

Robb: We are going now. Hey folks, welcome back to the Healthy Rebellion Radio. Wife, how are you doing today?

Nicki: I'm okay. I'm okay.

Robb: Your back is a little glassy?

Nicki: My back is a little glassy.

Robb: What's going on with that?

Nicki: I think just traveling and sleeping in different beds.

Robb: Our youngest has had a series of nightmares and so we've been taking turns racking out with her. And, yeah.

Nicki: And just sitting in the plane, and just kind of post travel stuff.

Robb: And three months of no jujitsu and then one day of getting smashed.

Nicki: But that was fun. I'm so glad we did that.

Robb: Yeah, yeah.

Nicki: I needed that. Let's see here, you have our weekly news topic.

Robb: The news topic du jour. So, this one is kind of shifting gears more into the regenerative ag story. It's from Mother Jones and it's talking about an outfit in... It's called Polk's Folly Farm in East Mountains of New Mexico.

Robb: And these guys inherited a 40 acre farm from their grandmother and decided to run with pigs. And over the course of time, they figured out that if they could get locally sourced, lightly expired food from restaurants and grocery stores and whatnot, that it basically displaced the total amount of GMO grains and soy that they were historically feeding their pigs. The pigs got healthier, the meat tasted better. This small operation ends up reducing the landfill waste by like 75,000 pounds of food waste per year.

Nicki: Wow.

Robb: And something that's interesting in that story, and like the methane gas release from different things like fermenting and breaking down, is kind of a tough thing to get your arms around. But there's a pretty good case to be made that this food, instead of it going in the ground and producing methane, when it's fed to the pigs, it just makes pig, it doesn't really produce the methane. So, they're not fermentive organisms the way that say like cattle and goats and stuff like that are.

Robb: So, it's interesting. Most developing countries, practices like this, where you put food waste back into the food production system is part and parcel with what they do. In most places in the United States, it's largely illegal. It's very difficult to get done. There's really no infrastructure forward. It's not really on people's minds.

Robb: And so this is another really important piece of the food production story. About 50% of the food that's produced in the United States gets landfilled, and the bulk of it could be repurposed into feeding other animals like pigs and chickens.

Nicki: Or even people. I remember reading an article about this, where most of the produce, if it's slightly wilted or the carrot has an extra knob, or it's not the standard beautiful like long carrot. Maybe it has like a second limb sticking out.

Robb: So, what these guys do is they sort the food first. And they said that actually the bulk of what they get is still totally appropriate for human consumption, and they distribute it to food banks and stuff like that first.

Nicki: Gotcha.

Robb: And so on the economic side, the interviewer asked, is this a net win for these guys? They're like, well we get it for free, but there's the time, and the sorting and all that other stuff. But it's really endeared these guys to the local community, and they've done amazing work with the local food banks and stuff like that.

Robb: So, it's just something as we move forward and as we have opportunities to put things on local ballots, like is it kosher for somebody to have a small scale farm somewhere in our community? There was a time when that was normal and our food didn't come from thousands of miles away.

Robb: And so if we want the world to change, some shit's going to have to change. You can't just stick all of this stuff out away and expect it to function anything other than the way it is currently. Now I can't say that I would be super excited about a poorly run operation like this. But when you check out Polyface Farms, or the pictures and the video that you see from these guys, it looks amazing. It's not dirty. They grow vegetables on all of the... They move the pigs around. And so one season, they're in one location, and then they plant on that the next season.

Robb: So, it's a really cool biodynamic system that could go on forever. And this is kind of one of my points that I make, is a sustainable system needs to be one that if we came back a thousand years from now, that same operation could still be working.

Nicki: And now what's the legal issue currently? It's just like the health department is afraid that if you take a blemished carrot, or these... That it's dangerous in some way?

Robb: Lots of layers to it. And I'm not super well steeped on it. But it's illegal oftentimes for grocery stores to do much of anything other than landfill their blemished fruits and vegetables, they're expired bread, and pastry products and stuff like that. There's just lots and lots of things where the legalities make this difficult or impossible. And sometimes people break the law to do this and it's kind of ridiculous.

Robb: But these are the types of things. People are looking for solutions to climate change and food security. The place that we're going to have the greatest impact on this is at the local level. Because ideally every small community has something like this going on, or multiple iterations of something like this going on.

Robb: We live in New Braunfels, it doesn't really make sense to collect all the food here and then ship it somewhere else, like do that stuff locally. And there will be some places that it doesn't work as well. But if we really put our perspective back towards what's going to

be functional at the local level, and we will need to lean on people to be open to changing some elements of like homeowners associations, and zoning and stuff like that. Our zoning laws have made it really difficult to do these mixed use scenarios.

Robb: So, these are things that we're going to have to think about and get educated on and kind of weigh the cost-benefit story over time.

Nicki: Nice.

Robb: Cool.

Nicki: All righty. Let's see.

Robb: And we have a link to that in the show notes.

Nicki: Yes.

Robb: It's really a beautifully written piece.

Nicki: Yeah, and the title is great. It's Garbage In, Bacon Out. So, that's a good title. Let's see our podcast review T-shirt winner announcement of the week. We've got a review from, BB1luv, L-U-V. He says, or she, "Will exceed 1 million. Count me in that first million. Robb, you changed my life years ago and continue to do so. Listen up peeps, this is your life. Get healthy and help end big food desertification. Real people, real health in real time."

Robb: That's a darned good review.

Nicki: That's a good one. Yep. So, BB1luv, thank you for your review. Shoot us an email to hello@RobbWolf.com, send us your T-shirt size, and your mailing address, and we'll send you one of our Healthy Rebellion Radio T-shirts.

Robb: And once you get a T-shirt, send us a photo.

Nicki: Yeah.

Robb: Pimp that thing.

Nicki: That's right. And let's see here, this episode of the Healthy Rebellion Radio is sponsored by Perfect Keto. Perfect Keto makes it easy to dial in your low carb lifestyle with a whole suite of keto bars, nut butters, trail mix, MCT oil powders. And the best part is that Perfect Keto products are super clean. They don't contain any soy, dairy, gluten, artificial sweeteners, binding agents or anything that doesn't directly improve your health. And Robb, you have a favorite chocolate sea salt.

Robb: I'm pretty partial to the... Yeah, caramel sea salt is amazing.

Nicki: Caramel sea salt, okay.

Robb: And then they have-

Nicki: -It's an MCT oil powder, that you use, and you mix it with your coffee.

Robb: I'll throw it in my coffee. Yeah, it's amazing. Yeah, it's really good. And the powder is more forgiving from kind of like the GI distress perspective.

Nicki: Versus an oil.

Robb: Versus an oil. Although one time, you were at jujitsu with me when I did this, I was really hungry and we had a pretty spicy session ahead of us, and they did about double what I normally do, and I was not in good shape on that.

Robb: So, stay within the recommended dosing guidelines and you'll be fine. But yeah, it tastes amazing. Mixes really well. And there are some great products out in the world, but these guys really did take the extra effort of not putting different gums and emulsifiers and things like that, that can cause GI problems in folks. So, they really put some thought into the way that they formulate these things.

Nicki: And you'll use this sometimes even making a little... You call it a muscle mocha for the kids, right? You'll put a little bit in there.

Robb: Yep. And they love it. Yep, yeah.

Nicki: And even if... I remember Zoe slipped and hit her head on the floor. We've had a couple of little like head issues.

Robb: Trauma issues, yeah.

Nicki: And so that's when we'll pull out this for the kids as well. And it tastes really good.

Robb: And I do a decaf coffee with that. Little bit of antioxidants, and then I'll throw in the... Either one, the salted caramel or the chocolate tend to be the favorites with the girls. They have another one that has some collagen powder in it too. That one's a great option, if you want to do that. But yeah, the girls love it.

Nicki: So, you can check them out a PerfectKeto.com/Rebellion10. And if you use code Rebellion10, you'll get \$10 off your order of \$40 or more.

Robb: Cool.

Nicki: Let's see. It's not a live call. It's our regular Q&A.

Robb: Easy day.

Nicki: Easy day.

Robb: Yeah, easy day.

Nicki: Okay, we don't have the pressure of like the...

Robb: Not totally screwing it up. Although, we managed to screw this up.

Nicki: Failed internet connections and all sorts of things that can go wrong in the live call. All right, our first question for this week's episode is from Adrian. He has a question about fueling early morning high intensity training, and riding on a 30 day reset.

Nicki: "Robb, we met once at a talk you did in San Francisco back in 2016. First, loved Wired to Eat. I've read it three times already. And second, the wife and I are three days into the 30 day reset. Third, my question, it's a nuance around fueling HIIT workouts during these 30 days. I'm a cyclist training pretty hard for some summer mountain and road bike races. Weekday sufferfest workouts are generally 4:45 AM or 5:00 AM, and last anywhere from 45 to 90 minutes. I'm burning anywhere from 600 to 1200 calories measured via a CycleOps power meter and I'm about 170 pounds."

Nicki: "Given the time of day, I don't really get to eat beforehand, but powering above threshold work is obviously tough to sustain as a result. For the 30 day reset, how would you tackle this? Is it enough to eat 50 to 100 grams of paleo carbs at dinner? And would that give me enough muscle glycogen for the morning, or would you also eat 25 to 50 grams after the workout too? Thanks again."

Robb: Yeah, I mean if this is more or less daily training or pretty frequent training, I would be way more aggressive in kind of replenishing muscle glycogen. I could make the case to do more the 100 plus grams of carbs immediately post-workout, and then just kind of tinker with what to eat. If you were to partition them one way or the other, I would partition them more post-workout than immediately before bed.

Robb: But again, this is just stuff that folks have to tinker with a little bit. But also mixed into the 30 day reset, these things are always important to keep in mind what's your goal? So, what is the goal of the reset? And if the primary goal is to just get ready for this. Being prepared for this training block, so that he can perform well a little bit down the road, then the 30 day reset is kind of a passenger in this process, versus if the goal is leaning out or something like that.

Robb: So, it sounds like performance is the focus, so we want to fuel appropriate to the performance. A question a little bit later we're going to talk a little bit about, and provide a reference for the case for making about 80% of your kind of conditioning activity be more aerobic based. And so that's a whole other thing. But think about when and where you need aerobic based training versus interval training.

Robb: The interval training is usually for like putting the point on the spear. And as great as CrossFit and stuff like that it is, I think that people had overly relied on that, and can burn themselves out. And fasted early morning training, probably losing an hour or an hour and a half asleep. Like man, stuff like this is just a recipe for kind of burning yourself out. So, at a minimum, make sure that you're fueling adequately to make that work. Yeah.

Nicki: And if this is a block of time where he's... Like you said, he has this performance goal, maybe now is not the perfect time to do the 30 day reset.

Robb: Exactly, yeah.

Nicki: Maybe focus on the performance if that's your primary goal, and then pick up the 30 day reset when you're in more of a maintenance phase.

Robb: Somewhere down the road, yeah. Yeah, yeah. Or we need to really orient the reset in a way that it supports the performance. People, probably the biggest... I don't know about the biggest. But a really common problem that folks experience is they've got a basket of goals, and they haven't delineated what the singular goal is. And oftentimes we can achieve more than one end, but it's really helpful to have one specific thing we're

shooting for, and then we understand where we are, and then we can engineer a map to get there.

Robb: And sometimes along the way we can pick up some other stuff that are kind of secondary and tertiary goals. Sometimes not. Sometimes they're working at complete opposition to one another. And so, it's important to be crystal clear about what exactly is it that you're trying to do. Yeah.

Nicki: Good. Our next question is from Amy on elevated urine, creatine levels.

Robb: Creatinine.

Nicki: Creatinine.

Robb: Well, she put creatinine.

Nicki: She wrote creatine.

Robb: Creatine, yeah. Yeah, yeah.

Nicki: Creatinine, okay. "Hi Robb. I've been listening to for years and I know you've discussed this issue in the past. Will high protein cause kidney damage? I know the answer is no, but I hope you can help answer my question. My urine creatinine levels continue to be elevated, but my blood creatinine levels are within range. I have never had any issues with my kidneys, UTIs, kidney stones, et cetera. I basically eat whole and processed foods 90% of the time. I eat three meals a day, roughly 100 to 120 grams of protein per day via animal sources. I'm a 45 year old female, five foot seven and weigh 120 pounds. My doctor stated I'm eating way too much protein, which is causing my elevated levels. Would you consider solely elevated urine creatinine to be a problem? I eat about 2,000 to 2,400 calories a day and I'm still on the border of being underweight, so I really hate to decrease my protein at this point if it is not necessary."

Robb: Yeah, so it would be helpful to know like how far out of range is it? Is it just north of normal? Or is it like three times normal range? So, knowing that. I would assume we see this all the time where people are just a skosh outside of normal. And what's problematic here is so many people are coming through the front door of doctors and hospitals and they're diabetic, prediabetic, they're starting to experience kidney disease, and so elevated creatinine levels are really concerning in that context. Although, restricting protein in those scenarios is kind of a damned if you do, damned if you don't kind of proposition, and there's probably better ways of dealing with it.

Robb: But in general, eating more protein will elevate creatinine levels. Active people who maintain more muscle mass tend to have elevated creatinine levels. You just have more of a turnover on that. So, again, with the caveat that we're not talking about this being like six times normal values or something like that, then I really would be hard pressed to see this being a problem. And it's a really common thing that pops up, where a fit athletic population can have a biomarker or two that looks a little bit aberrant and could nest under what we would normally associate with like metabolic syndrome and stuff like that. But it's not the same animal at all. Yeah.

Nicki: Okay. Let's see. We have a question from Allie on keto versus low carb energy source. "Hi, if you are eating very low carb on a continuous basis and you are not in ketosis, what is fueling your body? As an example, if you're eating about 50 grams of carbs per

day, right above the normal benchmark for keto, will your body still be able to use carbs as a primary fuel source? Is there a gradation before ketosis or will you perpetually be low energy if you continue to eat low carb without going into ketosis? I'm dabbling with low carb, high fat. I'm eating very low carb, high fat, and not tracking based on historical disordered eating patterns related to tracking, so I'm worried that my low carb eating could not be productive if I'm not entering into ketosis. Thank you, I look forward to all of your Q&A episodes."

Robb: Yeah, great. Really good question. And I'll be honest, this was something that I struggled with, I guess understanding it or kind of the clinical implementation. And talking to Tyler and Luiz, seeing what their recommendations were. And then when I had RD Dikeman on the Paleo Solution Podcast, and we talked about the Bernstein diabetes solution. What's really interesting about that, you can't eat for an extended period of time, more than about 35, maybe 40% of your calories from protein. So, you do hit kind of a protein limit. We need other cofactors, either fat or carbohydrate to be able to deal with the urea load that is produced as a byproduct of protein breakdown. So, one way or the other, you've got to eat either fat or carbs or a combination of the two that that amounts to kind of more than 40, or the 60% approximately, 60, 70%.

Robb: So, what was interesting to discover about the Bernstein approach is that it's quite high protein, and this is a little bit reminiscent even of the carnivore scene. But what they're trying to do is rely on hepatic glucose production from protein breakdown, which in keto land terrifies people. Just puts them into fits. But what's interesting is within these groups, like the Bernstein diabetes approach, if you're in ketosis, that's fine. It probably provides some buffer against like hypoglycemic events and stuff like that, but they're not steering the boat specifically towards ketosis.

Robb: And this is a little bit challenging here because again, we don't know what the specific goal is. Is the goal leaning out? Is the goal just trying to find a way of eating in which kind of disordered patterns don't re-emerge, of trying to reacquaint oneself with a way of eating that that is more natural. So, absent a stated goal, it's a little bit hard to know what's going on here. But folks can and will be in a mild state of ketosis at a really remarkably wide variety of carbohydrate and protein intakes, particularly if there's exercise or a little bit of intermittent fasting or time restricted eating.

Robb: So, I wouldn't get wrapped around the axle of specifically needing to be high fat in this story. For body composition, for satiety, for nutrient density, being on the higher protein side is really beneficial. And I wouldn't also freak out about potentially overeating protein. You will not naturally do that. You will naturally steer towards either fat or carbs additionally, to kind of keep you out of that rough patch potentially. But again, this is where like understanding the person's goals and what they're orienting towards would be really helpful for getting some decent advice in here.

Nicki: Okay. Let's see here. Our next question is from Mark on blood sugar peaks. "Hey, Robb, I'm 41 years old and I've been on a strict paleo diet for two years, ever since I discovered you on Joe Rogan and read Wired to Eat. Recently I've been doing some carb tolerance tests with about 75 grams of carbs in different forms, and I'm confused about the results. It doesn't seem to make a difference if it's bananas, honey, potato or high fructose corn syrup, my blood glucose will always be around 110 at the two hour mark."

Nicki: "But I've noticed that it peaks around 200 at about 30 minutes, and at one hour, it will be around 140. What does this mean? Is this insulin resistance? Fasting glucose is always 100 in the early morning, but it will be around 85 later in the day. I never checked blood

glucose before changing my diet, so I have no idea if I was prediabetic or not. Obviously, I should avoid these crazy high amounts of carbs, but I'm wondering if my response indicates a problem? Thanks, Mark in Billings, Montana."

Robb: I don't really see a problem here. I think that Mark's probably just doing a little bit more carb in a single feeding then really what he needs.

Nicki: Well, he's doing the seven day carb test. Carb tolerance test, which is-

Robb: Exactly. The way that I recommend doing the test, it's 50 grams as a beginning. And then if your numbers are not quite what we would like, then you would cut that in half.

Nicki: But at the two hour mark, 110 is totally fine.

Robb: At the two hour mark, he looks pretty good. Actually, he looks pretty insulin sensitive. That 200 level is a little concerning for me, even though it's a transitional piece. There was some mitigating strategy...

Robb: So, to really answer the question, I don't think that there's anything really amiss going on here. I think he's probably reasonably insulin sensitive. He's probably not significantly overweight or anything like that. I do think that there's a case to be made for partitioning the carbs, maybe a little bit smaller aliquants of it. Maybe post workout if you're going to do something larger like this. But I don't really see anything overtly amiss.

Robb: But I do think over time, like Peter Attia makes a pretty good case around this also, that it might be smart to pick amounts because it sounded like the type isn't really changing what's happening.

Nicki: Yeah. Regardless of the type, he's had the same response. So, it's not like...

Robb: Pretty similar responses. Yeah.

Nicki: Yep, yep.

Robb: So, I would just kind of steer things more towards maybe a smaller amount, or change the timing like post-workout or something like that. Yeah.

Nicki: So, and then now that he's... Assuming he's finished with the carb testing and he's going back to eating normally, like just... Like you said, post-workout, keep them smaller and go from there.

Robb: Yep. Yep, yep.

Nicki: Okay. Mark, thank you for your question. Our last question for this week is from Tom on insulin resistance and high intensity exercise.

Nicki: "Hi Robb and Nicki, thanks guys for all you've done for the ancestral functional health movement. It's been inspirational and incredibly helpful for me personally. During the last podcast, I heard you mentioned a link between insulin resistance and poor tolerance to high intensity exercise. I've got both and I've never connected the two. I quit high intensity exercise five years ago as I got sick for one to two days after every

high intensity interval training class, gray pallor, dark circles under my eyes, bitter taste in my mouth, like a two day hangover. Can you say a bit more about this connection please? I'm now keto, and wondering if I'd be able to introduce some cardio again. Thanks for all your advice, Tom in Newcastle, in the U.K."

Robb: So, there's a great talk from Dr. Stephen Seiler, and there's some interesting history around this guy, like early, early, early CrossFit, like 2000 2001, coach Greg Glassman referenced this guy a lot. And Stephen Seiler is a professor of exercise physiology, I believe he's an American guy, but he was living in Norway, I think running their rowing programs. So, very well steeped in intervals and aerobic training and just a super smart guy, and I'll actually track down the link to that article called Understanding Intervals, and stick that in here as well.

Robb: But in the show notes, we linked to a TED Talk that he gave, and he makes the case that 80% of your training should be at less than 80% intensity. So, not high intensity interval training. And in his Understanding Intervals talk, he makes the case that interval training can bring people to a very high level of relative conditioning and fitness. But there's a narrow window of time to use that. It's literally for like putting the final edge on the weapon. And your aerobic based training is what you need to do the vast majority of the time.

Robb: And he cited some studies where the East German rowing team, I think this was maybe late '60s, early '70s, were doing all intervals all the time. And they had some success, but they had massive burnout. People were blown up pretty quickly with this. And it took them about five years, but then they largely abandoned that approach, shifted to a much more volume centric approach, but with a much reduced intensity. And then they would just use intervals for bringing people to that peak of performance. And the talk is really good. We'll link to that Understanding Intervals article. But again, CrossFit has been so cool because it's puts so much interesting stuff on the map for people, but at the same time everybody thinks that you have to be dying.

Nicki: It's every day is a blood bath.

Robb: Yeah, every day is a blood bath.

Nicki: A hundred percent effort.

Robb: And not only... There are some people out there that will survive that, like these people that are winning the CrossFit games, they're just a couple of standard deviations outside the norm, and they either do well or thrive or survive that experience. But most people don't.

Robb: So, the question was can you reintroduce some cardio again? Absolutely. But it's not...

Nicki: It's not HIIT, yeah.

Robb: 80% of your training needs to be more about 80% of your relative intensity. That Maffetone pace type work, 140, 150 beats per minute, mixing up the modalities. If you just want to keep the stimulus fresh, that stuff is great for kind of ramping up your parasympathetic nervous system and kind of de-stressing you. Whereas a high intensity interval session, it's a major stress. And again, it's a very... It's a great tool, but you can't overuse that tool or you're going to suffer pretty deleterious consequences.

Nicki: Awesome. Well, Tom, add some cardio back, stay under 80%.

Robb: Just don't go crazy.

Nicki: And then let us know how you do. Let's see-

Robb: Is that it?

Nicki: That was our last question, wasn't it? Wow.

Robb: That was a quickie.

Nicki: That was a quickie. Thank you, guys. What else?

Robb: If you guys enjoy the show, share this with folks.

Nicki: Share the episode. If there's a question in here that helped you, or if it made you think of somebody, share the episode with them and help spread the word about the Healthy Rebellion Radio. Leave us a review and subscribe and maybe we'll read your review, and you can grab one of our snazzy Healthy Rebellion Radio T-shirts.

Nicki: And then be sure to check out our show's sponsor, Perfect Keto. You can go to PerfectKeto.com/Rebellion10, and use code Rebellion10 to get \$10 off your order of \$40 or more.

Nicki: And finally-

Robb: Come join us over at the Healthy Rebellion.

Nicki: Come join us in the Healthy Rebellion. Yep. You can go to Join.TheHealthyRebellion.com. There's lots of great conversations going on in there. Really great community. Just couldn't be happier with the folks that we've got over there.

Robb: Absolutely. It's been awesome. Yeah.

Nicki: Yeah. Thanks guys. We'll see you next week.

Robb: Take care. Bye-bye.