

The Paleo Solution

Episode 8

Andy Deas: Robb, good afternoon. Andy Deas back for Episode 8. What's going on, man?

Robb Wolf: I haven't died yet so I'm still here.

Andy Deas: That's always a plus. It would be hard to do a podcast with you when you're not here, Robb.

Robb Wolf: Yeah. It would be some sort of an Elvis sort of thing, you know, so we have to get a medium and channel that gig.

Andy Deas: Which could be sweet. I could make money off that I think.

Robb Wolf: It could be very cool, very cool.

Andy Deas: All right. Well, once again, another cool group of questions. I'm super excited about some of these as always. I think the first thing on the list we wanted to talk a little bit about was just we had a poster on the blog I think who asked a couple of questions about migraines, Paleo, ketogenic diet, and stuff; and so I thought I would just share with the listeners who don't read all the blog comments sort of my wife's experiences, what we went through, and sort of some of the success we've had with ketogenic diet and her migraine. But I know you've worked with some folks personally as well. I didn't know if you wanted to throw anything out first.

Robb Wolf: I guess maybe just a quick little bit of background on it. We have, I don't know, maybe about 20, 20 specific people I could think of that we've worked with that had severe just debilitating migraines, like these people would end up in the hospital frequently. Imitrex and some of the really gnarly anti-seizure type meds were frequently in rotation for these folks.

And doing some reading on migraines and some of the similarities between what happens in the migraine and some epileptic type stuff, there appears to be like glucose balancing issues, some calcium homeostasis issues, which what that means is just kind of maintaining the normal levels of calcium, magnesium, all that sort of stuff in the brain tissue itself, and the ketogenic diet is very, very powerful for normalizing all those problems. So we put these folks on like a gluten-free, dairy-free

Paleolithic diet, but with a ketogenic orientation, so moderate protein, just a little bit on the low side, very low carb, and then higher fat; and these folks have just seen some stunning improvements in their migraine symptoms.

Andy Deas:

Yeah. So personal experience with my wife, I've known her for going on 11 years, and ever since I've known her she's had pretty debilitating migraines. In college, we experimented with her with a ton of different medications. Eventually stuck with Topamax, which is another one of those anti-seizure medications. It has some of the nasty side effects, itching and all that stuff when you kind of start taking the medicine. We gather up to I think 200 milligrams a day was the final dosage; and at that dosage she got no migraines, which was great.

We started to have this philosophical discussion. Long term, how safe was that? There are some issues with trying to get pregnant eventually on it. And I read something from Robb a couple of years ago, which he had suggested a ketogenic diet. I suggested it to my wife, and of course, she dismissed it out of hand because it's coming from me and you know. I'm her husband or boyfriend at that time. What do I know?

But about a year and a half ago, Robb had stayed at our house in Arizona. He made the same pitch to my wife, Rachel. Robb is obviously much more persuasive than me. And so we started really focusing on Paleo diet, ketogenic. So basically, we didn't weigh and measure anything. We basically stuck with the lean meats, veggies, nuts and seeds, quality fats, and just started to roll with that.

It was kind of hard to tell how successful it would be because she didn't have any migraines on the Topamax at the 200 milligram level. So we rolled with it for I think three or four months before we went back to the doctor and said we want to try to wean off this medicine. Our doctor was pretty understanding for several years. We've tried a couple of different things to get her off the medicine and it never worked. So after three or four months on the ketogenic diet, we started just with lowering her dosage by 25 milligrams a month, so every month we lowered 25 milligrams starting at 200 all the way down to zero, and when we got to the end, voilà! No migraines! And it was like magic. I mean we were both shocked, probably my wife less than I was; and since then, no migraines.

Now, we've noticed, if we go through a path where we're not super strict on the diet and some kind of Neolithic foods start to slip in, if we go on vacation and cheat a little bit, we can definitely cause some migraines; but as long as she stays on the straight and narrow, no headaches.

Robb Wolf: And her headaches were bad, like she would end up in the hospital from them.

Andy Deas: Yeah. And she'd be down for two to three days, you know, and not functioning at all, and that was why even when she was on the Topamax and it worked, we started to look for a lot of alternate philosophies. We did some of the stuff -- Robb, I know you're a big fan of heavy sarcasm here -- kind of the muscle testing and all types of things, trying to come up with solutions and we couldn't find anything, and this worked fantastic.

And the other interesting thing, and this kind of goes back to some of the discussions we've had about ketogenic diets, how well they work for certain folks given their activity level, when we started this, my wife was doing some pretty heavy dosage CrossFit style workouts four to five days a week full volume, and she after she adapted we saw no performance decreases for her; and in fact, we definitely saw an uptick and we drastically improved her body comp, etc. etc. and she felt great.

Robb Wolf: Yeah, yeah. She was the second person that I had seen who was like fully legitimately like ketogenic diet but doing a kind of .com, pretty high volume CrossFit style training and was doing fine on it. Scotty Hagnas was the first person that I had seen.

I never really, even when I was doing more ketogenic diet stuff, I had always scaled my WODs a little heavier and a little shorter so I never really considered mine a real good test of that, whereas both Scotty and Rachel were definitely doing like full kind of .com training and doing real well on it, although despite being in ketosis.

Andy Deas: Yeah.

Robb Wolf: Yeah.

Andy Deas: So yeah, I just thought with a couple of comments on the blog I think from Steven, I thought I would just share that because I think we've seen great success with us. For us, it was a life changer for my wife. I mean it's something we've researched for several years, didn't get good answers and everyone was worried about, "Okay. If you're on this for 30 years, what are the side effects? Do we know?" And so this was like the simplest and most successful solution we've found.

Robb Wolf: Yeah. I think for like a cost-benefit deal, return on investment, it's like give it a shot for a couple of months and worst-case scenario, it doesn't work, although I honestly think we're batting like a 99%. We have not had anybody who had serious migraines do a legit ketogenic Paleo diet and not have them completely resolved. So, so far knock on wood. So far so good. If compliance is there then people usually get the results.

Andy Deas: Yeah. Cool! Good news, Robb. Forever grateful on that one, buddy.

Robb Wolf: Oh, man, my pleasure. Unfortunately for you, I roped you into moving to Chico. So life is forever ruined now.

Andy Deas: It could have turned out much worse, you know.

Robb Wolf: Yeah. That's true.

Andy Deas: All right, cool! Next question, we got a couple of different people posting this. So OPT, James Fitzgerald had posted two links to some YouTube videos from this Professor Peskin and his thoughts on fish oils, and I know this kind of we saw a big spike in debate around fish oil on this, so I thought maybe Robb, you could give a little description about what Peskin was saying and sort of your opinion of these videos.

Robb Wolf: Well, Peskin went through -- and it's two videos. Each one is about 8 to 10 minutes apiece and he reads a number of studies that seem to indicate that taking fish oil is at best worthless, at worst problematic, and problematic from that standpoint. Largely, I think what he was looking at was kind of cardiovascular disease type stuff, strokes, angina, full-on heart attack, all that sort of jive.

And, you know, it's intriguing stuff that he mentions but he does not cite -- well, I guess he does mention these studies. He mentions who did them, where they're from and all that sort of stuff; but being somewhat lazy, I didn't write all the stuff down and then go, "Well, look at these things." Like he just mentions basically the abstract and we don't look at like the setup, we don't see any of the actual variables that they're testing in these studies.

And so basically, he goes through and maybe reads like 30, 40 studies. The studies seem to indicate that taking fish oil is some sort of a problem. It kind of stretches my credulity on it.

And then it's interesting, on James's site, he had the Peskin stuff on one day and then he had a follow-up video, or not a video but an article that -

was it Enig or Fallon? I forgot which one, one of the Weston Price gals. They kind of took Peskin to task saying the dude was kind of a quack, that the guy had been chased out of one or two states for playing himself off as some sort of a medical doctor when he's actually an electrical engineer, and he's got some kind of whacky ties to like a supplement company and everything.

And so there's some kind of credibility stuff there that's a little bit like, "Ah, I don't know. Maybe this guy's credibility is a little bit suspect." And then he mentions all these studies that seem to indicate that the fish oil is problematic but we don't see any of the like design on the study design. We're not seeing anything going on with that or any analysis with regards to that to see if like these people were eating absolutely horrific diets plus fish oil or any of that stuff that's going on.

I know for James, he is pretty dialed into the fact that you can certainly overdo fish oil especially for him in that he is very, very lean; he sleeps well, his training is smart; and the bulk of his food is grass fed. And so his need to supplement -- like the reason why any of us supplement with fish oil is because most of our food sources are grain fed and therefore it makes it heavy in Omega-6's and so we're deficient in Omega-3's.

Omega-6's tend to be pro-inflammatory and so it tends to be one of the elements of the kind of pro-inflammatory diet that most of us unfortunately end up eating. Even when you're eating more of a Paleo sort of approach, we tend to have too much Omega-6 in our systems compared to where ancestral levels were. So the recommendation is to supplement with Omega-3's and then you can bring that one-to-one ratio back into the line.

Peskin never really addresses any of that stuff and it's somewhat frustrating for me in that he says again and again and again, you know, "Okay, this study shows that fish oil is bad, that one does, that one does," but then at the end of it, he doesn't provide a single prescriptive recommendation. And I think he has a book for sale and some other stuff for sale and that's all fine, but for me to be a little bit sold on this I would really want him to throw in, "Okay, fish oil is bad and I would like to see you ideally do this, this, this, and this." He doesn't have to give away the whole farm if he doesn't want to, but I'd like to know where he's at with his overall macronutrients and all that stuff.

I think in that Sally Fallon/Mary Enig review of the guy, they mentioned that a lot of his recommendations are pretty good, but then this fish oil thing is just kind of like this like shot in the dark. He's decided to make

fish oil a problem similar I guess to Mike Boyle not liking the back squat so it's the marketing deal or what. So that's a bunch of random stuff.

I haven't talked to James about why he posted those videos and then the kind of rebuttal piece about Peskin. My thought is that maybe James was just trying to raise folks' thinking about fish oil because there definitely is a therapeutic dose on it like you can't overdo it, there can't be too much. Most of my clients are not in that camp of being in danger of overdoing it yet because their compliance levels are marginal at first and we're still usually trying to lean them out and undo a bunch of other systemic inflammatory problems. But then when these people start getting more dialed in, we definitely titrate them down on their fish oil. They're not taking as much.

And James is maybe trying to raise some awareness on that. I haven't talked to him about that again and so I'm not sure what his thought was on that, whether this was just kind of two different sides of the coin that he wanted people thinking about. If he wants them thinking about the fact that you could potentially take too much fish oil and there could be some problems with that, I'm not sure.

But the overall Peskin message I'm a little bit nervous about. It doesn't really make much sense to me. I'd really want to see a lot more contextual type stuff. And then it's kind of laughable to me. Peskin says that all these favorable fish oil data is coming out because of like the fish oil conglomerates funding this stuff and it's just kind of like, "Dude!" you know. There's some money being made in supplements and other things but I do not see like dark rooms with cigar-chomping dudes selling fish oil and like conspiring to have like Harvard Medical School skew some results of it. Nordic Naturals can sell some more cod liver oil so it seems kind of silly.

Andy Deas: Yeah. And on the purely anecdotal level, I mean we see tremendous benefits just within our gym, on a personal note, I mean all of those things.

Robb Wolf: Yeah, yeah, ranging from like body composition, sleep quality, better recovery, blood lipids. Like we can check under the hood and actually do lab values and we see things moving in a favorable direction. So yeah, I think it's maybe kind of interesting but again, without him saying, "Here is what I would like to see people do," then it's really, really hard for me to ultimately evaluate what his recommendations are.

It's like somebody walks in and they look at like CrossFit or they look at Olympic lifting or whatever and they're like, "Oh, that's dangerous or that's this or that's that," and it's like, "Dude, give me some qualifications here." It's like compared to what or in what context. So I'd like to see what the dude's recommendations are for like a 5 foot 4, 130-pound female whirls into your office and she has signs of inflammation, what do you recommend she does? And I have to see that.

Andy Deas: Sure. All right, good question though.

Robb Wolf: Yeah.

Andy Deas: All right. So next we got a question from Mark about Paleo cheating. Currently he does not use a cheat day but rather he does three cheat meals throughout the week. Typically, they are impromptu lunches he has with clients as a normal course of business. He rationalizes that "I'm able to easily shrug off a semi-crappy meal versus an entire day of semi-crappy meals."

He then came across Di Pasquale's work and the resulting conversation with a friend of mine turned into a discussion about carb loading, anabolic effects, etc. Her argument is that the cheat is more than simply a psychological break from the strictness of the diet and that carb loading indeed has an anabolic effect. Generally speaking, is there merit to her argument and to Di Pasquale's work?

Robb Wolf: You know, I think -- gee, whiz! The cheat deal for me, like I just find I don't really need it all that much, like it just kind of pops up and rolls into my normal kind of life schedule. The whole like massive anabolic elements of it I think is a little bit silly. If there's anything that it does, having your glycogen stores topped off even kind of transiently, I think the next time you go in the gym you can really tear it up and then you'd get a greater training stimulus because of maybe some increased work output or just kind of a different environment like that.

There's no doubt that insulin is definitely anabolic, but with rare exceptions do I see insulin really promoting anything other than like making you fat. Now granted like in the DiPasquale stuff, Metabolic Diet, Anabolic Diet. Rob Faigin wrote the Natural Hormonal Enhancement. They're trying to use insulin in a very punctuated manner. I guess it kind of makes sense, but in the grand scheme of things I see that being such a minor influence in the overall effects. Like if you have solid sleep, good training, and you're eating a hypercaloric like adequate or higher than normal calorie level diet, then you're probably pretty good to go on that.

I just think sometimes one of the breakdowns in cyclic ketogenic diets, cyclic low-carb diets is that people go so bananas on the cheat day that they are tossed for like a day or two afterwards, like they feel horrible. They're kind of bloated. They've got kind of GI problems and everything. They just don't feel very good. So I find generally kind of a moderation on those cheats are usually a lot more productive. And there again, like I'm usually pumping folks' knees to stay gluten-free on the cheats, more like dark chocolate, ice cream, whatever, but trying to stay gluten-free on it naturally.

Andy Deas:

Ice cream, nice. All right. Good question. I like that one.

Next we got a question from Tim. He enjoys the podcast. He was wondering if you could lay out what you think the phases are moving from a standard American diet to a Paleo diet might look like. Meaning, do you have a sort of N Phase Plan for moving people to "perfect" Paleo? You touched on this in your first podcast when discussing heavy-ish nut consumption being okay for folks new to Paleo, but you also appeared to have some fairly strong feelings about what folks are ultimately shooting for. In other words, how do most folks you work with get from point A to point Z?

Robb Wolf:

Gees, that's just so well over the place because we have some people that we -- to reiterate, the way that we bring folks in, it's either in the on-ramp setting or in personal training setting, and in both situations, people receive information about the food ahead of time. So they get a shopping and food guide, they get a 30-day food log to fill in what their food is and how they feel after the food and all that, and we tell them even before they arrive that their nutrition is critical for their success. And if they've heard about a friend's success or they've seen a friend's success or whatever, it's not just the training. It's the food that's critical.

And then each day, there's usually a pretty good discussion about the food and checking in with people to see how they're doing; and some people just get it. You tell them, "Hey, emphasize protein at your meals. Breakfast should be like an omelet and blueberries and a handful of nuts and lunch should be a salmon salad with a slice of watermelon or something, and then dinner is some pork spareribs with a big salad. And people are like, "Wow! Right on! Cool!" and they're in.

And they may have been eating nothing like that before and then they just do it. And then I guess like the ideal situation is people are tracking down grass-fed meat more often than not. They're getting pastured eggs,

Omega-3 eggs more often than not, all that sort of stuff, and that would be kind of like the gold standard sort of deal. In Protein Power Lifeplan, I think they had that being the -- there are three different levels, the dilettante, the hedonist, and the -- what was the top level? Oh, man, I forgot, but the perfect complier was the person that was eating like grass-fed meat only and absolutely no Neolithic foods and all that, but we have virtually no one who does that, like I don't even do that.

So most people get pretty close though when they're eating protein, veggies, and fat at most meals, proteins and carbs post workout if and when they need them, and we get quite a few people compliant with that. I had a woman yesterday ask me or she said, "You know, you guys need to sell food journals so that we could journal our food." And I was like, "Really? So then that way you can forget the journal at home and have the excuse that you don't know what you ate because you forgot it and you can't be accountable for just doing the stuff straight out?" And she just looked at me and she's like, "So you've heard this argument before?" And I'm like, "Fuck, yeah. This isn't my first rodeo."

So then you have other people who they're going to find any excuse they can to try to battle compliance, and so I don't know if that's getting too far off the topic but you just have some people who get it and they just absorb it and they kind of roll with it. Other people, it just blows them out of water and like, "Gee, I just don't know how to do this." And it's like, "Okay. Have you ever had an omelet for breakfast?" "Well, yeah." "Okay. Then you've had a Paleo breakfast at one point in your life. Have you ever had a salad with some meat on it and some fruit for lunch?" "Yeah." "Okay. Then you've had a Paleo lunch. Have you ever had like a steak and steamed asparagus and some artichokes for dinner or something like that?" "Yeah." "Then you've had a Paleo day. It may have been split up over a month but you've had a Paleo day."

So that's really all it comes down to, and then it's just figuring out a way to light a fire under folks to just give that a shot for a month typically. And if we get like a month buy-in then usually the recidivism is pretty low. People don't peel out that badly, or if they do, they go off the rails for a little while like it's the holiday season right now and people will peel out a little bit; but usually, we do some sort of a January challenge to get people fired up and they rally and peel off a little bit of extra fat that they gained over the holidays and it's really not that big a deal. Andy, does that touch on that stuff pretty good?

Andy Deas:

You are salty today, Robb?

Robb Wolf: Oh, cool! Good. Good. I ate a bulk all day.

Andy Deas: I think it's an interesting question. I think for my experience, I guess the folks that sort of take this the farthest in my limited experience here are either people that have health problems so they'll continue to kind of dial it down. Like with my wife, it's like, "Okay. You got this far. Let's pull out the nuts and see if we feel better."

And then we have some other people that I think geek out on some of this stuff and are really interested. They're like, "Oh, okay. Why are eggs an issue for people with autoimmune disorders? Okay, I don't have one but maybe I'll pull some of those out and kind of experiment and tinker with."

But I think you're right. We get kind of a wide variety of buy-in. I mean people are pretty close, and then you get some folks, you know, they're happy with their results kind of eating Paleo 80-90% of the time. They're pretty good athletes. They're lean and that's kind of how they roll.

Robb Wolf: Right.

Andy Deas: And then we sort of have some folks that are more into the competition mode and want to kind of tweak things further, but I guess for my money, get 85-90% compliance. I don't know if you can ask for more for most folks.

Robb Wolf: Yeah. I don't know how much more you need than that to be about as fit as you want to be unless you want to be a competitive athlete or you want to do a figure competition or something like that, like it's really not necessary. Your abs will be up. You'll look good naked. You'll feel great. You'll have good blood lipid profile. Short of getting hit by a bus, you're probably going to live a long time.

So it really is that 80-20 deal of kind of minimal investment, maximum return. It's pretty easy. But for some people, it's a nightmare getting them to comply with. The woman that I was talking to yesterday, she's going to be a fun one to try to get on board with it all.

Andy Deas: Oh, Robb, your patience is wearing thin today.

Robb Wolf: It's not just today. We had the right trigger question for me.

Andy Deas: Well, so I'm excited for the next one.

Robb Wolf: Yeah.

Andy Deas: All right. So we got an interesting question from Neal. He says, "This is a question about contrarianism and what rational outsiders should think about Paleo dieting. I've been following your work for a few years now and I respect your opinions. I also respect the opinions of other writers like Lyle McDonald and Alan Aragon. All three of you know far more than I about nutrition and probably blow my IQ out of the water. As an advocate of Paleo dieting, you are a contrarian compared to the more mainstream, middle of the road recommendations of McDonald and Aragon."

I'm kind of skipping down to the bottom. He basically goes on to say, "This is quite the conundrum for me. I do not feel different when eating strict Paleo versus including grains and dairy. So, I cannot evaluate in that respect. But I guess the whole ramble can be summed up in the question, do you believe there are any non-super-geek-outside-credibility-indicators that should push us non-experts to your side?"

Robb Wolf: Gee, whiz. Well, first off, just being a little bit of a dick, whenever I hear somebody call themselves a rational truth seeker then a red flag goes up; but I know Neal so I know he is a good dude, and so I got to back pedal on that a little bit.

It's a great question, maybe a little bit of stuff that we could ferret out in here like one of the things -- and again, maybe Neal is taking some of what McDonald and Aragon, both of whom I respect immensely. I dig their work. I like both of them, and obviously, we're coming at this from slightly different places. But let's say that both McDonald and Aragon have said of dairy consumption, non-lactose intolerant individuals are fine with it and then non-celiacs with dairy, you know, green products.

What this is telling me is that there is a lack of understanding about the fact that dairy poses some other issues beyond simply lactose issues. It's got an insulinogenic effect. It's got protease inhibitors which lead into some of the leaky gut autoimmune responses that are more commonly seen with grains and legumes. And if you look into the literature a little bit, we start seeing very high linkage to like type 1 diabetes, multiple sclerosis, all that sort of stuff. With a dairy-free diet, you see alleviation of those conditions. Similarly, even in non-"celiac" individuals, we see a significant benefit when people go grain and legume-free and dairy-free. We'll just assume all these things were all thrown in there in the mix.

I forgot which podcast it was but we were talking about the group of like 35 or 135 type 1 diabetic kids that were assessed as to whether or not they were overtly celiac or not, and most of them were not overtly celiac, all of them had an autoimmune disease, all of them also had transglutaminase reactivity in the basal lamina of their intestinal mucosa, which that's the basic cells or the final wall of defense between the outer part, basically your intestinal contents, and starting to get into your body.

So without very, very advanced testing, there's a bunch of people that are walking around that by blood work and by tissue biopsy would appear to be non-celiac but they have autoimmune reactivity going on the authors of that paper were saying was absolutely indicative of predisposition towards celiac disease.

So this whole thing is that I would argue that both of these guys, if I were to throw a bunch of studies at them and sit down with them and talk to them about this stuff, they would probably loosen up or maybe tighten up I guess depending on how you look at it. They would probably say, "Okay. There might be more to this than what I was thinking about before." Or they might tell me to fuck off and that would be bad.

But I think I could probably argue pretty strongly that there's something to this, and then even getting into kind of the bodybuilding culture of which these guys are more mainstream to. Bodybuilders, it's just kind of woven into the whole mythology that when you start getting close to contest prep, people shift away from wheat and pasta and bread and shifts more towards like rice and yams and sweet potatoes for a very specific reason and that's because people tend to retain water when they're eating wheat products.

And this is just known and it's understood, and these are people that in both McDonald's and Aragon's eyes would be non-celiac individuals; but yet, these people retain water and it's very well understood that they do when they modify their diets accordingly when physique competition is pending. And so why do these people retain water? Because gluten is an irritant and it irritates the gut. It irritates the gut in pretty much everybody, and when you have a low level of irritation then that inflammation causes cortisol release and the cortisol release tends to cause you to retain water.

So even within these guys' own kind of genres, you have examples of places where people will pull grains and legumes and dairy out of the mix, more specifically certain grains like more gluten-containing grains.

But there's some mythology there like there are some stuff that you could look at and say, "Okay. That kind of supports all this."

And then the thing that I always fall back to is like just try it for a month and see. I think the most rational truth-seeking that exists out there is give the thing a shake and see how it works; and if it appears to be -- does it work? And if it does, is it worth your time? Maybe it works but the return on investment just sucks. Maybe it's way, way, way too hard.

But what I generally see is that folks who end up doing more or less a gluten-free, dairy-free Paleo diet, they end up doing really, really well and we don't really see a whole lot of recidivism off of that. We certainly see some benefit for dairy in a mass gain scenario. We like to do some other stuff to try to balance out some of the downsides of the dairy, but I think that's my biggest thing in it is just get in and try it and then that way it's not so much a theory war but more just your own personal experience.

Andy Deas: What about, Robb, for folks that do the gluten-free thing and don't necessarily feel any difference? Are there blood work and things that you think would show differences from eating we'll say a gluten-free diet versus consuming gluten?

Robb Wolf: Usually, there is like there's some inflammatory markers that we should be able to track and see. It's just I really have not run across many people like Bill at our gym. You know what though, that's funny. He used to say, "Yeah, I don't notice a difference with it," but I think like he was still rolling in like oatmeal and different stuff in the morning, and then he went fully, fully gluten-free, dairy-free Paleo. He saw a good performance. The dude went to world championships in age-group triathlon and all, so he's a top performer in his age group. And then actually talking to him kind of a couple of weeks ago, he's like, "Yeah, you know, I really do notice a difference now when I've pulled that out."

So it's just damn, damn rare. I can count the people on like one hand that have interacted with it. I think they legitimately gave the whole gluten, dairy-free like Paleo shtick a shake and were like, "You know what, I really just did not notice a difference." And if that's the case, cool, fine! I really am not trying to turn this whole thing into a religion, but it's so rare for me that I don't see people benefit from it.

It's kind of like somebody who occasionally they'll throw something out there. They're like, "Well, I just didn't benefit much from back squatting." And you're like, "Okay. You must be superhuman. The fact that the back

squat or the deadlift doesn't provide some sort of like significant benefit to your physicality and your athleticism is stunning."

Swimmers are about the only people that I think I could stick them in that camp, and even within that, like the kick turned off the wall into improving off that stuff. But it's real, real hard to get dry land strength training to translate well into the pool, but that's like an example of that where it's like a rare, rare subset of all the athletes. You have to go from land-based activities into the water before you start seeing like general strength and conditioning not do that much.

Andy Deas: All right. Let's see if we can get the next few questions to kind of calm you down, Robb.

Robb Wolf: Cool! Cool!

Andy Deas: Did you have a lot of espresso this morning?

Robb Wolf: You're sensitive, man.

Andy Deas: I'm just busting your chops today. You know, I'm feeling good. It's the afternoon. I had a bunch of tea. The weather is nice outside. I think I may be hypersensitive today.

Robb Wolf: Perfect! Perfect!

Andy Deas: We had an extra cup of coffee this morning or something.

Robb Wolf: Cool!

Andy Deas: All right. So next we got a question from Sebastian. I think that you answered something similar on the blog but I don't think we actually talked about it specifically on the podcast, although we talked a little bit about eggs and autoimmune stuff last week. So I thought I'd throw this one in.

So Sebastian is dealing with an irritated/leaky gut and it's the reason why he is giving a good try to a low carb, no grain, dairy-free diet. He is wondering if you think clarified butter would be safe for people with autoimmune problems, given that clarified butter is pure fat without any milk protein or carb. I know the easy answer is just to cut it out, but if it's pretty safe, then I don't see the reason to cut this option from the diet that brings variety.

Robb Wolf: You know, that thing again where like with dairy products, if you get legitimate grass-fed dairy, I think the likelihood of any of the dairy products being problematic from an autoimmune standpoint are dramatically decreased. So like if he can track down what was it? The Kerrygold butter that --

Andy Deas: Yeah, Kerrygold. In fact, we had a couple -- our good friend Xi Xia from CrossFit Portland did some updating and some digging and there was some good debate on Kerrygold. So all the research anyone finds says that that is legit, grass-fed, pasteurized.

Robb Wolf: Cool! Cool! So I mean it's that thing again. Just jump in and give it a shot, and by that I would say peel it out for a month, see how you do, reintroduce it; but I think in the bottom line, like whatever fat you're using in general, I'd like to see a rotation of it. So maybe like a week of olive oil, a week of coconut, a week of butter or something like that I think is totally fine, and then that's going to minimize the whole problem more if there is any problem there.

And I think if you're getting pastured dairy and you're using some butter to like scramble your eggs or something, big deal. I mean it's going to taste delicious and provide you some CLA and some other stuff. I think that's fine.

Andy Deas: Yeah. And I think generally, if he's having some leaky gut kind of stuff, roll with it for a while, I think he'll see improvement. And then I always go with the pull it out for like you said 30 days and see what happens.

Robb Wolf: Yeah, totally.

Andy Deas: Kind of like my experience with the nut thing. Like I really didn't think that it was going to make that big a difference and then I felt a dramatic difference, and I'm like, "Damn it! I love nuts, but I won't eat too many of them anymore."

Robb Wolf: Right, right.

Andy Deas: It makes my Paleo pancakes hard. All right.

And then he had a second question, which I liked as well. So, "Near the end of this recent episode of the podcast, you mention that not everybody performs well on a low carb diet but except from people with prior problems. I don't see why people would feel bad on a diet their body was designed to eat. I guess I just need some clarification on that

and I want to eliminate any doubt in my mind about low carb especially since I'm starting to talk about the benefits of it to people around me."

Robb Wolf: Well, I think just low carb is relative from person to person. For me, I almost do better, the lower the better. I just feel better. It seems like my recovery is good, sleep is better, all that sort of stuff; and I just do really, really well on that. Other people who I think are naturally very, very insulin sensitive probably do not do as well on a very low carb diet, and so I think that that's kind of the spectrum that we see.

And to some degree, like DiPasquale talks about this. Poliquin talks about this. Even Sears talks about this to some extent in that he is saying that you've got like 25% of the population that's a real good insulin responder and some of them that aren't, and then you've got a middle ground and all that. And I would tend to throw most people lower on the rung in that I think that they need fewer carbs to do well, but I think that everybody needs to find the right sweet spot with it.

And there again, whenever we're talking about this stuff, are you providing a full month of adaptation? Are you eating enough fat when you're doing that? Like are you already lean and then you're eating an adequate fat? Like there's just a ton of ways that people can goof this stuff up and then be like, "Oh, well, it's not working for me," but they were doing it wrong to start off with. So it's a little bit of a nebulous question.

Andy Deas: Yeah. But I think the point for me on some of this is when you look at all these societies in the globe that have been studied, you see a fair amount of variability in the amount of carbs they consume.

Robb Wolf: Totally!

Andy Deas: Yeah.

Robb Wolf: Like the Kitavans are eating like a 60% carb diet but it's mainly from like yams and sweet potatoes, and they seem to live fine. It wasn't the Heart Scan doc. It was PaNu, Paleo Nu, PaNu, I think the other physician. He was making the point though that we don't know how healthy the Kitavans are. Like he actually had some studies on the Tarahumara Indians in which those guys, and this is something that people will hold up a lot. They're like, "Well, those guys smoke and they eat a corn-based diet and they live well."

But he had some studies that indicated a lot of these dudes had ischemic heart damage. They had infarcts that when they did scans on them, they had significant infarcts and that these inflammatory kind of lifestyle that they were living between the smoking, the marathoner a day running and then just eating like a corn pap wasn't really doing them all that well; and when you looked at total longevity and health, these guys are not particularly healthy. So that's an interesting counterpoint to that, and this guy was also saying, "I don't know how ultimately healthy the Kitavans are. Are they just kind of barely flying under the radar? Are they tolerating this stuff versus thriving?" I don't know.

Andy Deas: Yeah. That's a good question. I forgot the gentleman who writes it, but the freetheanimal.com blog, which I like to read. He had made the point which I think we've talked a little bit about is that the Paleolithic diet, it's principles based. So there's a wide variety of societies that had consumed a wide variety of ranges and we're just trying to model some of that to fit within these ranges, but I don't think anywhere we're suggesting everyone is going to be their most physical badass self at 50 grams of carbs a day or less. I think there are some people that that will work for.

Robb Wolf: Right.

Andy Deas: I think there's a range and I feel like we believe for the most part folks do better on a lower carb diet than they think, but we certainly see people that need a lot more carbs than you or I to feel good and perform well.

Robb Wolf: Sure. Yeah, absolutely!

Andy Deas: So I think that's a good question. Cool! All right. Next we have a question from Wolfgang. "I'm a 21-year-old skinny-fat male who eats a conventional diet, hasn't really ever trained before, and looking to start a Starting Strength program to put on mass. What are your thoughts on switching to a Paleo diet before, during, or after this program?"

You mentioned in Episode 5 that leaning out and getting healthy before a mass gain program leads to better results. How does this apply to my situation? Should I try to dial in my diet and exercise before going all-out hypercaloric or should I just ride the wave of initial adaptation to lifting heavy things? Also, do you have any alternatives to the gallon of milk concept that might not cause so much acne?"

Robb Wolf: I would really encourage Wolfgang to get lean first. Especially he is 21. He should be getting like a rip-roaring hormonal response from his training. That is going to be blunted. If he considers himself skinny-fat then we

probably have enough body fat levels that he is aromatizing or converting testosterone into estrogen. That's not going to get better with a hypercaloric diet.

So you've got these two kind of anabolic axes, testosterone, testosterone and estrogen to some degree, and then the other axis is really kind of growth hormone and insulin or insulin sensitivity to put it more directly. And so if you are lean, you will tend to be more anabolic just because of insulin sensitivity. If you are lean, you will tend to be more anabolic or growth promoting just because of better testosterone levels.

So it's hard to imagine a situation in which this guy would not benefit from. Certainly, start some Starting Strength. Start doing some 3x5, 5x5 linear progressions and all that. Do a tiny little bit of very short metabolic conditioning mixed in with that. But get your food dialed in kind of a low-ish carb Paleo diet. Get lean, get below 10% body fat like have your abs up, and then start considering where you're going to go from there.

You could do like the way I've wrote up like the mass gain protocol in the Performance Menu years ago. You got a couple of different options on that. You could just eat low carb Paleo and just eat till the cows come home. You could weigh and measure the whole thing to keep track of what you're doing and systematically add more food. And then you could also go the eat as much food as you can, kind of low carb Paleo plus a gallon of milk a day. I think all of those things work.

If you're trying to avoid some sort of acne collateral damage, there is no way that you're going to use milk, whey protein, any of that stuff and not suffer the effects of acne. If you are at all susceptible on that direction, it will absolutely irritate the acne issue. And so I would get lean, focus on getting strong, and then start upping the caloric content from there. And if you want to avoid the acne and some of the collateral damage with that and potentially just putting the fat right back on, then maybe forego the gallon of milk.

Andy Deas: Yeah. I am fascinated by the fact that Starting Strength is like the name of a style of a program now; and at one point, that was just considered like classic strength training.

Robb Wolf: Right, right. I think it's been called the star method also by Barry's folks.

Andy Deas: Yeah.

Robb Wolf: Yeah.

Andy Deas: And the gallon of milk thing is interesting because I've seen this and I saw it fairly frequently last year at the CrossFit Games where you'd see some younger adolescent kids. Obviously, I didn't talk to them. I don't know what their goals were. But looking at their physiques, some of them work as lean as you'd like to see before they start bulking, but they're walking around in the 100 degree temperature with this gallon of milk and I'm thinking, "Man, is this really the best way to go about this?" I don't know.

Robb Wolf: Maybe they were trying to make yogurt.

Andy Deas: Because as long as they were carrying around those gallons, I'm pretty sure they were consuming some nasty, nasty tasting stuff.

Robb Wolf: Awesome!

Andy Deas: But they are getting 70s big.

Robb Wolf: Which everybody should.

Andy Deas: That's right. All right, good question. Next we got a question from Mark. "Could you talk about why avoiding dairy, grains, legumes, sweeteners, and veggie oils will help with fertility, both pregnancy and health of mom and child after the birth? I'm looking to start a family in the next couple of years and this info would help make the move to Paleo a lot easier for my wife and I."

Robb Wolf: Like if the female is having some fertility issues, a Paleo diet can help in a couple of ways. One is reducing insulin levels. High insulin levels can lead to elevated estrogen levels, and if women have too high of estrogen, the estrogen-progesterone axis gets goofed up and this is where PMS, polycystic ovarian syndrome, all that stuff is an outgrowth of too high of insulin and estrogen. So we drop estrogen levels, progesterone and estrogen are normalized, and good stuff can happen from that.

The gluten issue, I actually was just rereading a bunch of Cordain's papers like Cereal Grains: Mankind's Double-Edged Sword, and I was reminded about the fact that wheat germ and gluten, which is one of the proteins in wheat, rye, oats, barley, that actually causes an upregulation of interferon gamma which is an immune modulator, and it irritates the heck out of the immune cells, but these immune cells that tend to get irritated tend to be involved with the epithelial tissues -- breast, colon, prostate, uterine lining, ovaries.

And so this is one of those sneaky ways that a gluten-containing diet can lead into infertility because you've got an inflammatory response, this being immune mediated cause from the gluten in the diet. So you remove all of these irritants. The vegetable oils are problematic because of the Omega-3/Omega-6 balance. We want a one-to-one Omega 3 to Omega 6. Veggie oils are exceptionally high in Omega-6's and can skew things as much as 20 to 30 times higher with the Omega-6's which are pro-inflammatory. So that's going to cause problems too. So that's where like this last kind of shotgun approach to the whole thing ends up fixing all this stuff.

And I think he ended up asking in here if Ezekiel bread is evil. I'll just say Ezekiel bread is sprouted grains. Would you want to eat sprouted like cat turds? If you're down with that then go for it. And again, I'm a nutcase on this stuff. I'm just completely nutso but I'm just not a fan of any of that stuff at all. So there you have it.

Andy Deas: I believe that as you said once, we just don't believe that stuff is safe for human consumption.

Robb Wolf: Yeah. And again, like play with it and see. I know people think I'm like over-the-top zealot on it, but when I see person after person after person, I'm like I put ulcerative colitis into remission. I mean I've probably had in the last two years maybe like 200 emails from women who were having remarkable amounts of infertility issues and they went gluten-free, dairy-free Paleo and got pregnant.

And these are people who had like been through the full in vitro fertilization gig and the whole nine yards, the whole time their doctor knowing full well that they had like PCOS, polycystic ovarian syndrome, and some other things that were indicated of elevated insulin levels. They ended up paying tens of thousands of dollars to deal with this via medical intervention, basically getting dosed up with hormones, collecting eggs, trying to fertilize those eggs in a Petri dish and then implant them, and none of it worked; and they ended up fixing this stuff by just changing their diet.

And so when people think that I'm being over the top with it, I'm just basing it off of the responses that I'm getting. People are telling me this changed their life. And so when people are asking me if is Ezekiel bread evil or not, it's like it could be evil. Give it a shot and see. And especially if there's some sort of a question here about fertility and overall health and all that, let's just give this a shot and see how you do with it. Worst-case scenario, you go a couple of month without a food that you otherwise

like. Best-case scenario, it ended up being the linchpin that made everything kick over and really worked for you.

Andy Deas: You can take off your foil tin hat now, Robb.

Robb Wolf: Never, never.

Andy Deas: All right. Next we got a question from Gabriel. Thoughts on will switching to a Paleo Diet help with the junk food cravings that some women experience during their period?

Robb Wolf: Yeesh. I think generally, yeah, because these seems to be kind of feed-forward mechanism there. Like if you eat some bad food then you tend to want to eat a lot more bad food. But I think I'm going to get chased off the island here I know, but I think chicks generally have more food cravings than guys do, like you'd stick 100 males in a room, 100 females in a room, and the females tend to have a little bit more food cravings than the guys are. But all that said, I think if people are generally eating better, they tend to overall have less cravings, but it's not going to fix it all. I just haven't seen that be the case for females.

Andy Deas: Yeah. I think this is one area where then you can start to play with what are those cravings and how can we make those better, gluten-free, kind of the corn chip idea. I had a friend. She used to loved French fries and so we kind of went with "Well, let's try some baked sweet potatoes that you cut at home and we'll see how that goes." That's certainly better than a McDonald's French fries.

Robb Wolf: Right, right, although I will say that In-N-Out French fries are gluten-free and trans fat-free and delicious.

Andy Deas: Oh, Robb, another In-N-Out plug.

Robb Wolf: Yeah, yeah.

Andy Deas: All right. Brett poses a question about correlation between OCD and nutrition. "My daughter's pediatrician suggests that we take her to a therapist for an evaluation due to some issues we've been having. I wonder if you've seen any research or findings on this."

Robb Wolf: Here again, rereading that paper on grains, there's not a single tissue or organ system that's not affected by grain and legume consumption. Transglutaminase is a protein-modifying enzyme that is in every cell of

our body. It modifies like every protein that we make and so it's going to modify like everything under the sun and it's going to affect everything.

One of the primary things that Cordain talked about in that Cereal Grains: Double-Edged Sword paper is that a significant number of neurological problems ranging from schizophrenia to depression to autism appeared to have some very high linkage with leaky gut issues. So I don't think that there's a doubt that starting with healing the gut, removing irritating foods, doing some fish oil, doing some vitamin D. A good solid probiotic like a Jarrow or New Chapter Probiotic is a great idea.

Andy Deas:

All right, good question. Next we got one from Susan sort of on the other end of the spectrum. Her mother is extremely thin, weighs less than 95 pounds without trying, has a history of intestinal/stomach problems, stomach pains that no doctor has been able to diagnose aside from prescribing Zantac, and during a routine check-up discovered she had significantly high potassium (or magnesium, it's been a while) levels and she had to stay overnight in the ER.

"I know for a fact that she consumes a crazy amount of carbs, usually in the form of noodles, which is probably a big culprit to most of her problems, and she consumes a surprisingly large quantity of food in one sitting. I guess my question is, can eating Paleo help someone of this size to gain weight in a healthy and Paleolithic way? How should she go about it?"

Robb Wolf:

Yeah. I don't think there's any doubt that again, I just sound like a broken record, like when you heal the gut, all kinds of good stuff happens. It sounds like her mom is having some digestive insufficiencies here. She's like hypochloritic so she's like low stomach acid, but ironically, she's taking Zantac for like suppressing her stomach acid, which is where that whole thing just becomes a nightmare. Grains and dense carbohydrates in general, grains specifically, tend to stimulate stomach acid in a pretty maladaptive way, and so that's where like the GERD or gastroesophageal reflux disease comes from, and that is all totally alleviated with the Paleo diet.

Now usually, folks are looking at some sort of a Paleo low carb sort of deal as a weight loss gig, but this woman obviously is weighing 95 pounds. We don't want to peel the weight off of her. I think her problem is she is just not digesting much of anything. Interestingly, you can still get carbohydrate through a pretty roughed-up gut lining. That is still relatively easily digested, but proteins and fats are not.

So I would just be shocked if she didn't benefit from adopting a Paleo diet and then the question is how do you adopt this one meal at a time? You start with breakfast. You make it like eggs or meat or whatever. Make sure that whatever vegetables she is eating initially are cooked really well. Soups and stews and curries and stuff like that are probably a really good idea.

And much more than that like a specific meal plan is just you're basically sticking with the proteins, veggies, good fats starting with some fish oil, probably some digestive support like the NOW Foods Super Enzymes. One or two capsules with each meal would probably be a great idea to help get her digestion kicking over. And again, I would be shocked if some tweak of her food didn't benefit her significantly.

Andy Deas: Yeah. And I think we see a surprising amount of folks that are either kind of we'd call undernourished, and a lot of questions we get are like "Oh, I'm trying to bulk up and add muscle," but we also see plenty of folks on the other side, whether they're elderly or not, that are sort of undermuscle, undernourished, put them on a good Paleo diet, they gain weight, they gain strength, all those things that they're looking for.

Robb Wolf: Yeah, totally. Hey, and Andy, you're breaking up a bunch so I don't know if something changed on your side.

Andy Deas: Dude, I'm not breaking up, Robb. Don't go away this week. All right. How is it now?

Robb Wolf: You're a little better.

Andy Deas: I've done nothing in the last five minutes.

Robb Wolf: Oh, it's breaking up a little bit. It goes in and out.

Andy Deas: All right. Well, as long as you can hear me enough to answer the questions, it should be okay because it sounds fine over here and you're recording fine.

Robb Wolf: Oh, okay. Cool! Cool!

Andy Deas: So unlike the periodic like feedback that sometimes we get from you, that gets recorded.

Robb Wolf: Oh, okay. That pisses the cat off a bunch too.

Andy Deas: Well, it's all about Keystone really. I know how the world works.

Robb Wolf: Totally!

Andy Deas: All right. We're going to get to these last few questions, Robb. We're going to do it.

Robb Wolf: Cool!

Andy Deas: I got a question from Jeremy. He is limited to food in the chow hall while deployed. He does have the options of the MREs, meals ready to eat, but they are loaded with sugar, bread, and calories. How can a soldier, sailor, airman, or marine try to eat Paleo foods in this type of environment? Are there any suggestions on a Paleo diet here in Afghanistan? Also, do you know of any type of Paleo meals that can be ordered and shipped here possibly? Thanks for your input.

Robb Wolf: You know, I'm not sure about the Paleo kits whether or not they go international or the APOs. I'm not super sure on that. Jerky is a great one, loads of nuts. I think all that stuff is a pretty good option.

Usually, in a chow hall, you're going to have sort of hunk of protein. Sometimes it's breaded so I mean sometimes it's just damn hard to get around that stuff. But most of the time, you're going to be able to find a hunk of protein and some veggies that even though they may have the bejesus cooked out of them, like you just load up on that. You really try to minimize or avoid the bread, mashed potatoes, all that sort of stuff so you're trying to minimize the starchy stuff. Focus on protein and veggies just like the standard operating deal.

The MREs, you can tweak them a little bit by just basically eating whatever protein is there. Try to supplement it with peanut butter or almond butter or something like that and just really minimize the amount of the carbs that you eat out of there, and that's kind of about the best you can do with all that stuff. You're just trying to eyeball it and get the proportions such that you're really emphasizing protein and fat, kind of minimizing the carbohydrate intake, getting as much vegetable matter as you can when you're actually in the chow hall.

Andy Deas: All right. And then a related question from Chris. What is the best way to handle MREs with regards to an extended time in the field with army training? As you probably know, they are pretty heavy on simple carbs with splashes of highly processed meal. For long exercises, 10 day field problems or Ranger school, it is not feasible to pack all your food and

then hump around 30 extra pounds. Is it better to make do on the minimum of what you can pack or should you just go for the calories and feast on the junk in the MRE? So I think you addressed that portion of the question already.

And he goes on to say he is pretty lean, 6 foot, 185, 80% body fat. He leaves for Ranger school in about 45 days. Common advice is to store 10 pounds of fat before reporting so you have something to burn. In general, what is your recommended method for adding the extra weight without sacrificing too much on athletic performance?

Robb Wolf:

I think definitely going in with a little extra body fat is not a bad idea. And we did a paper, The Zone and Athletic Performance, in which a guy, Caviston who's at BUD/S and he is a big anti-CrossFit dude and generally doesn't like the program, doesn't like anything about it, wrote a big piece on why he thought that the Zone didn't work.

And so I did a counterpoint to all that, and I was just making the point that people need to go through an adaptation period. And then also, there was a point in there, a lot of the information that I was drawing on was from people at BUD/S. These guys have been Seals, they've been training Seals, and they have definitely seen that people do way better trying to balance their macronutrients, trying to keep more protein and more fat versus just simply doing like -- there's a sense that like you'll burn it all off or you need every calorie you can, but the feedback that I'm getting from these guys is that you're better off trying to pack in some extra fat and minimizing the carbs and trying to balance the macronutrients much more along like kind of a Paleo/Zone line, then you're going to do better.

And the people that I've heard this have both trained this way for extended periods of time and they've been training other people, young men going through the rigors of hell week and BUD/S and all that stuff, and they see people doing better with a better emphasis on macronutrient quality instead of just hammering down as many calories as they can get in.

Andy Deas:

All right, good answer. And the last question, kind of a long one with the first part, and then we're going to break into the second part. So we got a question from Tim about Huntington's disease. He said he saw in a comment that you planned on a post but he can't find that post. Perhaps you never posted one. He recently asked Cordain what he thought about Huntington's and he responded on his blog.

Looks like he thinks gluten is responsible for Huntington's disease. He also says that a CrossFit member from California tried a Paleo diet and that his symptoms are improved. Do you believe that Huntington's disease might be a gluten disease? I would appreciate any information on this that you have.

Robb Wolf:

Yeah. It was actually a client of Brand X so like Tim could contact the folks at Brand X and then they could talk to the woman who has Huntington's and they might be able to get in contact. That's about as much information as I can give out with all that stuff.

But they saw this woman developing Huntington's early. She had an early developmental form of Huntington's, which is I don't know if folks know, Huntington's disease is a DNA repeat disease and it occurs in the brain. Well, it occurs in the whole body but manifests in the brain, and there's DNA sequences that get repeated again and again and again, and it tends to cause some sort of oxidative damage or some protein folding issues, and it's a horrible disease. And it's similar porphyria in that people tend to lump into this category of it being a genetic disease, but what we're finding, what my opinion is, is it's a set of genetics that then have an environmental trigger and that environmental trigger happens to be gluten and that's the primary issue.

So this woman had this early aggressive form of Huntington's. Folks there at Brand X put her on a gluten-free, dairy-free Paleo diet. They gave her good strong doses of appropriately scaled CrossFit. And the woman's tremors, her ability to speak, her cognition, all of that stuff improved and improved dramatically, and it improved so much that her doctor started asking a lot of questions and taking a lot of notes and was very, very impressed with what he was reading and hearing about the whole Paleo diet deal. They've subsequently sent her to both UCLA and UC Davis for follow-up information and testing and monitoring her, and like they're fully looking at like Paleo diet for a clinical intervention with Huntington's disease.

So I was talking to Loren Cordain and Pedro Bastos and some other folks that I'm on a CC list of just all this research-oriented stuff, and we were talking about what the mechanism might be with this and I think it was either Loren or Pedro who tracked down the transglutaminase issue again. And I've mentioned transglutaminase earlier. It's a type of an enzyme that modifies all the proteins in our bodies, and gluten appears to be one of the modes of activity is damaging this transglutaminase enzyme; and so that may be one of the main linkages here with Huntington's disease.

Andy Deas: Cool! So that's Brand X Martial Arts, right?

Robb Wolf: Yeah, yeah.

Andy Deas: Yeah. And Tim can Google Brand X Martial Arts and try to contact them through there. Cool!

Robb Wolf: Yeah.

Andy Deas: All right. And then Tim's got a couple more add-on questions. We'll crank through these because there's one of them that I think we really should address again. So one, you told us that broccoli interferes with thyroid function. Exactly what happens to the thyroid and what substances in broccoli are responsible? How much broccoli is needed before the thyroid is affected?

Robb Wolf: Oh, man, I forgot the name of the stuff. Di-indole methane is the stuff that actually is an anti-estrogen or it helps you prevent the conversion of testosterone into estrogen. That's not the stuff. I forgot the name of the substance. If you just Google broccoli thyroid, you'll find what it is.

And I don't know how much. This is the reason why you should rotate through the types of foods that you're eating. Too much cruciferous vegetables, broccoli, kale, or not kale, cabbage, broccoli, Brussels sprouts, all of those contain this item that blocks thyroid function. I believe it blocks iodine absorption and I forgot on that. I could be wrong but I'm pretty sure it blocks iodine absorption.

Andy Deas: Yeah. But that's one of the reasons why some folks argue if you just eat seasonally it helps clean out some of those rotation problems because a lot of those vegetables and things are only going to be legitimately available for a small portion of the year.

Robb Wolf: Exactly! Totally!

Andy Deas: Yeah. So yeah, you can eat seasonally. At Chico, we have the benefit of a nice little farmers market which generally helps us rotate through the veggies we're tearing up.

Robb Wolf: Yeah. If you're in Calgary, farmers market is tougher to track down.

Andy Deas: Yes. I suppose that it would be. Question two, his 2.5-year-old son has dry skin and rough surfaces on both of his calves. He does get

multivitamin. What could cause these rashes and why do they appear? He does eat grains and dairy, but I guess he shouldn't.

Robb Wolf: There you have it folks. I don't know. Dermatology is a huge nebulous field unto its own, but dermatitis herpetiformis is a form of kind of a skin rash that is very, very common, very, very common in celiac individuals. It's like 110 times more common in individuals who have celiac than in the general population. Again, it's a real simple deal. You rotate that stuff out and see if it gets better. And I would bet dollars to doughnuts, whatever the term is, that the kid would definitely feel better.

Andy Deas: I think you got it right, Robb.

Robb Wolf: Cool!

Andy Deas: Good use of that term.

Robb Wolf: Excellent!

Andy Deas: Next question, in the Paleo days, veggies and fruits were seasonal and these are the only alkaline foods. So if veggies and fruits were seasonal, wouldn't that mean they often had a net acid diet?

Robb Wolf: Seasonal means that there are different seasons so there's different stuff in any given season and we have like three or four seasons depending on where you live, although Seattle had wet and then wetter, so yeah. The reconstructed Paleo diet seemed to be pretty uniform on a net alkaline load. Some of the ones that you see a net acid load are like the Inuit and they seem to get along fine with that.

Andy Deas: Yeah. All right. And then question four, I like this one. I always like to revisit this lean meats topic because Cordain always gets beat up over this. So you often say "lean meats." What is so important about the meat being lean? If it's about the fats containing toxins because the animal had doses of hormones and antibiotics and was inside all the time and got a bad diet, can't you say "natural meat" or "grass-fed meat" instead? I think saying "lean" all the time sends the wrong messages to people. Everyone still thinks fats are evil.

Robb Wolf: Well, when I say eat "grass-fed meat" then every gets their panties in a wad that I'm telling them to eat a diet that's too expensive, and so I say "lean meats" because you can track down lean protein sources that are not grass fed that are relatively inexpensive like pork loin, London broil and stuff like that, and the fat issue isn't so much that there is like

hormones and antibiotics and all that kind of ridiculous stuff. It's that we have an Omega-3/Omega-6 imbalance in our diet largely caused from a grain and dairy or a meat and dairy consumption because our meat sources are fed grains. And so when you eat lean protein sources you tend to minimize the amounts of Omega-6's and Omega-6 products that you're taking in, and so then you can supplement with relatively less Omega-3's and end up where you're supposed to be.

So this is trying to make this thing all as broadly palatable as you can and I guess this maybe ties back around to the very first question or like the same question, which is what's the order of operations for people? Try to educate them about buying generally lean cuts of meat and then try to move them towards like some grass-fed, wild, organic type options, and that tends to be a good way to tackle all that.

Andy Deas: Yeah. And I think when you're talking about modeling after wild game, wild game tended to be relatively much leaner than most of the general grain-fed cuts you would get at the store, correct?

Robb Wolf: Right.

Andy Deas: And so part of what we're trying to do is I think Cordain was sort of criticized for saying he hates saturated fat and I don't think that's what he is saying. What he's saying is it should be eaten in sort of within the Paleolithic ratios.

Robb Wolf: Exactly! That's always forever argued for. Yeah.

Andy Deas: But no, I think it's a good question.

Robb Wolf: Mm-hmm.

Andy Deas: All right, Robb. We're at one hour and 11 minutes.

Robb Wolf: Grapey! Okay.

Andy Deas: Anything else you want to say before we get thrown off the air for you talking too much?

Robb Wolf: Happy holidays! I don't know if this one is going to go up after most of the holidays. This one may go up after the first. I don't know. Well hopefully, folks have a great holiday either preemptively or postscriptively, and thank you for the continued support and emails and questions.

Andy Deas: Awesome! Thanks, Robb. I'll talk to you later.

Robb Wolf: Thanks, Andy.

Andy Deas: All right, see you.