

The Paleo Solution

Episode 10

Andy Deas: Robb Wolf, Andy Deas back for Episode 10. How are you?

Robb Wolf: I'm good. I survived the Nicaraguan road waves with Welbourn at the wheel.

Andy Deas: Yeah. I think there was some question whether or not you were going to make it back.

Robb Wolf: Oh, I was definitely questioning whether or not we would make it back. Apparently, Welbourn has gone through several technical driving schools and stuff like that like racecar schools, and he was driving the Suzuki Samurai rig that we had as if it were a racecar. So it was horrifying.

Andy Deas: I can only envision this. This is why I don't vacation in parts of the world like that unless I would never have to drive or maybe not even get in the car.

Robb Wolf: Yeah, going through the demilitarized zone to get to your vacation spot is maybe not for the faint of heart, but it was pretty fun.

I just want to thank all the listeners. We've had a stratospheric increase in listeners. We went from four to six. That is largely still in the rest home population. They're using this podcast as a cure for insomnia. So thank you to all six of you listening.

Andy Deas: And to be clear, we have no scientific method for calculating the listeners so that's purely anecdotal or pseudo-science I think.

Robb Wolf: Yes. Yeah, yeah, chicken giblets.

Andy Deas: That's right.

Robb Wolf: Chicken giblets to figure out how many people are listening to us.

Andy Deas: Exactly. And hopefully, all six are still on the line.

Robb Wolf: Right.

Andy Deas: All right. So we got a ton of questions. In fact, I think over the holidays, which was interesting, there was what seemed to be an increase in questions to catch up on, which was surprising. I would have thought it would have gone the other way, but I think folks had a little bit more free time to give some things some thought and post some interesting questions.

Robb Wolf: Yeah. The questions are up. We're actually getting some rotator on iTunes. The front page rotator has been The Paleolithic Solution several times so we're getting some pretty good traffic, so thank you to everybody for the questions and for the interest. Very, very exciting.

Andy Deas: Yeah. And also, I think what's interesting too is we're getting I don't want to call them repeat questions but some interesting questions with slightly different dimensions that maybe we haven't addressed in the past. And so I think what's interesting is that answering questions sometimes is causing more interesting and complicated questions, which is good news. I can't wait till our supplement episode that we're teasing because I feel like that's going to have a 17-part spinoff.

Robb Wolf: Yeah. It will be worse than when I gave the protein prescription and the number of calories to calculate protein's prescription and all that. So yeah, I'm living in stark terror when we do the podcast on supplements.

Andy Deas: Far worse than your 10-minute dairy dissertation last week.

Robb Wolf: Yeah, yeah.

Andy Deas: All right. Well, anyway, I think we'll jump onto the questions. Enough rambling from you and I.

Robb Wolf: Cool!

Andy Deas: First, we have a rather lengthy question or I guess multipart question from our friend Christina from the gym. First question is about eggs. Basically, we had talked in the autoimmune episode I think Episode 5, we've talked a little bit about staying clear of grains and legumes and especially eggs. I think we have addressed why we don't like eggs related to folks with autoimmune issues pretty clearly. But she did ask a question, which I thought was interesting at the end, was if you have an insulin resistance problem, should you stay clear of eggs? She goes on to say, this last question plays on her curiosity if insulin resistance problems can lead to or related to autoimmune problems.

Robb Wolf:

Yeah. So just to recap, the stuff that we're really looking at with autoimmunity is any type of a gut irritant, and so obviously, at the top of that list is going to be any type of grains and legumes, obviously more gluten-containing grains, wheat, rye, oats, barley, all that sort of stuff, higher than like corn and rice, although all grains, all legumes are potentially problematic in this regard.

Then we start expanding out from there and we see things like nightshades, like potatoes, tomatoes, eggplants, hot peppers. Those can also be gut irritants. Egg interestingly also has a high potential for gut irritation and that the egg white contains a protein called lysozyme. Lysozyme is designed to slice up and break down foreign types of protein, and this is to prevent the egg from being predated or invaded by bacteria and stuff like that. What also happens too if we undercook the egg whites or even just egg whites in general, there's a potential for that lysozyme to cause gut irritation and it causes some rather spectacular gut irritation in certain folks.

So this is that shotgun approach where if we have somebody who has an autoimmune condition, suspects to have an autoimmune condition, who has a lot of systemic inflammation, we kind of just throw out this big broad-reaching net. Cut out the grains, cut out the legumes, cut out the dairy, also reduce your egg consumption. We would probably throw most nuts and seeds in that camp also, maybe the exception being coconut as coconut actually has some gut-healing effects.

And so that's the whole kind of totality of the autoimmune thing -- grains, legumes, dairy, eggs, nuts and seeds. Go free on that stuff for a month so that we can try to reestablish some health. See if you get some improvements out of that shotgun approach and then you can start playing with the type of stuff and the frequency of reintroduction and see how that affects your symptoms. So that's kind of the autoimmune side.

So now, the questions that relates to insulin resistance and whether or not that plays into autoimmunity, all of this stuff is remarkably, unfortunately for lack of a better term, chicken and egg. Autoimmunity can play into insulin resistance in that inflammation and oxidative damage can damage insulin signaling. Similarly, the process of having too high of insulin in and of itself can cause oxidative stress and increased inflammation that can then be precipitating or exacerbating of autoimmunity.

So these things are very, very synergistic. Simply experiencing disturbed sleep for a couple of days can make one autoimmune. So things that are

environmentally irritating that would be subclinical, that would be subacute under a situation of high insulin resistance caused by a lack of sleep even can make one more responsive, so like cat dander or ragweed or stuff like that. We find that allergies are much, much worse in people that have high systemic inflammation in general, have insulin resistance, and sleep is another causative factor.

So this is kind of an interesting thing in which we just sidestep any type of food at all and we just have an environmental insult that is caused by a lack of sleep that can exacerbate both insulin resistance and autoimmunity. So it's all very, very interrelated and it gets kind of tough to delineate what's causing what.

We have a question later that's related to insulin and insulin resistance and I'm going to talk about leptin and the role that leptin plays in all this stuff. And it's complex. It's all get out. It's sometimes hard to keep clear what is causing what but it's very, very clear that these things are synergistic and at least additive and maybe multiplicative like they may actually multiply each other.

Andy Deas:

Yeah. And I think that goes back to your topic that you touched on. Again, there's sort of that shotgun approach because as you said, some of these things are synergistic. They're interrelated. It's hard to exactly say what is the driving force behind that's causing some of these things. Try to pull everything out, fix the sleep, fix all that stuff, and then as far as food goes, you can start to kind of potentially reintroduce certain things and see how you respond.

Robb Wolf:

Absolutely! Yeah. And this is also where it's tough sometimes to get a concrete scientific study to support some of this stuff because you don't know which factor is the issue for a given individual, and so that's where the outcome-based approaches become kind of the gold standard.

Give this stuff a shot. We understand from various sources, both anecdotal and research-based, that these things may be factors. Let's cover all of our bases, and then the elimination, reverse elimination by reintroduction, you can figure out to what degree these things are problems into, what your exposure rate can be under a given a circumstance and still be asymptomatic. Or you can just go wild and do whatever you want to do. That's all up to you then but at least you've kind of mapped out what that scenario looks like.

Andy Deas:

Perfect! That was a good question.

All right, next we have another one of our chia seed questions, and I think last week we talked about a chia seed product, although I'm not sure we clearly kind of illuminated, you know, that we're talking about chia seeds per se. So let's hit this one more time.

So basically, Christina said a few weeks ago she asked about chia seeds after finding out they were high in Omega-3's. She recalls Robb said that they also contained Omega-6's. However, after looking further into it, she noticed that chia seeds have a 3:1 ratio in favor of Omega-3's. If I continue to take them, will it completely raise my Omega 6 levels too high, while assuming I'm continuing to eat a good Paleo diet?

Robb Wolf:

This is a really good question. The Omega-3's in the chia seeds again are that short-chain, that 18-carbon linolenic acid, and we are very, very inefficient at converting that into EPA and DHA, the longer-chain Omega-3's.

And there are some other side problems with that. When we start ramping up the conversion of the Omega-3's we also upregulate the conversion of Omega-6's. So the end sum of this is that again, if somebody is like vegan, if they are just not taking in Omega-3's at all in the EPA/DHA form, then I would sign off on chia seeds, I would sign off on flaxseeds. That stuff's fine. But in general, I don't really see this stuff being a great option for folks if they are not averse to taking fish oil, and probably more beneficial even than that is trying to seek out like grass-fed meat and Omega-3 eggs and wild-caught fish. Trying to get as much of that stuff dietarily as you can I think is a great way to go.

So her question is will she in total raise her levels of Omega-6? No, I don't think so; but because of the short-chain Omega-3's I think that there's still that potential for kind of screwing up that Omega-3/Omega-6 ratio and causing some other pro-inflammatory side effects because of front loading those short-chain Omega-3's and Omega-6's. And I think we talked in pretty good length about that in a previous podcast.

Andy Deas:

So let me turn this around a little bit. So say for some reason I love chia seeds and I'm obsessed with them. I don't even know what a chia seed tastes like. All I think about is these little Chia Pets commercials that we used to see growing up. But anyway, if I was to consume those in moderation, say maybe I like to sprinkle them on my veggies or something, do you have any issue with that? I'm not saying, "Hey, I'm taking this as a high-dose supplement. Potentially I just kind of like the taste of them. I like to add it to certain meals." What's your perspective on that?

Robb Wolf: I think throwing in like a tablespoon here and there of either chia seeds or flaxseeds are fine. I don't know about the chia seeds but the flaxseeds actually have some anti-estrogenic effects. They actually have some long-chain fats in them and mucilaginous stuff that binds to estrogens and they can loop them out of the body. And so they're kind of good for that. It's good for like prostate issue protocols. Poliquin uses them in that regard, but he is not using them for the Omega-3's.

So if you want to supplement them on a conservative basis, I think that's fine. I think both chia seeds and flaxseeds taste horrible. They have that kind of reminiscence moldy fish kind of taste to them because these short-chain fats, like essentially linseed oil is a highly, highly refined form of flaxseed oil, and I think most folks are familiar with the fact that if you take linseed oil, put it on a rag and leave it out in the air, that rag can actually catch on fire, and that is from how quickly the short-chain highly polyunsaturated fats, how oxidizable they are, how massively they react even just with the atmospheric oxygen and room temperature levels of heat.

This stuff goes bad very, very quickly and you're potentially introducing these short-chain saturated fats that are of kind of dubious utility and definitely impose an oxidative load. So I'm just really impressed as to find a good argument for supplementing with that stuff at any real high level.

Andy Deas: Cool! All right. I'm not going to pick up any chia seeds this week, Robb.

Robb Wolf: I doubt the folks that sent me the chia seeds are very happy with me, but well, they're a CrossFit Games sponsor. Maybe we'll find some love there.

Andy Deas: No comment. No comment.

Next, Christina goes on to talk about fish oil. She says, "In one of the episodes you approached the most cost-effective way of purchasing your fish oil. In one question another listener asked, they inquired about the yield of Kirkland brand fish oil of the capsule versus taking swigs of liquid fish oil from the bottle. In the end, you still recommended going with the Kirkland signature brand of fish oil because it was more cost-effective and yielded the same amount as the liquid fish oil.

You've also mentioned in your free nutrition talks that one could get their daily intake of fish oil by eating three cans of sardines a day. So which yields more from their source, Kirkland brand fish oil, fish oil liquid or three cans of sardines with eyeballs and all?"

Robb Wolf: I have not seen many sardines that are eyeballs and all.

Andy Deas: Although we would eat them probably.

Robb Wolf: I would just certainly eat them. The cost-effectiveness on this definitely falls squarely with Kirkland. Kirkland stuff is the most cost-effective way to get your dose of Omega-3's out of all this stuff. The reason why I mentioned the sardines is that people start handwringing and bellyaching about like, "Oh, I have to take 8 or 10 fish oil capsules with each meal."

And so I just pointed out that they could get this stuff from a dietary source and that it's really not that crazy an amount of Omega-3's that we're supplementing. You could get this stuff dietarily from like grass-fed meat or fattier types of coldwater fish. It's just those things aren't always accessible or people don't like them that much. The fact that Christina is mentioning eyeballs and all, you kind of get the sense that she's not a big fan of the sardines. So that's why I mentioned these real easy, accessible dietary sources.

If you are willing to forego a little bit of the cost, pay a little bit more but have convenience, then a liquid fish oil like the Carlson stuff is by far the most convenient way to get stuff done. So what we're looking at here is kind of a spectrum of convenience, cost, efficacy, and all that sort of jive. I would probably throw the sardines plus a little bit of liquid fish oil as being the best way to get it.

The Kirkland stuff is inexpensive and I think relatively good. I still don't know how much like short-chain Omega-3 they've added to their mix and they definitely have changed what their label says. It used to -- it said a given amount of Omega-3 is yielding this much EPA and DHA. They no longer state that. They just state that it contains this X amount of Omega-3's and I think that they're getting a slick on that. There could be a significant amount of short-chain 18-carbon Omega-3 in that. I haven't investigated that yet. So that's definitely an issue. We need to do a little investigating on that to figure out what the story is.

Andy Deas: Yeah. And I think continuing on that line of thought, she goes on to say that the back of the Kirkland's bottle says that it contains a certain amount of soy. Is that a problem since soy is not encouraged on the Paleo diet?

Robb Wolf: You know, when we're talking about lecithin or some stuff like that, I mean it makes life so much easier. Unless you have a real gnarly soy

allergy, I think it's fine. Things like soy lecithin are totally good to go. If they are using soybean oil as a means of propping up their Omega-3's, then I'm going to have a real big problem with that because it's a super cheap, crappy form of Omega-3's.

Andy Deas: Yeah. And I think this is one where back in one of the earlier comments on one of the show notes or the comments someone provided on one of our episodes, someone had done a very nice analysis of like all the major fish oils and cost per gram of EPA and DHA. So I will grab that link and throw it in the show notes because it was pretty interesting. Clearly, someone spent a lot of time doing that, and so I think that's helpful for folks. I finally bit the bullet and went to the liquid, went to the Carlson's, and I'll tell you my life is much more pleasurable since I don't have to swallow large amounts of pills with my meals.

Robb Wolf: Yeah. And the lemon-flavored stuff is actually reasonably yummy and it's very, very easy to get a dose of it down in like a significant amount.

Andy Deas: Yeah, yeah. Big fan although I think it tastes good actually. But then again, we like sardines from the can.

Robb Wolf: Indeed.

Andy Deas: Indeed. We have problems. Okay. So we'll put that comparison link in the show notes. I thought that was cool.

Robb Wolf: Cool!

Andy Deas: Next question, we got a question about body composition and nutrition. "In your first or second episode you talked about Johnny Skinny Britches and what he would have to do to gain weight. You went into some detail about what one should do if someone wants to lean out. I just need to get some clarification on what you recommend for leaning out but still gaining strength. Is it the high fat, low carb way for someone looking to lean out?"

From what I understand, if you choose the higher fat, low carb, high low glycemic vegetable, high lean protein, low insulin spiking foods, low to no dairy that one can lean out substantially, with the downside of a decrease in performance. Is this performance decrease a temporary adjustment, or will I at some point in time be able to keep the leanness but gain the strength after the adjustment period?"

Robb Wolf:

Holy cats! That was like six other questions within the subquestion. So like the overall question here is like can I continue to improve my strength while leaning out? I think that's kind of what would boil this whole thing down.

That really depends on who we're talking about. If we have somebody who is comparatively new to training, and Christina, I would throw in that because I think she has been with us at NorCal about six months. She still is a novice lifter and therefore like we should be able to lean her out, continue to push her linear strength progression which is what we do on all of our on-ramp elements, level I classes.

We're always pushing that linear strength development because virtually all of our clients, even the people who have been with us two to three years, are still what you would consider a novice at best and intermediate strength athlete. They still have not finished the linear progression that they can have on something like Starting Strength program or Max Effort Black Box, which we use the kind of Max Effort Black Box templates in our gym.

So she should be able to lean out in a moderate protein, higher fat, low-ish carb kind of approach mixed with linear strength progression. I think it's really the smart way to go no matter how you're tackling a lean-out program because nobody really wants to either lose muscle or lose strength in the process of that.

If we have a more advanced athlete, we're likely to see some sort of performance degradation in the loss of bodyweight because inevitably and unfortunately, you usually see some amount of muscle mass loss on that. Even on a real low carb, higher protein diet, that will depend on how calorically restricted you are, how much protein you're taking in, what type of training you're doing. But generally, what we find is a stronger, more advanced athlete. We will see some absolute strength decreases with a loss in bodyweight in general.

Andy Deas:

All right. Christina, you're not short in wording. I'm just going to say that.

Robb Wolf:

No. She's got the gift of gab, whether you're chatting her up in the gym or she's writing a question down.

Andy Deas:

Although she did say in the beginning, which I forgot to read, is that she had quite a few questions which might take a while to answer. So feel free to read this by the toilet.

Robb Wolf: Yeah.

Andy Deas: Anyway, moving on. She's been eating more fat which she loves, and she believes herself to be leaning out and she hasn't had any of the negative side effects as mentioned in Episode 5. She goes on to say she believes that you might have said that there was a possibility that she might not consume enough calories in the day eating so much fat. Since she's increased her fat intake, her hunger is that of an anorexic model with a dime bag habit without the bird cage look. Wow! Sometimes she can literally skip meals because she's so full.

How do you recommend eating enough calories in the day if the hunger response isn't there? I've heard that you should only eat when you're hungry, but if that was the case, I would only be eating 1.5 to 2 times a day. Let's play it up and say that I also would not be eating any starchy vegetables or insulin-spiking foods.

Robb Wolf: This is a good, interesting question. If we really sat back and let our hunger drive our consumption -- this is one of Art De Vany's deals. Don't eat unless you're hungry. Maybe wait until you're a little bit hungry even and kind of drive that along.

If we really kind of wrap our brain around that, folks suddenly get very, very lean. Maybe you don't get huge. Maybe we're not producing bodybuilders. Maybe we're not producing 240-pound powerlifters and stuff like that. But, people tend to be lean. They tend to be strong. They tend to have amazing blood lipid numbers and all that sort of jive.

I know for myself because of this constant fixation with trying to get bigger, I just tend to eat more and more often than really what my body would drive me to normally do. And if left to my own devices, it would probably be two to three meals a day and that's about it, and I think that that's probably fine. I think your body has a pretty good ability to tell you when and what you need to eat; and interestingly, when we start doing this kind of lower carb, higher protein, lots of non-starchy veggies kind of approach to stuff, people aren't that hungry. They just don't get that hungry; and even if they go several hours without eating, they're usually pretty good to go.

Where I will see this change a little bit is when people start exercising more, they get more and more active, and then they will tend to get hungrier. But this is just that matching of energy output with energy intake, and it's all regulated by hunger. Both Art De Vany and Taubes, Gary Taubes, talked at length about this, and it's one of the perplexing

conundrums of attempting to lean out or affect some sort of fat loss without some insulin control is that as you start exercising more, you tend to see a lockstep increase with hunger, and it can be a bugger to lean people out if you're not really, really tackling the insulin side of things.

We probably won't get to this question for a couple of weeks, but a guy posted a question from a guy that has a blog. It's like the No BS Nutrition blog. The dude looks pretty interesting but this guy actually mentioned that high insulin levels are anorexic, that they actually shut down hunger, which I need to do some investigating on that because a bunch of the other guy's stuff looks pretty solid, but this seemed like the most paradoxical thing that I've ever heard; like all of my experience, everything I've seen is that if you have low insulin levels, you have very, very low hunger. It's just like an if A then B sort of thing.

So I don't know that this is particularly bad. I think if your body is telling you that you want to eat 1.5 to 2 times a day, that's probably fine. We would dial it back and say, "How do you look? How do you feel? How do you perform?" And if you're failing in one of those areas, then we might need to step up your food and fuel differently.

Andy Deas:

Yeah because I think for me personally, I've fallen to the camp and I think some of it is some lifestyle cortisol stuff, whereas that if I don't force myself to eat more than 1 or 2 times a day, I'm literally never hungry, but in no way do I then see kind of this increase in performance.

And I think we'll talk about it a little in Christina's next question, but I think your point about look, feel, perform, tracking some type of max strength markers or some periodic maybe benchmark workouts to come back to can kind of help dial some of this stuff in. Am I still seeing improvements with what I'm currently doing or do I need to look at the outcomes and maybe adjust some things? Because maybe one to two times a day is totally fine. Maybe it's not. I don't know.

Robb Wolf:

Yeah, yeah. I know like Pavel and a lot of his dudes, they do like kind of an anabolic diet sort of gig where they're generally like high protein, high fat, maybe one big carb meal a week, but they're tending to do like a meal a day, maybe two meals a day. It's a pretty good-sized meal when they eat but they seem to do pretty good on that; and if you're into the whole wiry strength crowd then I think that it's totally legit, and I think those guys are going to age well and be healthy when we think about like intermittent fasting and all those other stuff.

And if you do it in a way where like you said we're not whacking ourselves with a ton of cortisol, it's probably pretty darn healthy and it certainly is easy. I know I want to like blow my brains out sometimes like cooking several meals a day when you get busy and you're doing a bunch of other stuff. It's just frankly a pain in the ass.

Andy Deas:

Yeah. If there was a pill for food, it would be easier. And last question from Christina, she said Andy mentioned something about producing too much cortisol if you work out too much while not getting enough rest in between workouts. She is debating whether or not to increase her current 3 times a week CrossFitting to 4 times a week. I don't want to do too much and have it negatively affect me or hurt my performance. Other than overtraining injuries, are there signs to watch out for if you are releasing too much cortisol?

Robb Wolf:

Folks, signs of overtraining, initially you start getting some sleep disturbance I think is one of the very first things that pops up, kind of like rapid heartbeat when going to bed or rapid heartbeat throughout the day. You'll just kind of click into a mode where heartbeat is kind of racing. You can't turn off your brain at night, rapid heartbeat, not waking up rested or refreshed.

Then that can start turning into kind of paradoxical or reverse cortisol deal. We should have higher cortisol naturally in the morning and then they should decrease towards the evening. And so that would mean that ideally, you would wake up refreshed, alert, ready to roll, and then as the day wears on, you just get tired, and then in the evening you're tired, you lay down and go to bed and all is good. When people start driving into later stages of adrenal fatigue, they'll be very, very tired and lethargic in the a.m. and more alert at night paradoxically, which obviously doesn't do any good for your sleep situation.

So that's all stuff that you can track and kind of keep an eye on. I think watching sleep is a very, very good indicator of whether or not you're training too hard. When we trained Glen Cordoza and some other like legitimate athletes, they're really pushing the work output very, very high. That's kind of the first thing that I'm looking at. When they come in for a session, "How did you sleep last night?" And if their sleep was disturbed the night before, we usually do an easy row, foam roll, stretch, mobility work, and send him home. When we start driving them into overtraining, then I dial them back.

I think in Christina's situation, if she wanted to add a fourth day a week, I would do like the O-lifting class. I would do something that was more

strength and technique oriented. Our general I don't know if we can even still call them CrossFit classes or NorCal classes, functional high intensity classes, we do something like a Max Effort Black Box, which is a strength session, doing pressing, deadlifting, squatting, weighted pull-ups, rope climbs, basic gymnastic skills in the beginning, and then we do some sort of a time-indexed short-ish WOD at the end, kind of classic metabolic conditioning circuit training sort of deal, and that will range anywhere from like 5 to 15 minutes for the most part. And I think that that's a real modest approach but also very, very effective, like minimum input, maximum return.

If I were to do a fourth day a week, I would make a dedicated strength day especially we're in a facility that offers solid O-lifting coaching. So if you've got a dedicated class where you could go get O-lifting gymnastics and powerlifting instruction, then I would jump on that and develop that strength and technical base.

Andy Deas:

Yeah. And, you know, I think what's interesting about this question too, and Rut actually brought it up at the Max Effort Black Box seminar we went to, which I hadn't actually thought about in a long time, but I recall in the early Glassman stuff, he saw this in Tulsa pretty prevalent, and Doug McGuff whose ultimate exercise kind of on the extreme end of the HIT movement, one set to failure or whatever.

But anytime people start talking about adding extra days of exercise, we always kind of go back to sort of the drug prescription, dose response thing. It's like in general, more movement is probably better, but I think Rut brought up the question especially as some of his clients got older, what was the minimum amount of work they could do to see improvement or maintain fitness as opposed to sort of what is the maximum amount they could sustain or support over time.

Robb Wolf:

Totally! And you see this and we have a question at the end from a guy that we'll kind of wrap back around to this. Art De Vany, Clarence Bass, a lot of people have really adopted this approach of like what's my minimum input for maximum return? And I think a lot of De Vany's stuff, it's like really spot on, like those hierarchical sets, alactic sets. Man, that stuff is money. It's kind of minimum investment, maximum return; very, very smart; and you look at what Rut is doing.

All these things kind of start migrating towards, to use a more demanding stuff, an attractor which in economic terms is if you were to make a graph, it's what drags a graph towards a particular endpoint. And so when we're talking about like kind of dynamic or flowing systems, instead

of things changing all time, attractors tend to drag things towards an endpoint; and what we see with regards to training, there's definitely a diminishing return with regards to higher and higher workloads of training.

And this is that point of inflection also I would think between like generalist health-oriented training or fitness-oriented training versus athletics. The differences between first place and second place in athletics, legitimate athletics, are tiny, tiny margins; and so you need to train six days a week, seven days a week, multiple sessions, multiple variables going on. For the generalist individual though, they can get quite a ways down the road, an impressive distance down the road with a relatively curtailed training program.

Andy Deas: Yeah. And I think in general too, it brings you back to the kind of Mark Sisson Primal Blueprint. He's got the high intensity piece, sort of the strength based, but he also sort of has the sort of move frequently and at a slow pace, and I think you see a lot of that stuff in De Vany's. And even I remember Rut talking about some of his clients, on off days, he's just having them do some of the warm-up stuff they do just to keep them moving but not drastically increase workload or stress on the body.

Robb Wolf: Yeah, totally.

Andy Deas: Yeah, really, really good question. All right, Christina, that was an impressive list of questions. Thank you.

Robb Wolf: We'll live in fear of the next round of questions.

Andy Deas: Oh, don't take it personally. Nothing but love.

Robb Wolf: She's one of our favorite clients.

Andy Deas: Exactly.

Robb Wolf: Yeah.

Andy Deas: All right, next we got a question from Chris who is Norwegian. He ends his question by "If my English is bad or unclear, I blame it on that fact that I'm Norwegian." So thank you for that laugh. That was good.

Robb Wolf: I blame mine on the fact that I'm Californian.

Andy Deas: Northern Californian.

Robb Wolf: Yeah, Northern Cali.

Andy Deas: Exactly. All right, so a little background: 23 years old, been doing CrossFit and some extra gymnastics and O-lifting 3 to 5 times a week for the last year and a half. Getting more and more serious. Great improvement the whole time. Two months ago he was 178, fairly lean and 6 feet tall. Started Zoning, 16 blocks with double fat. He lost 8 pounds, got a lot leaner, so lean, lean as he basically ever wanted to be. I guess someday I'll achieve that. And he set some new PRs in everything, for instance, 8:39 Elizabeth, and even had a slight improvement in his total.

So anyway, after consulting others at the affiliate, reading the Robb Wolf blog he went Paleo, no cottage cheese, dropping the fruit, only occasional rice and oats, currently eating about 18 blocks protein, 8 blocks carbs, 54 blocks fat with 8 extra carb blocks on workout days.

Okay, so on to the questions. His goal is basically CrossFit performance. He wants to participate in the sectionals with a goal to reach the regionals. So question one, how much protein? He's been adding in some Max Effort Black Box before his CrossFit WODs. He also does some additional CrossFit Football WODs. He wants to add strength without sacrificing too much. You've mentioned in the last podcast that 1 gram per pound of bodyweight for max strength, but how would that fit into his plan? Do you only increase protein but leave the rest unchanged?

And my favorite part of the question, in the last CrossFit Journal video Barry Sears said that 45 grams of protein was the maximum in a given meal. What are your thoughts?

Robb Wolf: Holy cats! It sounds like he has done a great job of establishing a phenomenal base level of fitness. He is lean. He is strong. He probably has great hormonal response. This is like the ideal person that you then start doing some real just potent tinkering with. It's great. I see this Max Effort Black Box kind of thing there. I would pretty much double his protein and then I would about double his fat intake and probably keep the carbs about the same.

Because at a 6 feet, 178 pounds, he's kind of a wiry, strong, athletic and all that, but I think just from a -- Rip is very articulate on this thing. When you increase the cross-sectional size of a muscle like your quads, your biceps, your triceps, all that sort of stuff, you dramatically improve the leverage that you get out of those muscles. And so sticking just a little bit of extra muscle on this kid is likely to dramatically improve his work

capacity, bigger engine, roughly the same size chassis but bigger engine then he's going to be great to go.

And I think that that's a smart place to start. He is going to be at about a gram of protein per pound of bodyweight at that point. He's going to increase his calories in total. He's probably going to be -- think about that. He is going to be about 3800 to 4000 calories a day. She should see some pretty nice uptick in both his muscle sizing and his strength and all that. He might even move that stuff up further, but I think that that would be a great place to start.

Andy Deas: Yeah. Any thoughts on the 45 grams of protein maximum?

Robb Wolf: It's just ridiculous. I mean it's kind of funny. Barry Sears throws out some zingers that are easy to put to bed and don't really lend much to his overall credibility. So keep going, Barry.

Andy Deas: All right. Question 2: What types of fat? He usually gets his fats from oil and nuts. He uses coconut oil and thinks it has a great taste. But why is it so favorable? It has lots of saturated fat and I really don't know why it's good.

Robb Wolf: It is saturated fat but it's that medium-chain triglycerides so we've got a little bit of different stuff going on with regards to the potential of inflammation, whereas like a palmitic acid does have some potential for some increased inflammation and some increased LDL particle count.

Coconut oil, not really the same issue there, so it's delicious. The fact that this is a saturated fat makes it a very, very low oxidative potential. Like canola oil actually has quite a bit of Omega-3 and Omega-6 fats in it so it's got a high reactivity. So the coconut oil, it's tasty, it's heat-stable, it's kind of a nice variety. Olive oil obviously is great too, but just big, big fan of the coconut oil.

Andy Deas: Yeah. And I think actually, maybe a few days ago also, I know this question was on The Paleo Diet blog, so Loren Cordain's blog. So if folks don't read that, I would check that out. I think he and Pedro Bastos also responded to the question about what are their thoughts on coconut oil.

Robb Wolf: Perfect!

Andy Deas: Yeah, so definitely a good blog if folks haven't checked that out.

And then the next question from Chris. I think you just touched on it a little bit, but thoughts on canola oil versus oil.

Robb Wolf: Definitely the olive oil. The canola oil is higher in Omega-3's and Omega-6's. Olive oil is heavy in Omega-6. It has some Omega-6 in it but if you're using it as a cooking oil, it just makes me nervous to heat up any type of oil that has a ton of polyunsaturated fat in it, and canola oil definitely has more than olive oil.

Andy Deas: Yeah. And then last one on this one, is there any gain in buying the expensive olive oils?

Robb Wolf: God, they taste great. My wife just chimed in. It tastes great. They do have a ton of phenolics like these really interesting like anti-estrogen compounds, highly antioxidant. I don't know. I don't know the guy's situation. If he is some starving student and he ends up paying \$50 for a liter of really good olive oil, then maybe it's not worth it, versus just getting like some standard stuff. It's tough to speak as to whether or not the expensive stuff is a good option or not. It's real subjective as to what the person's situation is.

Andy Deas: Yeah. And this is one for myself. We tend to kind of roll with some standard, regular, cheaper stuff when we're cooking with it, but if it's something that we're actually going to be able to taste the flavor on a salad or something, I always have one or two small bottles of the nice, expensive, very tasty olive oil to use for that stuff.

Robb Wolf: Yeah, and that's a great way to do it.

Andy Deas: Yeah. All right, good. Next question on turnips and rutabaga. I haven't seen rutabaga in a while. I understand that root vegetables in general aren't that favorable. Both potatoes and carrots are no-no, but what about turnips and rutabaga? As far as I know, they do not contain that much sugar and I can't find much info about them. Are they preferred over fruit or not at all?

Robb Wolf: I would generally say that turnips, rutabagas, and carrots also are definitely preferable over fruit because of the low or non-existent fructose content. These root vegetables are actually fantastic for a post-workout meal, for a carb up meal if you're on kind of a cyclic low carb plan, or just if you're just generally eating Paleo. I think that they're a pretty good option. Because of the carbohydrate density they can be overbalanced, though somebody who is endeavoring towards fat loss

should minimize these types of items. But I think in general, they're pretty good to go.

Potatoes don't really land in that camp because of some of the gut-irritating characteristics that they have. So I would eat a potato over toast any day because I think that they are much more benign than gluten-containing items. But as compared to turnips, rutabagas, beets, carrots, all that sort of jive, I think those are better.

Andy Deas: Yeah. I don't know why everyone hates the carrots.

Robb Wolf: It's all Barry Sears deal like those were like a huge no-no on the Zone and so then everybody has been hating on the carrots since then.

Andy Deas: Yeah. And I think I recall my favorite Melissa Urban, now Byers, blog post was something along the lines entitled On the Crazy Train to Carrot Town. Basically, it included her dissertation about why is everyone hating on the carrots.

Robb Wolf: Exactly! A wise, wise woman.

Andy Deas: Exactly! All right, question four, never full and cheat meals versus cheat days? I think we addressed a little bit of this with Robb's idea of increasing protein and fat intake. But after a meal, even post workout with 5 blocks protein, 8 blocks carbs, 15 blocks fat, he never feels full. He is not directly hungry anymore but still never full. That's a bit hard mentally. Any tips?

A cheat meal could be two to three times a normal dinner, and then I'll be satisfied. There were two cheat meal questions on the last podcast, but what do you think about having some more cheat meals throughout the week versus one whole cheat day a week?

Robb Wolf: You know, where she's at with this 5 protein, 8 carbs, 15 fat say like in the post-workout meal, that's still a fairly small meal overall. Well, I guess that's depending on what your carbohydrate source is. It can kind of vary.

I don't know. The fact that he is not feeling hormonal hunger tells me that he is probably good to go with regards to like insulin management and all that, but then just that sense of not really feeling full, I'm not super sure on that. Since we're probably looking at bumping up his food pretty dramatically anyway, like I think that's where he should go to see better performance, then that may take him where he needs to be with regard to that too.

I think he is running a little too lean on this. I think he is running too skinny on calories and would probably benefit from beefing up a little bit. A couple of cheat meals a week versus one whole cheat day, that's just so subjective. I really don't know. It's that thing again where like some people never come back off a cheat day. They actually benefit from really minimizing the cheat meal thing at all. Other people do pretty good with like one, like they'll have some ice cream three times a week or something like that and they're totally good to go with it. It doesn't seem to spin them out.

I do find in general though that -- I know this is true for Nicki. She will start off with like getting a dark chocolate bar, and then the idea is that she's going to have one piece of that a day. And then it's just bullshit because inevitably, she ends up in the refrigerator like six times a day and she ends up eating the whole thing, and then that starts spinning out into other stuff. You just don't see people regulate that very well.

The one nugget of dark chocolate a day just doesn't really play out to me, and that's where I prefer in general to just see the cheat meals pop up usually when you're eating out. It's like you get some crème brûlée, you get like chocolate torte, you get some ice cream, whatever, but eat it out and then you're done and don't have it at home; and I find that people are a lot more successful in that regard.

Andy Deas: For future reference, Robb, I would not talk about your wife when she is in the room listening to you.

Robb Wolf: Oh, my body will never be found when she finally got snapped.

Andy Deas: This is why I think the approach of talking about my wife and I know she'll never listen to the podcast. So as long as she is not around, I'm going to get no rude looks or kind of askew glances like "Why are you talking about me?"

Robb Wolf: I'll take that under.

Andy Deas: You've been married much longer than I have so you may have a better approach.

All right. Moving on, question from Greg. One question that he hasn't seen addressed is what are our thoughts on the alternative options for getting some carbs in besides post-workout meals? For example, I'm thinking about De Vany's style of eating a bunch of fruit at breakfast, or I

know there are some more tolerant of carbs at lunch as opposed to dinner. I know it might be simpler to have clients stick to pretty much standard low carb meals and keep post-workout carbs separate, but is there any logic in your opinion to a scaled approach that has higher carbs earlier in the day and less later on?

Robb Wolf:

You know, De Vany kind of does that. It's kind of interesting, you know, like when we did -- the very first Performance Menu issue was an interview with Art De Vany and that was kind of what kicked off the Performance Menu and also kind of got him back on the internet like he had kind of fallen off the map and we opened up the blog and all that.

And then a couple of issues later, we did an overview of -- an interview I think with Mauro DiPasquale and talking about like the metabolic diet and cyclic low carb diet, and Art wrote me this just scathing email. He was like, "You're an idiot. The cyclic low carb things don't work. This is all too structured and none of this stuff works. Failure, failure, failure!" And I'm just like Christ, man. I mean it crawled up one side of me and down the other.

But then when you look at the way that he eats, it looks pretty much cyclic low carb. It's like he's got days where he'll eat a lot of fruit and other days where he just doesn't have any fruit at all, and he is pretty low carb; and he does it in what he says is a non-structured, natural way, but qualitatively, I don't see it looking at all differently than more structured kind of cyclic low carb deal.

So I see two potential benefits out of this like I think that throwing some carbohydrate in the post-workout period is a smart, sneaky way to get in some carbohydrates to make you repaired and ready to go for your next training session. Mat Lalonde has commented on this and he is completely unsold on the need to do this at all because if you've got upwards of 24 hours for recovery, he doesn't feel like the end stage is any different other than you end up impacting your insulin sensitivity overall with a high carbohydrate post-workout meal, and so he takes a much more moderate approach.

The basic deal is like if you do carbohydrate and protein post workout, you repair the muscles faster, but his question is do you end up repairing them more or better? Like is the absolute magnitude of recovery even greater? And he is pretty convinced that that's not the case, and this is something that I was thinking about today, which is how much training stimulus do you need to elicit a given amount of adaptational response, and then how much food do you take in that is going to potentiate that?

And I think there was an old T Mag article where they talked about this in which you needed a caloric excess when training to gain bodyweight, but more than a certain amount really wasn't going to get you any further down the road. It's kind of an interesting tradeoff with all that stuff.

So fundamentally, I think that this may be not answering the question at all, but I think it's just kind of like however you want to roll with this stuff I think is fine. If you find that a high carb a.m. meal works well for you, I think you're good to go. Poliquin would be horrified by this because he wants to see you do a hunk of protein straight out of the gate because it establishes your kind of insulin-glucagon balance, it establishes good neurotransmitter status. It's hard for me to imagine a better scenario than like a high protein breakfast with some espresso. That just sets the day so good for me. It's really hard to imagine how a big fruit bowl is going to improve upon that, and I've tried both ways.

For me, I don't see how the hunk of fruit early on would be an improvement off of some protein and coffee, but it's certainly there for the tinkering. I still think if you are really trying to push your absolute recovery capacity, like post-workout carbohydrate may be the way to go, but then again, it's just all tradeoffs. If you focus more on kind of like insulin management, then maybe you don't need the post-workout carb whack or a very, very modest whack.

Andy Deas: Yeah. All right.

Robb Wolf: There's a lot of variables to it. There's just a ton of variables and there's no right answer to just kind of like what's the best answer for you in your situation, but there's ton and ton and ton of variables.

Andy Deas: Yeah. That was a good question.

Robb Wolf: Very good question. Yeah.

Andy Deas: All right. Next up we got a question from Mary. She has a girl training with her who was diagnosed with hypothyroidism about a year and a half ago. She's up to 240 pounds at 5 feet 4 inches and has been doing super strict Paleo for 6 weeks with limited fruit and about 1x fat intake. She has not lost a pound or any inches. She's been CrossFitting 3 days a week and really pushes herself in the workouts. Her doctor has her on Synthroid and Cytomel, and she has more energy now and her strength has improved a lot, but she is frustrated with the lack of weight loss. I was wondering if you had any experience with hypothyroidism and Paleo.

Robb Wolf: Yeah. We've had a ton of experience, and usually, Paleo can help with the hypothyroidism. Gluten-containing items, stuff like Hashimoto's thyroiditis and other hypothyroid situations are really, really common within a grain-based kind of scenario. We definitely -- sorry, we just had somebody show up at the door and they're downstairs talking.

Andy Deas: And you still haven't oiled those hinges. Damn it! I knew I should have done that.

Robb Wolf: We haven't oiled the hinges. We need to disarm the doorbells. Sorry, folks. I lost my train of thought.

So yeah, we've seen Paleo benefit hypothyroid dramatically like from people being on Synthroid or Armour and then going off of Synthroid and Armour. It doesn't always happen but it frequently does. But that said, if this individual is on Synthroid and her thyroid levels are in normal parameters, then we should at least see some sort of forward movement on this.

When I hear real strict Paleo, that sounds good. I would probably want to see like a five-day, ten-day meal plan out of that and just see what exactly compositionally we're seeing here. When I see someone say limited fruit, that makes me nervous. The fact that they even mention it makes me nervous because when you start dissecting all this stuff then it's like the limited fruit ends up translating into like three bananas and an apple for breakfast and stuff like that.

And so I would want to see how much fruit she is taking in. I would want to know what her sleep is like, some stuff like that. Because usually, we see some pretty good out of a person like this so I would just want to see a little bit of what's going on.

Andy Deas: Yeah. All right. All right, next question from Drew. Hey Robb, I've been looking for studies that show the specific mechanism by which high insulin levels cause insulin resistance in the body. Do you know of any studies that explain this? Or could you explain it? I've been engaged in a nutritional debate with my nutrition professor at the University of Washington, and I'm trying to get them to be more objective in their approach to teaching the 300 level class. As of now, it's basically an extensive course in the USDA guidelines.

Robb Wolf: That sounds like a party. Nobody knows 100% for sure what's going on with all the stuff we mentioned earlier that high insulin levels appear to induce a situation in which you have a receptor site downregulation. So

it's that perfume analogy that I've mentioned before. You walk into a room, get exposed to real high perfume content, your receptor sites downregulate in response to that, and then your ability to sense the perfume decreases. And so there's kind of a similar analogy in this regard with the insulin resistance.

We also know that oxidative damage and inflammation damage insulin sensitivity. Lectins like from grains, legumes, and dairy appear to damage insulin sensitivity. So this is kind of a multifactor, multivariate situation in which there's a ton of different things that affect insulin sensitivity. Lack of sleep impacts insulin sensitivity, and the mechanism on this is not super well understood. Cortisol appears to be a factor in it. When cortisol levels start going up, then insulin sensitivity decreases, but it's not fully understood exactly what is going on with that.

So it's interesting that you have dietary factors, both with regards to just simply carbohydrate intake that appeared to be an issue. But then within that, we look at things like the Kitava study in which the Kitavans are eating a 60% carbohydrate diet, both no grains or legumes and no dairy, and they appeared to maintain really solid insulin sensitivity throughout life. They start introducing any type of lectin-containing grains, legumes, dairy, and then they start losing insulin sensitivity and start expressing metabolic derangement and cardiovascular disease and stroke and all that sort of stuff. And then you have a completely non-dietary vector of sleep deprivation that can impair insulin sensitivity.

So there's a lot going on here, but for sure, like if you want to find a group of people who have their head further up their ass with regards to metabolic derangement, you can't find it other than inside the halls of the standard nutrition, you know, Chico State Nutrition.

I had a woman just send me a spicy email because I've given the Chico State Nutrition Department a pretty good tongue-lashing a couple of years ago, and she sent me an email complaining about the unfair treatment and all that stuff. I wrote her an email back saying that basically, they had no science going on, bereft of science, where we've heard that before, but then I backed the whole thing up by saying, "If you guys are interested, I'll fund an undergrad and a graduate student to the tune of \$1000 semester to do research that is related to the Paleolithic diet," and I've had no response from these people. So I offered to actually fund undergraduate and graduate students in this topic, and they're so haired out by the notion of Paleo that they won't even take money from a graduate student. It's just ridiculous.

So that's where a ton of people shoot me emails wanting to know, "Hey, what can I do for continuing education and nutrition? Should I do a registered dietician track?" And it will get you in the door, it will give you some anointing to be able to run your own practice, and then obviously, you can run it however you want to; but you're going to want to drive an ice pick through your forehead like every day that you are there because most of what they're talking about is completely wrong, and it's not steeped in any type of -- they're still kind of scratching around the dirt. They haven't figured out an all-encompassing theory by which to look at the studies that they're generating.

So I don't know. Drew has got a tough situation there.

Andy Deas: I have this image of you, Robb, arguing with college professors all throughout your education process.

Robb Wolf: Actually, chemistry was pretty laid back in that regard. There's not a whole lot to argue in that camp. So yeah.

Andy Deas: Coming from the guy who once said he burned a house down to make a point.

Robb Wolf: Well, when necessary, I have to make a point.

Andy Deas: All right. Moving on, we got a question from Jon and I enjoyed his little background so we're going to read it. So Robb, I truly enjoy your site and podcasts and this is going to come as a shock, but I'm a vegetarian. My wife and I both are actually. She doesn't eat any dairy either since she is lactose intolerant.

We started it out as an experiment about two years ago because my wife has cystic fibrosis and was having a hard time digesting any kind of meat. Her digestion got better but still not the best due to irritable bowel syndrome, diabetes and complications with the cystic fibrosis. We have both recently switched our views to more of an ethical reason to not eat meat. Don't worry. I'm not the type to throw red paint and tell people meat is murder. I don't push my beliefs on anyone.

So first of all, I want to say, Jon, we appreciate you reading and I'm going to quote Mike Boyle, but disagree doesn't mean dislike. We're more than happy that vegetarians read Robb's blog.

Robb Wolf: Yeah, even though I focus on them a lot. Yeah, totally.

Andy Deas: So anyway, I appreciate the background. So he has two questions. What can help out my wife's digestion? She does eat grains. I tell her to limit it, but she doesn't listen to me often. She eats beans nuts, fruits and vegetables, tofu, tempeh, quinoa, and we have stopped eating rice.

Robb Wolf: You know, cystic fibrosis is a sodium pump mutation. So the folks tend to accumulate fluid in the lungs. They have some hydrochloric acid production problems in the gut and the stomach. And not surprisingly, although it's not surprising to me, there's an autoimmune component to this.

So a long time ago, there was a condition, porphyria cutanea tarda that we became aware of, which is a condition in which people get exposed to sunlight and they get these burns all the way down to the periosteum of the bone. We make people aware of the fact that gluten and transglutaminase is a factor in this, and it helped a bunch of people.

And then every once in a while, I'll get somebody typically from a porphyria support group and they'll pay me a very snarky blog post and they're like, "Porphyria is not an autoimmune disease. It's a genetic disease and it's there." And they don't even appear to read the fact that a bunch of people would cut gluten out of their diet and then they're asymptomatic from the porphyria.

Cystic fibrosis is similar to this. Professor Cordain has some research in process on this whole thing in which people doing a gluten-free, dairy-free, Paleo diet ends up seeing dramatic alleviation of their cystic fibrosis symptoms. So this is one of those things where it's kind of like I understand these folks are tackling all this stuff for ethical reasons. What's the book the Eades referenced? The Vegetarian --

Andy Deas: The Vegetarian Myth.

Robb Wolf: Myth? I really recommend that they read that. Give that a shot because there's this woman who used to be a vegetarian. She's real staunch, a feminist and everything, and she pretty well deconstructs the whole notion that vegetarianism is an ethical option or even an environmentally superior option. So I would give that a read.

And then I would consider for again that 30-day buy-in. Try doing some sort of a gluten-free, dairy-free, Paleo diet and then you know that you've answered that question. You've turned that rock. You can say, "Yeah, I look, feel, and perform better like the issues related to cystic

fibrosis have improved.” Or they don’t and then you can go on from there.

Short of that or even in conjunction to that, since the digestion is a big issue because of limited hydrochloric acid production in these folks, I would recommend that old standby of the NOW Foods Super Enzymes which has betaine hydrochloride. It’s a hydrochloric acid supplement. It also contains things to help you digest protein, carbohydrate, and fat. I would start off with like two of those per meal, but each meal must contain a dense protein and fat source, must.

It has hydrochloric acid. If she is eating a fruit bowl with this, she’s going to have significant problems. So I can’t be any more clear than that. It must have some sort of dense protein source -- tofu, tempeh. I guess if she is insisting on continuing to be vegetarian, that’s where I would go with that to the degree that --- the quinoa also has a protein fraction in it that can cross-react with celiac, beans. There are some problems in there.

I mean she has a condition that I would be willing to wager would dramatically benefit and possibly even go into remission with a gluten-free, dairy-free, Paleo diet, and it would be a month or two months of experimentation to be able to answer that question. So I’m very hard-pressed to find a reasonable suggestion for not at least giving that a whirl especially when you consider that cystic fibrosis doesn’t usually have a great end stage kind of scenario.

Andy Deas: Yeah. And at least consider also I think the book *The Vegetarian Myth* I think is interesting and thought-provoking for whether you’re a vegetarian or not. I think there are some really interesting concepts and topics discussed in there.

Robb Wolf: Absolutely! Yeah.

Andy Deas: Yeah. All right. Second question from Jon, with her conditions, I know fish oil would be beneficial. What is a good replacement?

Robb Wolf: There is a not krill but a kelp-derived. There’s some sort of a vegan DHA source. I forgot what it is. If you do a little Googling you can track it down. The DHA can and will interconvert into EPA if the individual has high insulin levels that process slow. Almost inevitably if folks are eating kind of standard vegetarian diet, then they’re going to have high insulin levels. So that interconversion is going to be limited so a lot of the anti-

inflammatory effects of the fish oil are going to be mitigated in this case, but it's better than nothing. It's a big, big step in the right direction.

Andy Deas: Good. All right.

Robb Wolf: And again, like just the digestive support, the NOW Foods Super Enzymes, starting off with about two capsules per meal and ramping that up until she feels some heat in her stomach, and then she would dial that back a little bit.

Andy and I need to do an actual video on this. I need to draw some stuff and make this really clear what the protocol is because people can really goof themselves up with it that you are wrong. So I need to draw this whole thing up because folks have an amazing way of selectively listening to or remembering a lot of this stuff. So this is pretty important so we'll try to get that banged out pretty soon.

Andy Deas: Now you've done it. You've made a commitment to our six listeners. There's going to be an uprising if we don't get that done.

Robb Wolf: Absolutely!

Andy Deas: All right. That was a good question. Robb, we're going to skip the next question. I think we've kind of addressed the coconut thing, although there's a dimension of that we'll come back to but not in this episode. I think it's kind of a broader question.

Next, we got a question from Andrea. She saw one of your seminar videos where you talked about the Alzheimer's being type 3 diabetes. Can you touch on that in one of your podcasts?

A couple reasons for the question. From a hereditary standpoint, my father comes from a family of three kids, three of which have been diagnosed including my dad, and another sibling who we suspect has Alzheimer's. So my obvious concern is to do whatever I can to minimize the chance of getting it. And is there something that can/should be done to help my dad? He was diagnosed two years ago.

Robb Wolf: So the Alzheimer's, they call it type 3 diabetes. It's effectively diabetes of the brain. It's very, very common for the individuals with Alzheimer's to have had no real overt symptoms of hyperinsulinism throughout their life, and the most obvious example of that would be obesity. So these folks tend to be comparatively lean their whole lives. It's like, "Oh, yeah, my Uncle Fred" or "my Grandpa Jo, he ate horribly and never put on an

ounce and then he had Alzheimer's and ended up dying from it." And this is like the just 9 out of 10, 9.9 out of 10 folks that seem to develop Alzheimer's kind of follow this progression.

When you are aware of some of the stuff that Poliquin talks about, the Biosignature stuff, the fact that different tissues have different insulin sensitivities and different sensitivities to all kinds of hormones, then this starts making sense; and what we have is that people who are dietarily and environmentally exposed to too high of insulin levels, these individuals, for whatever reason, the main area that they suffer oxidative damage and insulin resistant type damage is in the brain. It's effectively the blood-brain barrier that is the main site that this starts occurring, and then oxidative damage occurs in the brain.

The best thing you could do, I mean if we change this again, if we're not talking Alzheimer's and we're talking sunburn, if you've got sunburn, what you do is you reduce your sun exposure. If you've got Alzheimer's which is effectively a form of diabetes from insulin resistance, then you decrease your exposure to insulin which is decreased dietary carbohydrate. And sleep. Take some fish oil. So those are the things that you would want to do to effect some change here.

For the father, it's going to be tough. I just find most folks don't change their ways. They're pretty much on the boat that they're going to be. If you want to give it a shot, obviously, give it a shot. For her, she should eat a low-ish carb Paleo diet. Supplement with fish oil, supplement with vitamin D, and make sure to get plenty of sleep in a pitch-black room.

Andy Deas:

Yeah. And then I think the second part of the question is she said she's been working with her mother trying to get her to make dietary changes. Discussed Zone, discussed Paleo with her. Her rebuttal has been/continues to be there were doctor's recommendations that the elderly need to consume carbs by the way of grains, etc. Can you shed any light on why this is the recommendation? What is the appropriate rebuttal?

Robb Wolf:

I'll probably get arrested at some point, but her doctor is an idiot and doesn't know what he is talking about. I mean that's standard American Dietetic Association recommendations and it's just preposterous. But that's their doctor, they wield the power; but as a consumer, as essentially a medical consumer, you do have the right to be educated and you do have the right to ask questions, and she also has the right to try to shop around and find a doctor that is more amenable to helping her parents try alternative paths with this.

And if you could get the doctors to sit down and walk him or her through these metabolic processes, usually, you can get some sort of grudging acknowledgements on their part that's like, "Yeah, okay. This does make sense." But then we start dealing with the standard of practice type stuff in which the doctor needs to effectively follow what the AMA, ADA recommend; and if they don't, then they're pretty much hanging their fanny out in the breeze with regards to liability. So we're very much in a rope-a-dope on that.

Also, I think my parents came from a generation in which the doctors knew everything and they just completely acquiesce all of their control of their lives and livelihood to the medical establishment. So the doctor knows all. The parents are going to take any type of active role on their health. It sucks and that's pretty much it.

Andy Deas: Yeah. I think my second book plug of the episode is Dr. James Carlson. I think he is a doctor in I want to say New Jersey to New York. I believe he is a doctor and a lawyer. He wrote the book titled "Genocide: How What Your Doctor Doesn't Know About Nutrition is Killing Us" or something along those lines. A very interesting read. It's not strictly Paleo but pretty close, and I think he addresses some of this kind of things with the medical field and some of the challenges and things in that perspective, and his practice is mostly low carb kind of etc, etc. So I think an interesting book for folks to check out.

Robb Wolf: Yeah. That genocide analogy -- Greg Glassman years ago on the old crossfit.blogspot.com made a commentary that was essentially our nation's dietary practices and dietary recommendations from the American Dietetic Association, American Medical Association. They kill people. They kill people early, they don't fix much of anything, and the rate of death is on par with what you would see in a genocide situation. I forgot what statisticians cut that off that, like 300,000 people in a year, a million people in a year or something like that. But we're there. We're absolutely there. And you sound like a crazy person when you say this stuff but sometimes the crazy notion is actually the right notion.

Andy Deas: All right, good question. Next and final question, Robb. We have made it.

Robb Wolf: Woo-hoo!

Andy Deas: All right. Interesting question from Michael. Hi, Robb. Your podcasts have blown me away, though I'm not in what I take to be your intended audience. Still, I'm a person who must fit the description of many clients

of the trainers in the audience. I am not a serious athlete. My goal is simply to maximize my physical and mental health and longevity.

Nutrition: Good meats, veggies, modest nuts and seeds, few cheats. He can do that. Sleep: Lots. Exercise: Ironically, your podcasts have not clued me in on this yet. What do you recommend in terms of exercise to maximize the chances for living comfortably to an advanced age? P.S. I'm trying to ask a general-interest question but please address it to the full range of ages. For example, he is 50-ish.

Robb Wolf:

Really good question. The intent of the podcast, and we're constantly working to balance this, really is the generalist person. We touch on some fairly high-end topics and get a little long hair on this stuff, but the reality is that there's just a lot of complexity to this stuff, and so we have to get into a little anatomy, physiology, training theory and all that to just explain what it is we're doing.

It's really easy to say do this, this, and this; but then people ask these pesky questions related to why, and then you kind of have to fill them in or you know like the previous deal where the girl's mother's doctor is telling them to eat a high carb, grain-based diet. And it gets into a lot of why to be able to refute that stuff, so we really do want this thing to be as generally applicable as we can while also touching on some of these higher-end topics.

But then, this idea of what's kind of an optimized training schedule, especially as you age, John Welbourn and I, we were checking out davedraper.com and Dave's late 60s, early 70s I think and just jacked like he was always a phenomenal bodybuilder, still like amazing physique, very, very healthy, has maintained that kind of bodybuilding lifestyle throughout his life. The dude maintains a ton of muscle mass, a great metabolic profile.

When you look at people who aged effectively but I think were also unlike like the Roy Walford approach to aging, the guy that was in the Bio-Dome deal and caloric restriction guy. He was tackling this from a caloric restriction standpoint and the guy was emaciated, nothing short of emaciated. And so I think that everybody is looking at this from a perspective of I would both like to look good naked and live healthy and die of old age.

And so you start looking at some stuff and it starts looking a lot more like some sort of variable bodybuilding approach with like some intensity work occasionally, some long, slow, ambling work occasionally. Dan John

has been writing about this stuff a bunch. Rutherford has talked about and has written about this stuff a bunch.

Maybe as some sort of a theoretical template, you might say that you would have like two solid strength days a week, maybe like a full body deal or maybe a split kind of program; two metabolic sessions a week, metabolic being kind of relative. It might look something like a CrossFit type workout or it might look like intervals on rower or swimming or running; and then I think a day or two of really low level ambling activity.

That fills up your week. That's six days a week of training, training being held in quotations, but there's a ton of variety there and no single day is getting a massive amount of overlap from the other days. They're all quite distinct and very unique in the type of metabolic demands that they impose on you, and also what type of adaptations you're going to get from them.

I know for myself, some of my danger that I've faced in my training is that everything slides so much towards that kind of higher intensity side that you never really do anything else. You can slide into a deal where you never really lift heavy; but yet, you never really get out and just walk and hike around for three hours at a time. And I think that that's a great mix in all this.

You look at what Art De Vany does. Get something to contemplate. It just kind of popped into my head. What is the nutrition approach, what is the lifestyle approach, what is the training approach that has worked for Art De Vany, Mark Sisson, and Michael Rutherford? And can you think of it, but he's also kind of in that like 50 to 70 European like Clarence Bass.

Andy Deas: Yeah, I was going to say don't leave out Clarence Bass.

Robb Wolf: Clarence Bass. Dave Draper might be a good example but I think he is a little bit more on that bodybuilder side. But if we deconstructed their diets, it tends to be pretty high protein, plenty of vegetable matter.

Clarence Bass tends to be a little bit on the high carb side for me, but it's worked for him. The dude has always been very much aware of good fat intake and all that sort of jive. He had kind of a bad experience doing what he thought was a low carb diet but was an old protein deal like he didn't have any fat, and that was back years ago and nobody has ever been able to get up to try like a low carb approach. Since then, Rob Fagan has tried it. A bunch of the people who have tried to eat this won't go near it.

But the basic deal is like unweighed, unmeasured good food. That's been his approach. That has been De Vany's approach, Sisson's approach, Rutherford's approach. And then let's look at their training. It typically has been challenging, but rather modest also. Like Rutherford has competed at a high level in Olympic weightlifting. Several times he had national championship in there, but he will peak in O-lifting and then he'll shift into interval running stage of his training, and then he'll shift into what, for all intents and purposes, looks like a bodybuilding phase of his training.

And the guy at 50 years old is like 200 pounds and probably 8% body fat and can whoop some ass on about anybody else, age group, and you match him up at about any type of event and he's going to do pretty damn well. De Vany has some great performance parameters, great body composition. Mark Sisson, same deal.

Let's look at some other people who advocate diet and lifestyle activities that they can't even follow their own prescriptions. I don't think Barry Sears exercises or follows his own, and there are some other coaches of notoriety that don't follow their own exercise prescriptions or nutritional approaches.

And this is something that Poliquin made a big point because I asked him, actually Poliquin at the Biosignature thing, I asked him a similar question to this, and he actually got kind of frustrated with me. He was just kind of spun up about the whole thing and he's like you need to figure out who you are and what you like and then find what you can do over the course of a lifetime, and it needs to be challenging and it needs to be fun.

And interestingly, like Poliquin eats a low carb Paleo diet, kind of cyclic low carb Paleo diet, and he lifts heavy weights and he essentially does like a power bodybuilding deal, and in his late 40s, the dude is jacked. He has phenomenal performance. I don't know what his Fran time is, but he looks good in a bikini, and I think he's probably more robust than most people.

So I think finding something that is sustainable, challenging, reasonable, and I think some sort of template that ends up looking not too far afield from a little bit of bodybuilding, a little bit of sprint work, and then a whole lot of fun. It seems like it would be a real good spot to be at with an aging athlete sort of scenario.

Andy Deas: Yeah. And it seems like most of those folks, I mean if I was to think about it, I mean they're all strong, strong being relative, right? I mean those guys are really -- most of those guys that you talked about are really strong I think in an absolute fashion for their age group, but they're relatively strong, super mobile and flexible, and obviously, they have a fair amount of capacity.

But I guess I would argue for most of the folks, if I looked at the kind of what my parents have gone through that didn't work out for a long time and then in their late 50s and early 60s started exercising, they got the bigger bang from their buck for kind of increasing their relative and absolute strength. They're by no means strong, but relative to their age group, and worked on getting them moving better. Get some of their flexibility and mobility back.

And then when I think about Bass or Sisson or any of those guys, how they're handling that work capacity stuff, it's some type of interval-ish, intensity being relatively high but for most of those folks, it's probably not high compared to some of our pipe-hitting 22-year-old CrossFit athletes.

Robb Wolf: Right, right, which is the same thing that you kind of see extrapolated across the whole all age groups. When you go to a masters' jujitsu tournament, masters' strongman deal tournament, you kind of see a similar deal and the people who do real well with it are usually very, very good at figuring out where they're kind of B level, B+ game is and maintaining that instead of driving into that attempt to the A+ or elite level.

The reality is elite performance of whatever flavor you want to look at, the return on investment starts costing you and that's just an absolute fact of physiology and biology. I think the legit kind of longevity orientation, it's that good enough is, like a B, B+ is good enough because orthopedically, metabolically, hormonally, it's giving you everything you want without really taking too much away from you.

Andy Deas: Yeah. And I think all this to me comes back to -- and I think Rippetoe would agree with this. I know Cressey made something similar, a statement along this where he basically said, "For most folks, I don't care who you are, whether you're an athlete or you're my grandma, probably strength is the most important quality to build and maintain over time."

Robb Wolf: Absolutely, yeah. And within that strength I think is implicit this full range of movement kind of concept, which then brings us around to mobility

and all the rest of that stuff. It starts becoming very synergistic or multidimensional. When you've got a focus on the strength and mobility side of things, then the ability to build work capacity is kind of -- it's just a downhill slope from there.

Andy Deas: Yeah. And I think for Michael, for folks around this age, things I think we would both agree that we would love generally is like things like sled-dragging. As we get older, heck, I'm only 32 but I guess enjoying stuff and things for work capacity like sled-dragging. I think it's phenomenal for my knees and hips. I can row so I like to row. If you look at Sisson and all those guys, none of them are really running at their age.

Robb Wolf: Right, right. Or if they are, it's -- I know De Vany used to be a big fan of like the 5x100, 10x100 sprint day and stuff like that. You get out and get warmed up early and then do build up some of the sprints for recovery, all that sort of jive. Yeah.

Andy Deas: Yeah. Great question, Michael. Good, good stuff.

Robb Wolf: Yeah.

Andy Deas: All right, Robb. With that, we're wrapping this up. This is the longest episode ever recorded but I was committed to getting through most of the questions today.

Robb Wolf: Well, folks can chop it in half and listen to it in pieces.

Andy Deas: Yeah, all six. Hopefully, we'll have all six when we come back next week, but with that, that is Episode 10, Robb. I thank you for your time and you have a good afternoon.

Robb Wolf: Thanks. We'll talk to you soon.

Andy Deas: All right, see you.