black belt," or something like that. So it's great reps for them, great reps for me. And it's kept me safe. And I'm able to really modulate the volume and the intensity.

Robb: And I've been told this for ages, but I just now am starting to input this, but I go into training with a plan. Nicki, because she just got her purple belt, this is the next year she really wants to focus on sweeps. And so she just like everything's sweep related. She's kind of going deep on that.

Robb: And I think that having a core area of focus for a month, six months, a year... I know our coach, John Frankel, will kind of go in one year blocks where

he'll really have an area of emphasis. And it's not that you let everything else completely slide, but it's just you steward more of your training towards this one particular area, back, escapes or whatever that stuff is.

Robb: I do a good amount of peripheral zone 2 cardio. I do a little bit of strength training to kind of armor plate myself hopefully, and be more effective at aging. But I don't overly push the strength training, because in the past I've tweaked my back trying to squat and deadlift and everything. And so I've found movements that don't hurt me and I stick to that.

Nicki: Bulgarian split squats.

Robb: Bulgarian split squats and hip thrusts and stuff like that. And lo and behold, I'm reasonably strong and I don't get injured. So that's been something that took a long time to figure out.

Robb: I do a lot of ancillary mobility and stretching work, which has helped with my back and helps with recovery. I do a pretty thorough warmup. And the warmup is specific to me because of my back issues, so it's a lot of back mobility, hip mobility.

Robb: And when we get done rolling, probably 90% of the time I spend about 10 minutes stretching, and I do front and side split type stuff, and again, some back flexion extension work. I've been doing some shoulder work too because I've had a little bit of shoulder impingement. But where normally I could do another round or two of rolling, I will stop a little bit early and do mobility work. And my God, that just pays huge dividends. What it allows me to do is go back again and again and train instead of before, we would get done with our session, change clothes, you're hot, you go sit in the car, you do the 30 minute drive home, and then it feels like my body, literally, it's like Silly Putty that got put in the refrigerator. It just conforms to the shape of the car. And then lo and behold, my back hurts and it doesn't feel good. So that cool down mobility work has been huge.

Nicki: Joint work and CARs.

Robb: Joint prep, like FRC, CARs. The work that we get from Sarah and Grayson with Basis New York has been indispensable with this stuff. For any athlete, particularly the aging athlete, if you could find a good FRC practitioner and if you can find an FRC practitioner that does jiu-jitsu and/or trains people who do jiu-jitsu so that-

Nicki: And there are a lot of them.

Robb: ... so that you really of get it. And there a lot of them.

Nicki: Because a lot of the FRC folks are in the jiu-jitsu world.

Robb: Hunter, Doctor Kickass, I'm forgetting his name, but it's-

Nicki: Andreo Spina.

Robb: No.

Nicki: The founder of FRC.

Robb: Andreo Spina, he's a black belt too, but one of Henry's black belts, he goes by the name Doctor Kickass.

Nicki: Oh, yeah, Doctor Kickass.

Robb: He's a jiu-jitsu black belt and he's a doctor of physical therapy and he's an FRC stud too. So man, what else? Nutrition to support activity level.

Nicki: I think the biggest thing, and this is something that... One of the things I love about our school here in Kalispell is the noon hour, which is when we typically train. The average age is like 40.

Robb: 40. Yeah.

Nicki: So as an older practitioner of Brazilian jiu-jitsu, the goal should always be... And John Frankel says this, your goal any training session is to be able to come back tomorrow. So your goal is to learn but not get hurt, right? Not get hurt. So you need to be aware of your body and what your limitations are, and you need to choose training partners that are going to help facilitate your ability to show up again tomorrow. And that might mean not training with certain white belts or certain people that are more aggressive and more spastic because they're new or what have you.

Nicki: Robb's point about using these folks to do positional drilling in a way that you're not going to get hurt because it's very controlled and the parameters are very clear. We're going to reset when we get here. That can be a way to tackle it. But I think Robb here is, well, he started at 64 and he just got his purple, so he's closer to 70 at this point.

Robb: Call it 68, something like that.

Nicki: And so again, we're not spring chickens, and the goal is to be physically healthy so that you can continue to come back and do the thing that you really enjoy doing.

Robb: I think it was Steve Maxwell who was one of the early jiu-jitsu black belts in the United States. And this is just kind of a rule of thumb, but he made the case that 10, 15, 20 pounds are equal to a belt in jiu-jitsu, approximately a 10 pound, 20 pound weight difference. 10 years-

Nicki: Of youth of younger.

Robb: Of youth, is worth a belt.

Nicki: Youngerness isn't a word, but-

Robb: Yout.

Nicki: Yout.

Robb: So I'm 160, 165 pounds, and I'll roll with kids that are... I mean, Avery is like 245, 250.

Nicki: And 25, so he's.

Robb: And 25 years old.

Nicki: So he's 26 years younger than you.

Robb: And he is a fucking handful. And he's a four stripe white belt, so there's a lot of technical mistakes that I'm still able to capitalize on with him, but he is so strong and so fast. And one of the interesting things too is that a school like SPG that really does a legit foundations program, like everybody goes through 18 to 30 sessions of foundations where they're not live rolling yet. They do positional drilling, but they really go over basic technique, but they have great posture in the guard. They're not doing stupid stuff.

Nicki: Great limb awareness. They're not reaching out and giving you arms.

Robb: Yeah, they're not trying to bench press people off of them and stuff like that. And that makes a no stripe white belt at these gyms really a challenge. It's not an easy day. You're not just throwing an idiot into a den of carnivores and them getting crushed. They actually know, "Oh, keep your elbows to your sides and build wedges and frames. Don't try to bench people off of you," and stuff like that.

Robb: It's like, "Well, I'm a brown belt, I should be able to do better." And it's like, well, you do what you do. And the reality is that we've got a deep bench of coaching and people get better earlier all the time. The standards of the sport improve all the time because the coaching methodology improves.

Robb: And there is the internet, and for good or ill, you can get some decent insights from things like Henry's online courses and the Straight Blast Gym, International Straight Blast Gym University, and stuff like that. There's amazing material on there.

Nicki: I think one other thing I'd like you to touch on is pacing. I remember somebody asked... I think they asked when Frankel was visiting, "What can I do

as a white belt to improve?" Or, "What should I be focusing on?" And he said something like, "You should be able to breathe through your nose the whole time you're rolling."

Robb: Yeah.

Nicki: Because I think, as an older practitioner of Brazilian jiu-jitsu, you notice the contrast with newer people, but also different schools have different approaches, right? Different schools, they can be very competitive and it's fast. And the whole point of my rolling with you right now is to submit you and show that I'm the better BJJ player versus keeping a pace where you can breathe through your nose the whole time and you're feeling your opponent and you can do it without going balls to the wall.

Robb: It's a great thing. And several people to acknowledge on this. John Boone, who's one of our dear friends and coaches, we've been going to his ADM class recently. He just spun that back up, and it's been wonderful. And he has been doing a number of drilling scenarios where he wants at least one side of the equation to keep their eyes closed to just feel. And when you do that, the person feeding needs to give energy in a way that's not taking advantage of the fact that the person's not looking. So we've been doing some open guard work and he's like, "You can't disengage and run around them and stuff because that's silly. It's got to be pressure." But just relaxing into feeling where people are, it opens up so many different things, because then you...

Robb: What you start finding, and I've done this for quite some time, when I get buried under a heavy mount, I just close my eyes, because I just want to feel exactly where the person is, because that's the only way I'm going to get out. I'm not going to be able to bench press them off. I'm not going to be able to hydraulic lift, get my hips under. It's going to be like a pinpoint timing moment to be able to either just survive or to actually escape. So closing your eyes and relaxing there.

Robb: And then one of the Portland coaches, Cain Privos, for ages, you'll tell people, slow down, relax. But I'd never had a good benchmark for that. And Cain had this great observation, which was basically your breathing. Your breathing is a direct reflection of the total work output that you're doing. I was like, "Fuck, that should've been obvious." But John Frankel likes to say everything in jiu-jitsu is obvious after you've seen it. But Cain made this point that breathing is really the objective measure of your work output. And this is something that I've been doing, like I'll roll with other black belts, other brown belts, and if they're same size or larger, my goal is basically just to not be breathing as hard as they are. And they may catch me in something, but if they need to then go sit down in between rounds, which not infrequently happens, particularly with new black belts from other schools that are used to a really high pace, then in my head it's like, "Oh, I won that."

Nicki: Because you could've kept going for another 10 minutes.

Robb: Because I could've kept going for another 10 minutes, and there's no way they could have maintained that pace for 10 minutes or 15 minutes or 20 minutes. And so that pacing and the breathing... And it's something that I will remind my partners, I'm like, "Dude, you're breathing way too hard. You got to slow down." And I will just tell them, or I'll ask them questions, "Do you feel in danger rolling with me?"

Robb: And they're like, "No, you're super safe."

Robb: I'm like, "Okay, then slow down, because I feel in danger from you. Your elbows are flailing around, your knees are flailing around. I don't want to catch one in the eye. I know you don't want to hurt me. And also if I get you in something, I'm not going to rip into it. I'm not going to take your arm off. I'm going to apply it real slowly. You'll get a chance to tap, or you'll get a chance to get out. But we got to slow down and then you'll start feeling things."

Robb: So I do something crazy too, I just communicate with people a lot, and some people are more open to that than not, but the people that are open to it become my consistent training partners. And I tell you what, one thing that I've noticed, whether it's men or women at our gym, they love training with me because I'm good enough that I can give anybody a good run for their money, but because I'm there for the training experience... I mean, I literally, it's like I'm the chick that everybody wants to dance with in class because I have good jiu-jitsu, but I'm safe and I'm respectful.

Nicki: All the ladies love rolling with Robb.

Robb: They do. They do. Other than Nicki, because I'm kind of a dick to her, because-

Nicki: You are a dick to me.

Robb: I'm definitely meaner to you than anybody else in the gym, for sure, but it's all done with love.

Nicki: Mm-hmm.

Robb: Yeah, I mean, so a lot of communication.

Nicki: I just think that that's a really, really important thing, framework, to have for yourself, but also to try to impart to your community, your training community, because then people feel safer, they learn more, they show up the next day, they're not injured. All of the things that you want. Unless you have some goal of winning Worlds at 70 or something like where you need to be doing more competitive oriented matches.

Robb: Even then, what's interesting, when you look at the best people in the

world, Mikey Musumeci, I'm mispronouncing his name, Gordon Ryan. People will see training video. They'll train four or five hours a day, sometimes more than that, and they train at a really slow, mellow pace. Mainly. They do some conditioning. They do some harder rounds here and there as they get ready for competition, but the bulk of the training is done.

Robb: If you could go either 100% or 40%, they're usually going 40%, because so long as everybody agrees to go 40%, it's still real jiu-jitsu. It becomes not really real jiu-jitsu if I'm going 40%, you're going 40%, and then I go 80% to get out of something that you're doing. If I am able to get out of your arm bar attempt or whatever, going 40%, but I've got better timing versus just going faster, then that's good jiu-jitsu, and that will translate to doing that at a higher speed. So there's all these great benefits to it, because you can get so much more volume. You don't go into an anaerobic mode where there's fight or flight. You think about your first CrossFit workout doing Fran or something like that where you're like, "I don't even remember anything." And it's because your brain literally shuts off. You go and you do all of this technique work in the standard class, and then you do your open rolling, and you immediately go anaerobic and you're in this lactate hell, and you are literally just overriding everything that you did technique-wise with whatever your A game is, which is usually just attributes, just strength and spazzitude.

Nicki: Which fade with age.

Robb: Which fade with age. And if you build a game around that, every five or 10 years, you're going to have to completely rejigger it or you're going to have to quit, which is what a lot of people do.

Nicki: End up doing. Okay, final thing that I think you should touch on is just training in a way that preserves your physicality. So you don't do much inverted work and you don't have a grip intensive game. Two things that tend to fail on jiu-jitsu players later in life, is terrible knuckles, terrible... hands hurt because they're taping their fingers and have a really grip intensive game. And then also neck issues from-

Robb: Inverting.

Nicki: ... inverting.

Robb: Yeah. I never really inverted much, and I just saw the orthopedic limitations of that really early on getting stacked. This also extends to, I don't do very many traditional arm bars or triangles from close guard. I do a lot of other stuff from close guard where I can't get stacked. If somebody really throws me an Easter egg and it's like, "Okay, I can't not pass this up," then I'll do it. But both of those things, not only do they lend themselves to getting reversed, like if you fuck up your arm bar attempt from close guard, all of a sudden you're mounted or in side control, so I'm really conservative with that.

Robb: But the berimbolo and the rolling to get under people, some people do it, but God, there's a lot of people. I don't know anybody personally who's done that at a high level who doesn't have neck issues now, and just laundry list of that stuff. And then on the grips, we mainly train in the gi, but the only time that I use the gi is to choke people. And John Boone has a great, great line, which is, "Grips are to kill, not to control." And so John Boone has a beautiful game of... It just looks like wrestling, overhooks, underhooks, wrist grabs.

Nicki: Seat clamps.

Robb: Seat clamps. And he's not grabbing pants, he's not grabbing sleeves and collars. Only to choke you with. He's not using that to control you.

Nicki: I feel like that's pretty widespread throughout SBG.

Robb: SBG. It's more common. Yeah.

Nicki: And Travis coaches, teaches that way. Frankel. Don't rely on grips because at some point they fail. And there's a great... People rip out of it. There's high likelihood of injury.

Robb: Right. Right. And there are ways of doing a light grip game, like if you like spider guard and stuff like that, you just don't insist on... If the person wants to disengage, you just let it go instead of insisting that you're going to hang onto that grip. But that's been huge for me. I've had a lot of friends who... I do Portal. He and I chat every once in a while, and he was like, "Yeah, I like jiu-jitsu, but it's going to ruin your hands, man."

Robb: And I'm like, "Why don't..."

Robb: And he said, "Unless you just do NoGi."

Robb: And I'm like, "Why don't you just do a NoGi game while wearing the gi?"

Robb: He was like, "Huh, that's a good notion."

Robb: But yeah, that's a great point, because people will ruin their hands. And the irony is that your jiu-jitsu, honestly, for the most part, is going to be better over the long term anyway. Again, if you insist on being a super high level competitor, yeah, you're going to probably hang on to pants and collars and stuff like that. It's going to be a shit fight for every little bit. But this also, this is where I kind of question why are you competing? And make sure you're clear about it, because goddamn, it raises the stakes.

Robb: Everybody in our family who has competed has gotten injured competing, from kids to adults. And so I'm not saying don't do it, but just be clear about the risk reward thing, because if you compete, I am of the opinion, go in there to compete. Be serious, and take it serious. But the other person's going to do that

too, and it raises the stakes a lot.

Nicki: Well, Rob Wolf-

Robb: Good feed too. Thank you.

Nicki: Rob Wolf with one B, thank you for the question.

Robb: Yeah. Yeah.

Nicki: Robb Wolf with two Bs, thank you for the answers. Sorry to anybody who's not into jiu-jitsu and you just had to listen to a 20 minute-

Robb: Oh, they could have turned it off too.

Nicki: All the things. They probably did. Yeah. Well, then apologize for... Yeah. Anyway, that wraps up our third question for the week. Any other closing thoughts?

Robb: I don't think so. I don't think so.

Nicki: All right. Thanks everyone for joining us yet again. Please check out our show sponsor, LMNT, for all of your electrolyte needs. You can grab them at drinklmnt.com/robb. That's drinklmnt.com/robb. Pray for us as we continue to pack and enter this phase of moving chaos. And we will see you. We should be... Yep, we will do one for next week. It's the week after that that we'll probably not have an episode. But anyway, I hope you all have a fabulous weekend and we'll see you next time.

Robb: Bye, everybody.

Nicki: Bye.