

Episode 104

- Robb Wolf: Hey, folks. Robb Wolf here, Greg Everett in attendance. This is The Paleo Solution Podcast Episode 104, which means we've been doing this thing for two years. Greg, what is crackin'?
- Greg Everett: Oh, man, just starting off my Friday, and this is probably going to be the high point.
- Robb Wolf: Wow! I'm sorry.
- Greg Everett: Yeah. Well, we can't win all of them.
- Robb Wolf: I always feel guilty when I ping Greg and I'm like, "Are you ready for another podcast?" and he is like, "Yes, yes. I guess I'll do it. For the love of God, just leave me alone. Let me have my life."
- Greg Everett: Well, actually, it's a little off. We've had a two-week break so I'm hoping I remember how to read.
- Robb Wolf: Well, we just make all this stuff up anyway so I guess it doesn't really matter too much in that regard.
- Greg Everett: No.
- Robb Wolf: Anything new? Anything exciting?
- Greg Everett: No. I had a meet last weekend. A little of a mixed bag in terms of results, but I had some couple of really good performances and some couple that I'd like to forget. So I'd say that they all came out pretty neutral.
- Robb Wolf: Nice. So it was a pH of 7 basically at this meet.
- Greg Everett: Yeah, exactly.
- Robb Wolf: So now, did you lift in this meet or were you coaching or what was the deal?
- Greg Everett: No, I don't lift weights.
- Robb Wolf: Okay.

Greg Everett: Yeah. We had some of our team go, just like maybe six people I think. American is coming in up December and so this was kind of a tune-up for one or two of them, and then I was at a local meet for some of our lifters who weren't quite at the national level yet.

Robb Wolf: Sweet. Cool. I'm a national level sitter at this point. Yeah, it's my claim to fame right now.

Greg Everett: A sport has to make you happy, Robb, and if sitting does that for you, then far be it for me to talk you out of it.

Robb Wolf: Okay.

Greg Everett: All right. So before this goes entirely downhill, we should probably start on the question.

Robb Wolf: And The Paleo Solution Podcast ended at 104 episodes.

Greg Everett: We probably just said to everybody to just be lazy assholes and do nothing. It's two years, man. You're tired. And it's only been 34 episodes for me so I don't have an excuse.

Robb Wolf: I'm surprised you've hung in that long. I figured we would have you for about 10, and you're like, "You know what? This is lame. I'm out of here." That's what you did in Chico with the gym. "This is lame. I'm out of here."

Greg Everett: I liked the gym. I liked you guys. I just couldn't stay in Chico.

Robb Wolf: Okay. That's fair enough.

Greg Everett: All right.

Robb Wolf: Okay. So down to the goodies. We have some goodies. Some of them, I'm not sure how they made it through the Bioethics Sensor Committee but you'll see what I mean when we get to them.

Greg Everett: I need entertainment with these things too, Robb.

Robb Wolf: That's true. That's true.

Greg Everett: So I'm sorry that you have to bear the burden.

All right. Smuggling Peas says--

Robb Wolf: Which I just have to interrupt on that one. That name "Smuggling Peas" just conjures up some amazing imagery just an aside.

Greg Everett: It does.

Robb Wolf: Okay.

Greg Everett: First of all, I just have to say that I like this guy because he has three separate topics and questions, but each one has its own, "Dear Robb," "Dear Greg and Robb," "Last one Robb." So he is very clear on who he wants to answer the questions, which I appreciate.

Robb Wolf: In that vein, I just want to throw out here I want to do a "Dear Greg" podcast.

Greg Everett: Oh, yeah.

Robb Wolf: So like everything Greg-related. So we'll flip the program here where I'll read the questions. Greg will be answering a lion share of the material. So folks, think about questions that you want to send in for the "Dear Greg" podcast.

Greg Everett: I will definitely have a few drinks before that one. All right.

Robb Wolf: Okay. Now, we're really...

Greg Everett: "Dear Robb, big question here, but I will try and be as pithy as possible. Ray Peat and his fan club, good people that they are, advocate reducing most all unsaturated fats (i.e. poly and mono) in place of saturated fats claiming that unsaturated fats are not meant for animals with as high of a basal body temp as ours. Fish, for example, have a lower body temp.

Their protocol also includes other suggestions that I have a hard time accepting such as the heavy consumption of orange juice, eating six to seven times a day, and not avoiding sugars if one has Candida. The aim of these suggestions is the optimization of thyroid output as measured through sublingual temp. I don't get it. I'm just not certain I'm convinced that 1) sublingual temp is indicative of thyroid output, 2) that I should consider adopting the annoying habit of eating that often, 3) that fatty fish and avocados actually promote inflammation via oxidized unsaturated fats. I've given it a 30-day trial and all I can say is that I have more cravings and find myself annoyed by eating that often, but otherwise no real noticeable differences. So what do you think?"

Before you answer, Robb, there are two more questions.

"Dear Greg and Robb, smaller question. What is with CrossFit and making workouts so damn painful? Is it really beneficial to push that mental suffering more than one time a week? I know it varies by the box, but you have to wonder the benefit of suffering to that degree at all.

Last one Robb, on I, Caveman you lost 16 pounds Holy hell! You mentioned that you had some stubborn areas that you essentially ate when you were starving. What implications might this have regarding low calories diets for those once metabolically deranged, few that after finding salvation retain a tiny pooch?"

Robb Wolf:

Holy cats! Wow! Okay. So back to the body temperature dealio, in physics, in chemistry, every time you increase the temperature of a reaction by 10 degree Celsius, you approximately double a reaction rate. So when we're thinking about oxidized fats, there's a little concern there. This is part of the reason why we've modified the position on the fish oil, and I do kind of lean towards this idea of having a good amount of saturated fats, a fair amount of monounsaturated fats, and then with the polyunsaturated fats, really using those is almost like the control rods in a nuclear reactor. You just get enough of them. You don't want too much.

And that makes sense from an oxidative stress standpoint. I don't really see a problem with that. But this notion that warm-blooded animals do not have polyunsaturated fats is goofy. I really like a lot of Ray Peat's stuff. They're just mad as hatters over there.

But if you look at a reindeer for example, this is just one example, mammals have an ability to both elongate and desaturate fats, and so we can produce a whole lot of the fats that we need and we can tweak them based on the parameters that we need. There are certain essential fats that we must get through the diet and those are the omega-3 and omega-6 fats, EPA, DHA, arachidonic acid, et cetera. But beyond that, we can modify the fats in our tissues to a very remarkable degree.

So if you look at a reindeer, because these critters are running around in the snow and the ice and all that, when we look at the fatty acids that are deposited in their distal portions of their body down in the hooves and the more extended portions of the body, we actually find that they have a very, very high concentration of polyunsaturated fats, both that are aggregated through the diet and that are also produced via elongase and desaturase, and this is because polyunsaturated fats have a much better

ability to remain fluid at lower temperatures. They have a higher melting point.

So this is a really feature. I don't want to go down this rabbit hole too far but this idea that warm-blood animals don't have significant amounts of polyunsaturated fats is just wrong. It's really dependent on what the needs are and the organism will modify this situation based on the needs. I don't think that there's kind of an argument for having a fair amount of saturated fats from coconut oil and maybe some pastured butter and stuff like that, doing a fair amount of monos, but the issue with like avocados and fish, I'm just not really seeing that.

And then the rest of this stuff related to like thyroid production and all that jive, you can get people into a hypothyroid kind of condition from elevated cortisol levels, from suppressed thyroid output, from a lack of food. There's a variety of things that can go into this and also from autoimmune issues, which is why we've seen so many people with Hashimoto's thyroiditis benefit from a gluten-free, dairy-free, Paleo-type shtick because they end up dealing with these autoimmune factors. So there's a lot of different stuff that goes in even dealing with thyroid issues.

So this like eat six meals a day, maybe some people need to do that to maintain some base level blood glucose levels because they're not functioning very well, but I see that as being an intervention for a sick individual and that a normal functioning person, not that you have to do this all the time but you could go 6, 7, 8, 12, 18 hours without eating and it's really not going to be that big of a deal. We should be metabolically adaptable enough that if we have a big carbohydrate meal, that doesn't kill us; and if we don't eat for a day, that doesn't kill us either. We should have some metabolic adaptability and head room so that we can deal with a variety of different situations and not have it crush us.

So that's kind of that piece. Greg, any thoughts on that first chunk?

Greg Everett:

No. That's way beyond my level of intelligence.

Robb Wolf:

Okay. So the smaller question, I'm sure you'll have some commentary on this. What is it with CrossFit making workout so damn painful?

It's an interesting thing having been involved with CrossFit literally from the beginning, like having been a part of the first CrossFit affiliate, founding that, working with CrossFit HQ for years, watching the growth

and evolution of this thing over time; and if you look at 2002-2003, the workouts were much more reasonable in my opinion.

And it's interesting. Instead of the program developing into a skill propagation-oriented scenario that would look a lot like what Catalyst does, it would look a lot like what the Gymnastics WOD does, it would look a lot like what CrossFit Football does, it would have some skill work, some strength work, and then maybe some metabolic work, and you start getting breadth and depth on skill training and not just trying to cook that glycolytic metabolic pathway.

Instead of going down that road and really the direction of what I really considered to be quality strength and conditioning programming, instead the thing became a dick measuring contest to see how tough you were, and this was something that was always odd and disturbing to me. Even when Greg and I both participated and coached on a ton of level I certs back in the day, the focus was more on proving to people that this was hard and that we were tougher than you than it was on like, "Hey, this is some really valuable stuff. Let's share some ideas and then see where we go." It was much more of ego-driven, "We're going to prove to you how tough we are."

I think that that kind of wackiness has just permeated the culture, and that has been the direction that they've gone. Maybe it's good in a way because they've focused on the sport of fitness thing, and so instead of actually giving a shit about health and well-being and longevity and all that sort of stuff, the focus is on do more and more and more, but is that healthy? Nah. In my opinion, it's not real healthy.

And it's an interesting commentary. Catalyst has put up a national call for trainers because you guys are growing and expanding and need help. NorCal Strength and Conditioning put out a national call for trainers because we're growing and expanding and need help, and we cannot develop trainers from within the program quick enough to be able to meet our needs for growth, and this in a small economically impacted college town in Northern California, but yet because we don't beat the dog piss out of our folks, because we have some intelligent training and we train hard.

Interestingly, we've produced a third place Affiliate Cup team and we just this last year produced a sixth place finisher in the Women's Overall in Jenny LaBaw. So obviously, we're not pussies. We kind of know what we're doing on the training side; but yet, we're also doing really well on a financial side and on a growth base. And this is something that I just don't

get with a lot of these particularly newer CrossFit affiliates. They do not understand this need for taking care of their clients and not just catering to what's going on on dot-com and trying to emulate that stuff.

But at the end of the day, I don't really give two squirts about it now. I used to really fret over this when I was a part of the organization because I wanted to see people succeed. But at this point, I only want to see the smart people succeed. So if you're dumb enough to do programming like that, then both your clients and you are going to suffer the consequences both metabolically and financially.

So that's probably way more than what this guy was fishing for. Greg, what do you think on that?

Greg Everett:

Well, the thing with CrossFit for me is I think more than anything it's been a huge disappointment. I say that because I can remember early 2004 when I was newly involved and it was this thing to me that had so much potential like you said to bring in the skill sets of so many different athletes and coaches, but instead of continuing down that path it did, it just turned into just like a constant quest for a bigger beat-down and also just this elitist attitude toward anyone else who wasn't on board with it and who apparently was just not elite enough when in reality they just actually had plans and goals rather than a constant need to just feel pain.

So more specifically with this question, I don't think it's productive to beat the shit out of yourself or your clients three to six days a week in the gym. I mean your highest level athletes don't do that and there's a very good reason for it. It doesn't work. You can't maintain that. And if you're constantly hurt, if you're constantly burned out mentally, you can't perform to the degree you need to make the progress that you need to perform the way you need.

Yeah. I get that every once in a while having like just a super nasty, maybe a little bit longer workout is good. We'll do that in here every once in a while, but the day-to-day workouts, while they are super tough, they are not so bad that we have 10 people in the corner in the fetal position coughing up bile. There's no point. And we get clients from other CrossFit gyms coming here and just saying, "Yeah, I've been there for a year and a half. My shoulders hurt. My knees hurt. I don't know how to squat. I don't know how to press. What's a deadlift?" like just the most ridiculous things.

The latest one that I like was "Yeah, I asked one of my coaches for some help on something and he said, 'Well, you've been here for more than a

year so you don't get any coaching. Coaching is reserved for the new people." Yet, this person came, couldn't do a power clean with some dumbbells, isn't capable of the most basic movements that I would expect to see in a CrossFit gym; and yet, she is being denied coaching after a year, but she never got the coaching in the first place so I'm just very confused about that. But I guarantee she was getting her teeth kicked out every single day.

Robb Wolf:

That thing is just 100% a systemic failure, and there are recommendations ranging from the on-ramp, stratifying the skill series. I love what Dave Werner did with his four-tiered skilled athlete deal and all that stuff.

So that is a shocking failure on the part of the coach and on the part of the business. They are not going to do as well business-wise as what they could, and they are failing their clients. I think it borders on almost like a malpractice neglect kind of thing because we know better than that.

Again, I don't want to go too far down the historical elements of this, but this is a lot of what got us in trouble in the beginning was making suggestions. Maybe we should have some sort of a stratified buy-in. Here's a way to do it. Who else is doing this? It's not that the on-ramp that my wife developed was the way to do it, but here is a way to do it. Let's compare notes and see some better ways.

How about business systems like triaging people and folks who have an orthopedic issue that they need to go somewhere so that we can deal with that? And if somebody has been in your midst for a year and they cannot perfectly perform a dumbbell power clean, that's a goddamn problem. You are a failure as a coach.

We were in this spot and we've talked about this a bunch. In the beginning, it was come one, come all. I'd be in there coaching. Nikki would be coaching. Greg would be coaching. Typically, Greg would deal with the big group. I would deal with the beginner because if they had orthopedic issues, I had a little bit more of a rehab background.

And it didn't take us long to figure out that that was a failed approach. It was too much manpower, too spastic, not systematic or anything. And so there are much better, much easier ways of doing this that again, you're going to make more money and you're going to be more successful, and folks have been chased out of the organization for suggesting these changes. It's just shocking. The folks who refused to implement stuff like

this, it's a head scratcher to me at this point because you have to try not to find the information.

Greg Everett: Yeah, seriously. Yeah. I would just wrap that whole thing up by saying the goal should not be producing pain. I mean you need to have measurable progress and that means developing a skill set. It means developing movements and range of motion and health to the degree that these people can come in and enjoy themselves.

If your client's goal is to come into the gym and have fun working out, then that's fantastic. There is nothing wrong with that. If they don't have another sport or another activity that they are doing this for, working out is the activity, that's great, but it needs to be sustainable in that case too.

And so when I hear people who are blowing out their Achilles tendons doing 70 box jumps in a workout or who have had two SLAP tears repaired from doing Kipping pull-ups, which are not necessarily a problem; but they're a huge problem when that person orthopedically isn't prepared for them, if the joints aren't conditioned for them and they are doing excessive amounts far too frequently, that's just plain stupid and irresponsible.

Robb Wolf: Yeah, anyway.

Greg Everett: On that note, let's move on quickly.

Robb Wolf: Yeah, on that note, because we could wax nostalgic on that topic for quite a while.

Greg Everett: Yeah.

Robb Wolf: But the last one, I, Caveman, I did lose 16 pounds, kind of an interesting gig. I had historically always run very, very lean, like it was easy for me to run below 10% body fat. Abs have been always pretty lean on the wiry side. I did a mass gain while traveling and trying to run the gym and bad sleep and all kinds of stress.

Looking back, I probably had low testosterone levels. I almost certainly had sky high cortisol levels and I managed to get myself really, really chubby, really metabolically broken. And after that time, it was two years ago, almost three years ago I think, it's been really, really hard for me to get back to a good level of leanness, to have good androgen levels. I'm almost 40 so I mean you would expect there to be a little bit of slide in

wiggle room with that, but still, you want to have as good a situation as you can.

But what was interesting, when I did this I, Caveman gig, it definitely leaned me out everywhere. I lost some muscle mass for sure. Like when I came back and started working out, I was really weak because I have lost 16 pounds and definitely some of that was muscle mass. But since then, like in that insulin-resistant fat area right at the waistline, I've actually been a lot leaner.

And I was talking to both Chris Kresser and Mat Lalonde about this, and Chris Kresser was kind of on a tear reading about protein-sparing modified fasts, and what goes on in this is essentially a very, very low-calorie diet. They give folks essentially just protein shakes, and the idea there is that you provide enough branched-chain amino acids, enough essential amino acids that you really try to forestall protein degradation but you're effectively starving people. And I mean that's really what we had in the I, Caveman gig. I mean I had a couple of fish on one day and some dandelion greens, and that was really about it until we ended up getting the elk.

And so the protein-sparing modified fasts were just basically full-on fasting. There might be some situations that are appropriate to put people on something like that, and I say that with huge reticence because the folks who have asked me about those programs in the past are my super challenging, recidivist clients. They eat like knuckleheads. They come back into the gym. They beg for penance and forgiveness and there's all kinds of gnashing of teeth and emotionality and everything, and they just want to do extreme events and they don't want to figure out some sort of a livable, sustainable life way.

And so things like a juice fast or some sort of a protein-sparing modified fast appeals to these people, and I've been very, very reticent to recommend it or even acknowledge the existence because of some of the spastic clients that we've had that I'm just trying to get them to keep all the wheels on the road and figure out how to live day to day in a reasonable, sustainable way.

But again, as time goes on and I look at the totality of the story, there are probably people who are really metabolically broken that even with a low-carb, Paleo-type diet and better sleep and some exercise, it may not be enough to flip all the switches to get normal leptin signaling, to get normal insulin signaling, and to really bring them back to some sort of a place of health. So they might legitimately need some sort of a gnarly

fasting-type intervention, and obviously, you would want to approach some sort of a healthcare provider to guide you through all this stuff. You don't just jump into a protein-sparing modified fast on your own.

But it's interesting. It's another one of those things that as time is going on and I've been given additional information and material, I've had to kind of modify my stance on this. Again, we have different tools for different people, and the needs of folks vary depending on their situation and there may be situations where some sort of a protein-sparing modified fast may be totally appropriate for someone. But it's said with huge reservation because people are knuckleheads at times and they just want to spaz out and do some sort of extreme intervention, and then they think that they're going to be able to go back to eating Doritos and doing that whole thing and be okay with it and that's just not the case. You have to figure out something that's sustainable over the long haul.

Greg Everett: Yes. Well, speaking of extreme eating protocols, that leads us nicely into this next question.

Robb Wolf: You've got to read the subject line on this one.

Greg Everett: Well, the subject line on the email was "I Almost Ate My Boyfriend!" Deb says, "I started following the Paleo protocol a little less than two weeks ago and I love it. I've coupled it with a pretty intense ice hockey training regimen and Olympic lifting. The results have been awesome.

The one thing that I don't like about it is the fact that I wake up in the middle of the night so hungry that it hurts. I think my metabolism is so fast that I am burning through whatever I'm eating much faster than I ever have. I didn't dwell on this. I just put a bowl of walnuts and an apple next to my bed each night when I went to sleep. This has filled me up enough to fall asleep again.

It got worse though. I had to make sure there was something there right away in the morning, too. Last night, things got a little frightening. I had a late dinner with my boyfriend and our parents (the families met for the first time. It was nice.) and I had a huge steak and tons of veggies. I went to bed full, with no walnuts on the nightstand.

I woke up and I felt like a wolverine. I looked down at my boyfriend's arm and for an instant, I swear, I thought about taking a bite out of it. Granted, I was half asleep and I would never even dream of eating another person's arm, but I was so hungry that the thought flashed in and

out of my brain. It freaked me out so much that I ran to the kitchen and sat on the floor with the bag of walnuts until I was sure to be full.

- A) I don't want to wake up in the middle of the night anymore.
- B) I don't want to eat my boyfriend while he sleeps.

Please help me figure this out!

Robb Wolf:

So when Greg and I were talking about this show before it ran, I was like I'm really debating about this pithy line, which was luckily his penis was not dangling out from under the covers, one; and then the other thing, I just started watching on Netflix "The Walking Dead" which zombie movies are a funny deal for me like they scare the bejesus out of me but they just draw me in, and then after I watch it I'm just not right for a long time. So I'm basically going to be reduced to watching like one episode of this show a month. Otherwise, I'll be broken. But this immediately made me think of that.

So all of that silliness aside, the two things that I would think about here is potentially you need to eat more carbs. You may be getting a really potent glucagon response off of the protein you're eating. So you may be doing like a lot of protein, a lot of fat, and some people I think have a larger than average glucagon response to protein, and glucagon will release a little bit of glucose out the liver but we also, with a large protein meal, we release insulin and that insulin is going to pull blood glucose out the circulation so you may be getting some dips in blood glucose levels.

So the first place that I would look is actually sticking in a pretty good whack of starchy carbs like post workout and maybe even near that final meal near bedtime. It sounds like you're eating a lot of fat but that's not really addressing the issue. So I would lean towards the potential that you're probably active, you're probably lean, and you probably need a little bit more carbs in there. So that's the direction I would go, and for the love of God, don't eat your boyfriend.

Greg Everett:

No. His parents won't appreciate that.

Robb Wolf:

Yeah. That would put you and your family and their family on some rocky ground immediately.

Greg Everett:

Yes. All right. Adam says, "I started Paleo/Primal this past February. I devour all the information I can from you and several others, most notably Mark Sisson. The results have been wonderful. I feel great. I have lost some body fat, but I was already running pretty lean. I am trying my

best to do the whole program: sleep in total darkness, no grains, only very occasional sugar, exercise as per your recommendations, et cetera.

Problem: I have had three lipid screens done in the past nine months. My total cholesterol has gone up from 269 in February to 317 in May, and now 374 in October. My HDL has been consistently between 60 and 70. My triglycerides are generally below 100. I know all about the flaws in the lipid hypothesis, the importance of the ratios, et cetera. It's easy to stand behind those when it's someone else with a total cholesterol of 374 and an LDL of 290.

My wife wants me to get looked at by another doctor. I will do anything to avoid being prescribed Lipitor. Pretty sure I wouldn't take it anyway, but I don't want it to come to that.

What are your thoughts? Continue blindly onward? Eat more whole grains?"

Robb Wolf:

Well, again, like out of the book, I always like to see LDL particle size, C-reactive protein, vitamin D levels, and a couple of other things because the cholesterol levels, we just had -- gosh, was it in JAMA or Scientific? I think it was in JAMA just a couple of days ago where that there is more and more and more acknowledgement of the fact that cholesterol levels are not the primary indicator or causative factor in cardiovascular disease, and it's a complex event that there are other things going on. I think from the camp that we're coming from systemic inflammation is probably the big driver in this story.

To the degree that cholesterol plays a part in that, that would be small dense LDL particles in conjunction with an overactive immune response. So we get vitamin D levels in check. We deal with LDL particles. We can get modification on the LDL particles in an unfavorable direction by too many dietary carbohydrates but more related to systemic inflammation. So that's where really being fastidious with the grains, legumes, dairy, making sure you get probiotics, making sure that you don't have other things that are damaging the gut lining. We're working on some projects to have some lab testing that we'll be able to look at this stuff in an integrative fashion so we'll tell you guys more about that as we get more information.

But as a baseline, I would want to see LDL particle size, C-reactive protein, vitamin D levels, and just look at that so that we can look at the current blood work but also have the further distinction to see what's going on with that. And then from there, if you want to drop saturated

fat intake and increase your monounsaturated fat intake, you most certainly will see a decrease in total cholesterol. You should see a decrease in LDL cholesterol. Unfortunately, you might see a little bit of a decrease in HDL but maybe not. That's kind of up in the air.

But those are the things that I would tinker with. I would go on the paleophysiciansnetwork.com website. Look and see if there is a GP in your area or within spitting distance that you could consult with so that you can get a little bit more support in this direction. We're getting more and more people on there right now. The Paleo Physicians Network is very, very heavy with chiro's, which I love chiropractors but we also need some MDs so that we can track blood work and do all that sort of stuff with folks, but I would give it a shot and see if there is anybody on there.

So that's the stuff I would do. Do a little bit deeper analysis on your blood work. Make sure vitamin D level is good. You could consider dropping saturated fat intake, and I would track down a doc who is going to work with you on this stuff and who understand some of the nuances. The deal with the statins, their primary mode of action is as an anti-inflammatory. So we can do lots of other things that have anti-inflammatory effects but don't have the same downside as the statins do. So if this were my situation, that's how I would tackle that.

Greg Everett: So Robb, I'm going to make your day and skip the next question because I just realized that we talked for way too long on that first one.

Robb Wolf: Okay. That's cool.

Greg Everett: As funny as I think it would be to hear your answer, let's go to number five.

Robb Wolf: We could do it really quickly. We'll do it really quickly because it is funny.

Greg Everett: All right. Okay. Scott says, "I received and read your book last night. What a great book and very well explained. Thank you."

My question: I am under the impression that sour dough is a protein and that the starch is converted to this as part of the fermentation process. Is this true? And if so, does the protein contain the right balance of amino acids? I understand to make anything with sour dough you usually add refined ingredients, but I would really like to know if sour dough starter itself is similar to a meat protein. Thanks."

Robb Wolf: This was one of the questions that I was kind of like, "How did this pass the bioethics committee?" So I was kind of shocked.

Greg Everett: Because I am the bioethics committee.

Robb Wolf: Mainly bio, not much ethics.

Greg Everett: Yes.

Robb Wolf: So the long and short of this, I'm really not too sure even. You don't ferment starch into protein. Sour dough is absolutely not analogous to animal protein. The whole process of making sour dough bread is an attempt to actually deactivate things like gluten and other reactive proteins to say nothing of like the phytates that are in wheat.

So sour dough bread is an improvement off of say like standard "grind it and eat it" wheat because it does have some enzymatic activity on some antinutrients. But keep in mind, the whole process is to take a relatively toxic food and try to make it less toxic. So better be aware on that one.

Greg Everett: So you're saying that when I go to Jack in the Box, I should get everything on sour dough bread instead of regular hamburger buns.

Robb Wolf: Yes.

Greg Everett: Oh, cool.

Robb Wolf: I will admit sour dough is delicious.

Greg Everett: All right.

Robb Wolf: You'll never not hear me say that.

Greg Everett: Mike says, "Robb, can you and Greg briefly outline your top three to five simple workout recovery therapies? I'm focused on Oly and power lifting and would like to minimize delayed onset muscle soreness so please address timing relative to the workout session. Thanks, and keep up the great work."

Robb Wolf: Do you want to tackle this one first?

Greg Everett: Sure. So first of all, if your main concern is delayed onset muscle soreness, then a lot of that you can handle just with your training, and typically with Olympic weightlifting, you don't have a lot of DOMS

because you're doing either the same or very similar movements either every single day or very frequently so there's never like a really new movement to piss your muscles off to the point of soreness. Our guys get sores if say we start a new cycle and I put them on some really high volume squatting or something like that. So that's number one.

But in terms of therapies to address that despite the training because with your power lifting stuff you may be doing some less frequent training and a little bit higher rep squatting, deadlifting, posterior chain stuff, a big one is obviously your post-workout nutrition and Robb can speak to that better than I can, but I'm of a simple mind when it comes to that stuff and basically do it and it will work better than not doing it.

Constant hydrotherapy I think is the number one best thing, and you said simple workout recovery therapies. That's super simple but it's not very accessible for most people. Around here, there's a place called Watercourse Way. If you live in the Palo Alto area, go check it out. For 20 bucks, you can get a private room that has a hot tub, either a steam or a dry sauna, and a cold plunge, which that's pretty bad ass. And I got to say, each one of those rooms also has a small bed so bring a friend.

But that stuff works wonders. Even just a cold plunge and ice bath is fantastic. You got to have the nods to get in there the first time. If you do it regularly, I swear it's not nearly as bad. If you're doing it a couple of times a week, it doesn't even faze you anymore. We used to do that at Coach Bergner's house. Every single night after training, I'd be in the pool. In the summer, it was not that bad. In the middle of January, it's pretty damn cold. But that will turn you around real quick.

Foam rolling I think is a huge one too, and I like foam rolling actually pre workout better than post. I've kind of changed my tune on that a little bit in the last couple of years, but I definitely like the pre-workout thing just to get things moving a little more smoothly and prevents you from tearing yourself up as much. But post workout, if you just do some really quick passes and try to cover everything, almost like one of those froufrou massages where the therapist just tries to get all the bad energy out of you, think of it more like that rather than like trying to stick a fork in your quad or something.

Robb Wolf:

I like that we've had full energy release massage and a bed and a hydrotherapy suite mentioned in your comment. This is looking juicy, friend.

Greg Everett: And then the last one I would say, and this is another luxury that not everyone is able to do, but post-workout nap. That one is kickass. On top of that, you can throw in either some phosphatidylserine or Seriphos and holy basil right after you train and that's a little bit of a cortisol drop there if you're a spaz like me and you need to get the cortisol down a bit. And then if you can just lie down and close your eyes for 10 to 20 minutes, that will do you good.

Robb Wolf: Cool! I don't really have much to add to that.

Greg Everett: Actually, I got one more. If you have an extra \$3000 to \$5000 lying around, get a set of Game Readies. You know what those things are?

Robb Wolf: No.

Greg Everett: Dude, they are MAST pants basically but they pump cold water through.

Robb Wolf: Oh, okay, okay.

Greg Everett: So it's like basically you have two giant blood pressure cuffs, one that goes over each leg. You got a cooler of a pump and so it pumps cold water through them, and then the pressure of them just gradually increases and decreases. So it's pumping all the edema fluid and like lymph through your legs and increasing the blood flow and cooling at the same time. Those things are so sweet.

Robb Wolf: Wow!

Greg Everett: So any of you out there who are feeling really philanthropic and want to buy me some, I will send you a free book. Fair trade.

Robb Wolf: Signed? Signed book?

Greg Everett: Well, we can talk.

Robb Wolf: Okay, okay, fair enough. I don't have really much of anything to add to that, but my main thought which you covered was just DOMS and recovery in general.

A huge part of that is just smart training, planning your training block and all that stuff, whether we're talking Olympic lifting or MMA and then to the degree that you get wear and tear, all the prehab, rehab, nutrition, foam rolling. The hydrotherapy stuff is totally legit. The pants pretty cool. I remember the CPM machines that we would use in physical therapy and

you would hook up the ice bucket to the whole deal and it would pump chilled water in there. It sounds like they just built that out into a pair of slacks. So that's cool.

Greg Everett: Basically. It's pretty awesome.

Robb Wolf: Nice!

Greg Everett: All right. Any last thoughts on that or are you good?

Robb Wolf: No, that's good.

Greg Everett: Excellent. Samantha Says, "I was reading your book and I got to the part where you mentioned dysphagia and linking that to having had your gallbladder removed. It just so happens that my mother has a really hard time swallowing even if it's just a small bite of food or water or even just a small pill for something. She had her gallbladder removed 20 or so years ago and is eating a non-Paleo diet. I told her about the connection and she wanted to get more information on the subject.

Do you know why there is that correlation with gallbladder removal and dysphagia? And if it will improve if she eats a gluten-free diet?"

Robb Wolf: We've definitely seen a gluten-free diet improved the dysphagia in folks who have prior gallbladder removal. The deal with the gallbladder is that we have some CCK (cholecystokinin) signaling that gets disrupted. That's important in peristalsis and a normal GI function in the release of bile salts in the gallbladder. So when that gets buggered by grains, particularly gluten, then that's where we can get a gallbladder or like a gallstone formation.

The way that this stuff works its way north where we end up with dysphagia, the inability to swallow, we even get some difficulty in speech and stuff like that, is that we've got a progressive neuromuscular degenerative disease going on. I will pat myself on the back a little bit. I'm the one that found this in literature, the connection. I found what appears to be a pretty high likelihood of the causative mechanism with malignant melanomas and then we also have a proposed mechanism for Huntington's disease, all of it related back to transglutaminase, all of that related back to various epigenetic triggers causing autoimmune reactivity.

The problem is that we've got basically an idea hypothesis on all of this stuff and nobody to follow up on it. I'm not a graduate student. I actually

recently when the Framework Matters piece went down and I was super pissed off about well just a bunch of stuff, but I actually considered bailing on all this and going back to school and getting a Ph.D. and following up on some of this stuff, but I reconsidered that. The potential of a Ph.D. may actually pop up somewhere down the road for me. I need to find the right situation where I can still do this stuff and do the graduate program at the same time.

But the long and short of all this is that this is all a hypothesis. We have a conglomeration of papers associated with this stuff that is suggestive but we have yet to get into a spot where we have like a pilot study, clinical trials, and further mechanistic proof. So that's where all this stuff is, and so at the end of the day, the most potent thing that you can do is to just give this stuff a shot.

My mom had her gallbladder removed. She has lupus and rheumatoid arthritis. She has dysphagia. She complies with stuff enough that she doesn't die. She never complies well enough that she's actually healthy. That seems to be part and parcel with all this stuff too. It's almost like a psychological shift in people who have developed all these problems.

So I don't know if you're going to be able to get your mom to shift. Maybe you will. Maybe you won't. Grain, legume, dairy-free, Paleo diet 30 days and you're going to know whether or not it helps her. I would be shocked if it did not.

If you are able to get her to do it and you can keep some data on that, I'd sure like to see it. It would be another suggestive data point that we have, and when we get ready to do some things like a pilot study, these clinical notes are really, really valuable for perking people's ears up about the fact that we have something substantive here.

We're running short on time and I just want to throw out there that there are a number of pilot studies that are in the works and I'm on a couple of back end committee-type things writing these things up and making sure that they look good so that hopefully we can get funding for it. But if we can't get private funding, which I wouldn't be surprised if we don't because a lot of what we're talking about goes against what almost everybody else in medicine and pharmaceuticals are really pushing.

And so when that stuff is ready to go, what we're going to go is come to the community and pass the hat around and hopefully you guys are able to fund independent primary research on these topics so that we can answer these questions and have a much more structured response with

does a gluten-free diet or a Paleo diet benefit X, Y, or Z? So that's a bunch of the back end stuff on this.

So a lot of this stuff we've got some suggestive theory. We've got a hypothesis. It all needs to be tested. At the end of the day, the quickest route to you knowing whether or not there's efficacy here is just trying it and then letting us know what the heck is going on. Whether it worked or not, that's some really important information for us to know.

Greg Everett: All right. NeoBerserker says, "WTF, Robb! Mark Sisson says late night binge eating is a myth since your body doesn't know what time it is and you say the opposite. Is this one of those things that you looked over and need to rethink?" Are you wrong, Robb?

"Is there real proof that late night eating will slow down fat loss? I've tried both and I've lost most my weight by eating late at night, then I heard you say that it hinders fat loss and my fat loss was slowing down, so I tried not eating late and it didn't really seem to help, but there could be other issues at hand, so I have no real proof either way. Can you link to some studies?"

Robb Wolf: I'm glad we can find somebody who is more confused than I am.

Greg Everett: Yes.

Robb Wolf: So Martin over at Leangains, he did a pretty good analysis of this. The long and the short of it is that whenever you tweak one of these parameters so you eat later, that changes other behaviors, other habits and stuff like that. The long and short of it is what I've noticed. Here is where I'm coming from on this.

If you generally eat a little bit earlier, then you're able to go to bed without a bunch of food really seriously pumping through the system. Your metabolic rate is able to come down. When the metabolic rate comes down, then your body temperature comes down and you release growth hormone, and you've got all kind of good stuff that comes about from that. You have a much more restful sleep, more restorative sleep. If you're using a little bit of melatonin or you're using a little bit of magnesium and stuff, you tend to get a better effect on a somewhat empty stomach.

So a lot of what I'm looking at is related to like sleep quality and all that sort of jive. At the end of the day when we're really talking about fat loss, where I'm at with this stuff at this point is that we really need to control

systemic inflammation so like gut-irritating foods, systemically inflammatory promoting foods. We need to limit that stuff obviously.

The insulin deal, I'm a little more open on that that we may have more latitude on insulin itself and therefore like carbohydrate load as it relates to fat loss. But then beyond that, we do need to induce some sort of a calorie restriction scenario to get our ultimate fat loss going. It doesn't have to be a ton, but again, this is where higher protein, moderate to high fat, moderate to low-carb Paleo-type diet makes all this stuff really, really easy because you're just not that hungry. It's just easy to eat this way and to not overeat in fact.

So those are all the big things that I would consider in this story. The bottom line is that you could eat late and lose fat. You could eat early and lose fat. It depends on a bunch of other factors and how you're modifying those variables to your benefit or to your detriment. We don't know what your sleep quality is like. We don't know what you're doing for training. Does the later feeding affect your sleep quality?

We had the gal that was going to eat her boyfriend earlier in the podcast. She may benefit from eating some carbs later in the night and she may actually sleep better as a consequence of that. So here again, we've got some general concepts that we can bat around, but then we really need to look at who the individual is and see what their specific needs are and then modify accordingly. So we've got some concepts and then we need to be able to have some dexterity and not just ram a one size fits all 40-30-30 kind of scenario on to everybody.

Greg Everett: So are you saying I shouldn't be on the Zone?

Robb Wolf: No, you should.

Greg Everett: Is that a fat joke?

Robb Wolf: Yes.

Greg Everett: Oh, all right.

Robb Wolf: I'm not familiar with what Mark's specific comments are on this so I'm not sure what kind of framework he had on that, but that's my take on it. So I really don't see this being an either or thing which folks love trying to boil this down to "Mark Sisson said this. Robb Wolf said that." People on PaleoHacks dissect it the way that they dissect religious sex, dissect doctrine and stuff like that. I mean there are concepts here that you

apply and the 80% or 90% of the information is a very broad brush stroke, and then the final 5% or 10% starts getting into like detailed pencil drawing and it really has to do with individual variables.

Greg Everett: Carbohydrates are good; true or false?

Robb Wolf: Maybe.

Greg Everett: Sweet. All right. Well, we're done.

Robb Wolf: Sweet! So two years of just making shit up and throwing it against the wall.

Greg Everett: Yeah.

Robb Wolf: Anything else, G? You got any projects cooking or you just need to split so you can go train your client?

Greg Everett: I got some projects cooking and I'm trying to figure out a way to create more hours in my day coming up soon so I can actually get them done. So we'll see about that.

Robb Wolf: I think different drugs can actually alter your perception of time so maybe more experimental drug use.

Greg Everett: Well, yes, but I only have so much time to experiment.

Robb Wolf: That is the conundrum.

Greg Everett: If I started experimenting with drugs too much, then I'm going to dedicate more time to that than I am actually doing using these projects I'm supposed to be using the drugs for.

Robb Wolf: Okay, good point.

Greg Everett: Slippery slope as they say.

Robb Wolf: It is. Indeed. All right, man. Well, thanks for wrapping up the Year 2 of The Paleo Solution Podcast.

Greg Everett: My pleasure.

Robb Wolf: Right on, man. Talk to you soon.

Greg Everett: Okay, see you.

Robb Wolf: Bye.