

The Paleo Solution

Episode 30

- Andy Deas: Robb Wolf, Andy Deas, back with episode 30, the Paleolithic Solution. What's going on?
- Robb Wolf: Dude, back from Belize. I have as much of a tan as my pasty fish belly whiteness ever gets so I'm kind of stoked with that.
- Andy Deas: Oh, you also have those raccoon eyes, where I can tell you're wearing a lot of sunglasses and not tanning around your eyes.
- Robb Wolf: Yeah. We all hung out under a palapa, under like a hut, in the shade for a good chunk of one day and just the reflection off of the sand, off of the water, all the rest of it. I ended up getting barbacoa. Even Nicky did who is Italian and fairly dark already. We got pretty crispy. Definitely that equatorial sun exposure is spicy.
- Andy Deas: Nice. Nice.
- Robb Wolf: Yeah.
- Andy Deas: So we're episode 30. I guess we've turned 30 which gets us nothing.
- Robb Wolf: More responsibility, more problems, more woe.
- Andy Deas: But I did want to tell everyone that finally we have fixed the podcast feeds. So all the folks that joined us somewhere in the middle of the episode should be able to get all the episodes downloaded from iTunes not just the last 10.
- Robb Wolf: Sweet.
- Andy Deas: I know some folks had wondered if we -- if they missed anything by missing the beginning episodes. I think I would --
- Robb Wolf: They missed nothing, nothing worthwhile listening to in any of those.
- Andy Deas: In fact, the first 10 I'd probably never want to listen to again because the audio quality is so bad, but hey, that's just me. Somebody might want to listen to those, the poor saps.

Robb Wolf: Yeah. There might not be anything on TV that night so...

Andy Deas: That's right. No -- American Idol is over I guess so...

Robb Wolf: Yeah.

Andy Deas: All right. well, anything else you want to talk about before we jump into the questions today, Robb?

Robb Wolf: No, we're finalizing the book cover so that's getting close and I'm probably going to head to Vegas here pretty soon. That's where the publisher is located, Victory Belt Publisher, Erich Krauss, and I'm probably going to go hang out with them so Andy and I may be doing a podcast from Vegas and Chico the next go around. But just trying to get the loose ends of the book hammered down. We still have charts and graphs organizing all of the references for it which there are a ton of, but it's getting closer. Just chipping away at it.

Andy Deas: Now, I noticed you can preorder that on Amazon now? Is that --

Robb Wolf: You can, yeah. I've been waiting to -- it's actually kind of cool in a way. I mean, folks have dug that up on their own. I've really been trying to wait until we actually have the cover that --

Andy Deas: The final cover?

Robb Wolf: -- we're going to run with it before throwing it up on the blog and saying, "Hey, guys, it's ready for presale." It just seemed odd or shifty or something if we add like four different book covers pop up which I think we've gone through two or three as it is. So I'm kind of waiting, and then we'll finalize the book cover, and then I'll do a big unveiling on the blog and all that. But most folks have tracked it down anyway.

So yeah, it's for -- available for preorder from Amazon, and if you -- this is possibly being slimy on my part, but if you order 10 books but each -- if you order in one mass purchase, that only counts as one book as far as Amazon.com is concerned whereas if you order a book and then a different order and a book, each adds up. And so if folks want to help the ranking at all and are considering doing multiple orders, that is actually a sneaky way of making the book rankings look better. So there you have it.

Andy Deas: And that is fascinating. I did not know that.

Robb Wolf: I did not know that either, but the publisher let me know about that so...

Andy Deas: I'm also going to be a little sad because I'm used to the cover that's on Amazon now, and I know when I get my book it won't have that cover. So you know, I think I'm going to have to print the old cover out and put it up my wall or something. Just so I can remember what it originally looked like. It's like the original Star Wars movie poster, and then that's not the one they went with but...

Robb Wolf: The Revenge of the Jedi, yeah.

Andy Deas: Exactly.

Robb Wolf: I think we might be able to harvest some of it because that was from Joey Jimenez who does the Life As RX X stuff and does really cool work. And I'm hoping that we can salvage some of that artwork. There's that cover, and then there were a couple of other covers. I had some cool kind of like a Paleolithic cave art people mixed with animals and a DNA helix and there was some cool stuff, but it was really, really busy. Definitely, not mainstream and so we even changed it trying to be more mainstream with the current version. And Barnes & Noble, Borders people hated that one.

And so what's going to pop out is going to be much more mainstream, much more accessible, very clean, but there are so far, far more people who have no idea about the Paleo concept than who do know about it, and those are the folks that we're really ultimately trying to reach at some level. And so making it more broad in appeal definitely makes sense but I'm hoping that we can salvage some of that early artwork and incorporate it into a new website. So we'll see how that goes.

Andy Deas: Oh, I like it.

Robb Wolf: Yeah.

Andy Deas: And then the other thing I thought since we're running off for five minutes is do you want to tease our upcoming guest for the podcast or do you want to hold onto that secret for a little while?

Robb Wolf: Oh, you know what? No. I totally forgot about that. We can tease that. I forget the specific date, but we're going to have Professor Loren Cordain on the podcast and the topic is going to be filling in some of the pieces to the acne question. Many, many people go onto a gluten free, dairy free, Paleo kind of shtick, and they notice that any type of low level or high level acne and some of the really gnarly deep sebaceous gland acne tends

to improve with the basic Paleo intervention, particularly with the addition of fish oil. But maybe one person in 30, one person in 40, they actually either develop acne for the first time or get worse acne, and there are some specific how's and why's to that related to gamma-linoleic acid metabolism versus EPA/DHA metabolism.

And so Professor Cordain has very graciously agreed to come on the show and talk a little bit about that and fill in some of those gaps. And then we'll have kind of a -- I think a more complete picture of what's going on with that scene and then also we'll obviously pimp his -- the dietary cure for acne so that anybody who's having some sort of acne-related problem, skin-related problem, that's an amazing resource to go to.

Andy Deas: Yup. Very exciting. I told Dallas and Melissa that they are being followed by Cordain, and they were pretty stoked on that.

Robb Wolf: Right on.

Andy Deas: So all right. Moving on to the questions, Robb, or else we'll sit here and jibber-jabber on forever.

Robb Wolf: I'll try to answer quickly so we get caught up.

Andy Deas: No, we're good. Number one question from Daneil, I think that's how we're saying that name.

Robb Wolf: We'll say Daniel.

Andy Deas: Unless I spelled it wrong. It's also a very -- another good option.

Robb Wolf: Yeah. "I have a question regarding arachidonic acid. In your podcasts you say it is a pro-inflammatory especially found in milk, which can contribute to acne. However, I have also seen it used as a performance supplement. Is taking it in either dairy or a supplement potentially useful for putting on muscle mass? Would it be worth it potentially if someone didn't have issues with acne? A quick wiki search notes that while it is a pro-inflammatory, it doesn't seem to have a negative effect on muscle inflammation and in fact has been shown to improve muscle mass in some studies.

This supplement," and he provides a link, "contains arachidonic acid as well as resveratrol which I believe you said is pretty legit. What's your take on something like this? Also, one final addition to my question.

Would taking fish oil negate any potential benefits of arachidonic acid or vice versa?"

Robb Wolf:

Okay. So there's a lot going on in this. The arachidonic acid -- so folks who are not familiar, just a background, we have omega-3, we have omega-6's. Those are essential fats that feed into damn near everything that we have going on under the hood -- prostaglandins, leukotrienes -- just a whole plethora of these very small either hormone or hormone-like messengers, cellular messengers, within the body.

And the omega-3 family of lipids and their downstream kind of progeny we usually label as generally being anti-inflammatory; whereas, the omega-6 and their downstream progeny with the arachidonic acid being somewhat analogous to say like DHA. It's kind of the uber omega-6 fat that's in our -- used in our bodies. They're kind of broadly labeled as either anti-inflammatory or pro-inflammatory. That's not 100% accurate. They have characteristics of both going on, but more than not that's pretty good to kind of cover that.

Now, the deal here with Daniel is that I think maybe making some mistake about talking about that milk or meat, particularly grain-fed versions of these foods, can have very high levels of arachidonic acid which can be pro-inflammatory, but the acne issue with dairy is not necessarily related to arachidonic acid. It's related to some other issues. And then related to acne specifically with omega-3 and omega-6 which we're actually going to be talking with Professor Cordain about what which we just mentioned at the opening of the show, this is more of a problem of getting the short-chain omega-6's into the diet.

The linoleic acid, gamma-linoleic acid, those in dihomo-gamma-linolenic acid, those can modify how we express our omega-3 downstream progeny, and this is stuff again that doing an at-the-whiteboard kind of gig and getting schnoekered doing it would be pretty helpful because we could point to the stuff and say, "Okay, here's where the downstream products of prostaglandin and PG1 branching out of the omega-3 family," and we could show some of this stuff. So maybe at some point we need to start doing some vblogs in addition to just the standard podcast. But that stuff aside, there's more background to this.

So the arachidonic acid can be pro-inflammatory, but that's not necessarily the causative factor for acne issues within dairy. And then the whole issue with the muscle mass, yeah, arachidonic acid is actually very, very important for neurological development, for brain development, for proper amounts of inflammation in response to exercise. This is one of

the problems with really heavy duty anti-inflammatory, like NSAIDs or vitamin C, even seems to blunt some of the oxidative stressors, some of the damage that is wrought from exercise and that actually prevents some of our adaptation to exercise.

And so this is where the arachidonic acid, although pro-inflammatory, is actually necessary for normal adaptation to exercise. So hopefully that makes a little bit of sense in all of that context. This product from the animal packet, it looks okay, but I mean you're usually getting a pretty significant amount of the arachidonic acid just out of meat, eggs, fish, all that sort of stuff. So I really don't see the need to supplement it specifically. You certainly could play around with it.

The resveratrol has some activity on the SIRT1 gene family which is the cellular stress kind of adaptation pathways that we see triggered in fasting and caloric restriction. It seems to be cool stuff. The problem being it's very, very difficult to get it into cells, so that's kind of the biggest limiting factor with that. So as to whether or not you actually get any benefit out of it is whether or not you can get it in the cells. Lots of companies make huge claims about their product being better than other products, not to say that these folks do. But really the issue is getting that stuff into the cells. At some point they will figure out a carrier molecule that will survive the stomach and get it through the gut and get it into the cells, but they haven't figured that out yet so....

And then would fish oil any of the potential benefits of arachidonic acid, it could -- again, this is about striking the balance that is good for who you are and what you are doing. So it's hard to say, "Yeah, fish oil would be bad" or "No, fish oil will be good." Generally, what we find is that people are deficient in omega-3's. But again, there are some gene variants in folks in which they'd benefit from a little bit more of the downstream products of the omega-6 pathway. And this is exactly what we're going to be talking about with regards to the acne. There are some people who actually benefit not from supplemental fish oil but from supplemental DGLA, dihomo-gamma-linoleic acid, and also GLA, gamma-linoleic acid.

So that's some stuff that we definitely should have some charts, graphs, bells, whistles to to explain a little bit better. But hopefully, that helps Daniel a little bit more what's going on both with arachidonic acid, the acne potential of dairy, and then also the role of arachidonic acid in the inflammatory process.

Andy Deas:

Right on. Good question.

Robb Wolf: Yeah.

Andy Deas: Totally unrelated, Robb, but for those that don't actually read your blog, I know there are a few who've listened to podcast, I wanted to plug your appearance on Jimmy Moore's Livin' La Vida Low-Carb Show.

Robb Wolf: Oh, yeah, thank you. Jimmy is -- I told him that he was the Obi-Wan Kenobi of interviewers. He's really, really good. I feel like that's probably the best interview I've ever done, and it's like having a good dance partner like he just asked great questions and anticipated -- he's knowledgeable enough about the topic that when I would provide my answer, he was able to kind of take the next step and ask some follow-up questions and everything. It was really good, really fun. Super cool dude.

Andy Deas: Yup. I like Jimmy so....

Robb Wolf: Yeah.

Andy Deas: Check that out. All right, moving on. A question from Jake, "Robb, thank you for the podcasts. I have a question pertaining to the type 1 diabetic. What is your position on blood glucose levels from the stand point of being too low? My fiancée is worried that she can no longer 'feel it' when her blood sugar drops below 70 mg/dL. She has been type 1 for 3 years and in the beginning would feel 'funny' when her blood sugar would be at or below that level. She is very concerned about passing out from low blood sugar.

She is stuck on the 100mg/dL level being safe, but since shifting towards a Paleo diet in January her blood sugars have tended to be lower than 100. This causes her to grab fruit to bump it back up then chase with insulin if she over compensated. A1c has come down from 7.1 to 6.5 but I do not see how it can get lower than that if she is always chasing the 100 mg/dL. Too long of a post I know but any numbers you could throw out may be helpful. Thank you."

Robb Wolf: Yeah. This is where it will be so nice when we get some breadth and depth in a physician network that is steeped in this stuff because the issue of Type 1 diabetic or even Type 2 diabetic potentially overmedicating with insulin causing a severe blood sugar crash and literally not waking up for it is legit. That's a real legitimate concern. But what I see frequently are folks who will pre -- and it's really, really interesting. They will start cleaning up their nutrition reducing inflammation, improving insulin sensitivity, and all that sort of stuff, and

so their body is naturally able to run on more fat and ketone bodies as a base fuel.

And so what removes some of the necessity for glucose and therefore some of the insulin need, but these -- so these folks were able to run normal, good cognition, good performance, all that sort of stuff, and they're able to run at a lower than what is considered "normal" blood glucose level, definitely below 100. But it's not me who is this person so it's easy to be somewhat flip about it and be like, "Oh, just get in and try it and see what happens." But really at the end of the day, it's well like very well understood that A1c's in the 6 and 7 range is not healthy, like not healthy at all.

If you want to live anything that approximates a normal life with regards to aging and the likelihood of developing Parkinson's, Alzheimer's, cardiovascular disease, a whole host of problems, you need to keep that stuff below 5 which is a very aggressive approach, very aggressive protocol. But there are ton of people that have commented on the type 1 diabetes post that I've done that with a little bit of tinkering they were able to get their A1c's down in the 4's and 5's, low 5's, higher 4's. And this is basically creating a normal blood sugar control over time despite the fact that they are Type 1 diabetic which is really impressive, and it's really in a way that you as a Type 1 diabetic are going to be able to age and live in a normal fashion when we're talking 30, 40, 50 years down the road. It is simply not going to happen with a blood glucose level of 100 mg/dL in the U.S. measurement.

So this gets sticky. I'm not a physician. I can't make medical advice. This is all her -- kind of what Jake's girlfriends wants to play with with this thing. Working with a doctor though and trying to find where these points are would be really good because it certainly behooves her to find a blood glucose level that is safe for her but is producing A1c's that are significantly lower than what she's seeing right now. So is this something that she should approach with caution? Yeah, she probably should, but then at the same time I think there's a huge potential benefit to be had out of all this stuff.

And the fact that she -- you know, probably what would happen is because her insulin sensitivity is better, she's able to run at a normal blood glucose level that is significantly lower than what it used to be because she has better insulin sensitivity, and her body is probably running off some other things like fats and ketone bodies to some degree. But again, this is something -- it would be so helpful if we had a better educated pool of physicians, nurse practitioners that we could

refer people to so that they could get some better educated help on these topics because there are better ways to manage this for sure.

Andy Deas: Yeah. Good question though.

Robb Wolf: Yeah, really good.

Andy Deas: I like that. All right. Good, Robb. Actually, we're getting closer and closer to the question of the week which I have put as the last question.

Robb Wolf: Oh, dear! Yes, indeed you did.

Andy Deas: Yeah. So I'm just excited about that. It's near and dear to my heart. But anyway, next question from Marshall. He's got two questions so we'll attack the first one first and the second one is second shockingly. "I took a fasting --

Robb Wolf: That's madness.

Andy Deas: That's crazy. Why are we doing it like that? Next time we're going to switch the order or intermingle the questions. So Marshall took a fasting "12 hours, no food or drink, blood test a few weeks ago. It turned out pretty well. Glucose was 88 mg/dL and triglycerides were 31 mg/dL. LDL was 103 but I'm not too concerned since I eat a good amount of grass-fed meat and fat so we're probably talking about some large fluffy LDL particles. Plus I wasn't eating that clean the week before the test. I'm going in for microdissectomy pretty soon and I am on about 6 5/500 hydrocodone pills a day and I take a few big swigs of fish oil out of my nordic naturals 40 ounces in the morning and in the evening and some vitamin D. Might the fish oil account for my low platelet value of 105..." what are we talking in?

Robb Wolf: It's the 105 k/cu mm, I think is how they're -- yeah.

Andy Deas: Yup, I think that's right. "The print out says 160 is the low end of the range."

Robb Wolf: The short answer on that, the fish oil is not going to affect platelet count. It can affect what's called platelet volume, and this is -- when platelets start getting irritated and tending to stick together, their individual size will actually increase, and then this is when they are kind of prepped or primed to create a clot to become more sticky. And this is why fish oil is kind of an anti-coagulant or a bit of a blood thinner because of the effect it has on platelet aggregation but has nothing to do with the platelet

count. So if he has low platelets, then that's something else. It's not fish oil.

Andy Deas: All right. Any other thoughts on causes?

Robb Wolf: Not without knowing more like I -- there's all kinds of genetic variability on this and offhand I don't remember what normal blood platelet value is. I could try pulling that up here real quick but I -- there are so many -- there's so much variability within that. Let's see here.

Andy Deas: Well, he says, "The print out says 160 is the low end of the range."

Robb Wolf: Oh, low, okay, so that's in there. Okay. It's not that far off is the thing. And here's another piece to that having worked in an analytical lab, they could have not -- you never know if their standards were on. You have to run standards. You have to calibrate the instrumentation all the time. This is not so far out of whack that it couldn't have been just a hiccup in the instrumentation too. And so that's where always when you get somewhat of a funky number like this then you could always run it again and see what's going on from there so...

Andy Deas: Right.

Robb Wolf: Yeah.

Andy Deas: All right. Question 2, "Also, on the PaNu site, there are some articles about marathon runners who have heart attacks all of a sudden. These are people who have run one marathon per year. But the big thing that the articles said was that these heart attack victims had healthy blood lipid profiles. Dr. Harris's view was that there are only a few definitive tests for really gauging the amount of plaque in the blood vessels. Paleo and Low-Carb Paleo and Primal and all of this are all pretty new. Is there any chance that we are just gaming the system, blood lipid profiles, while actually creating plaque? Or maybe the real question is, how did those marathoners game the system to produce decent blood lipid profiles while creating plaque?"

Robb Wolf: Great question.

Andy Deas: Yes.

Robb Wolf: The short answer is like yeah, we could. Maybe we are all goose stepping to a Paleo low carb cardiac catastrophe. The thing though that is common among the marathoners, and we see this with kind of advanced

atherosclerosis in some populations like coal miners, people who get exposed to a lot of respiratory particulate matter. This stuff can actually get in and irritate the lungs, and from that irritation in the lungs then, we get systemic inflammation that can then start precipitating calcium deposits into the bloodstream. And this is what precipitates some of the atherosclerotic lesions.

So what the marathoners have in common is, interestingly, some pretty heavy duty environmental exposure to lung irritants and kind of suspiciously high rates of lung cancer and all forms of cancers but lung cancer in particular with marathoners. And then also just the oxidative stress associated with all that running. And increased blood pressure while exercising although good in transient bouts it is in and of itself a stress.

If you study any type of engineering or physics, laminar flow of fluid dynamics, whenever pressure goes up then you have the potential to **[0:24:49] [Audio Gap]** in turbulence in the vascular beds, the arteries, this is responded to by a thickening of these arterial walls. And it's not healthy. It's not really beneficial adaptation particularly when you start coupling this with some of the endothelial changes that happen in the surface of the blood vessel where it interacts with the actual bloodstream.

So what you have are a bunch of different variables. You have more exercise of a kind of a monochromatic or monotone variety than really perhaps what we're wired up to have, and this isn't getting into the persistence hunting thing or like the ability to run long -- the ability to run long distance is very, very different than the consistent day-to-day training of long distance particularly in the pursuits of advanced athletics. The supposition that advanced athletics represent some sort of penultimate health is just ridiculous and completely wrong, and we'll probably talk about that more at some other point.

But we have oxidative stress from, like, intake of respiratory irritants that irritate the lungs that lead into systemic inflammation. We have oxidative stress just simply happening within the body just the metabolism of fuel substrates to power yourself through the running. You've got issues with the laminar flow and increased blood pressure while training. And it's not, again, that that is bad, but when it's chronic, every day or frequent and for long duration, then this starts imposing a stress, and that stress creates adaptations that may lead to pathology.

So we have multiple variables that end up coming together in this whole scene. And then when you back up even a little bit further, there's just that understanding that the cholesterol blood lipid thing is kind of a nebulous indicator of cardiovascular health anyway. That's a little bit of a -- I don't know if "red herring" is the right terminology for it. But we're kind of focusing on something that isn't all that predictive of heart health anyway.

So there's a lot going on within this, but the bottom line is that definitely arteriosclerosis, atherosclerosis is a multivariate problem. Environmental stressors are a big deal, and that can run the gamut from the type of exercise we have to oxidative stressors that we get exposed to and sleep and hormones and all kinds of stuff. And then also we get dietary factors, lectins, other antinutrients being problematic to say nothing of an elevated insulin levels.

Andy Deas: Yup.

Robb Wolf: So yeah, that's a short question with a potentially huge, long answer. And that was a great blog post from Dr. Harris on that. What was a really, really good insight.

Andy Deas: Yes. Cool. All right. Next, we got a question. It's for Matt or you, Robb. So I'm going to let you answer, and then at some point we're going to have to have Matt on to talk about these and of Matt Lalonde.

Robb Wolf: Totally. And then all of the girls will start throwing their panties out and be like, "Oh, Matt, Matt!"

Andy Deas: So, for Matt and/or Robb, "can you please explain some of the differences between cortisol release due to caffeine and cortisol release due to exercise? I suppose more specifically why Mat would give up caffeine because of it and not give up training? Perhaps there is no useful adaptation from the caffeine-induced release? Thanks."

Robb Wolf: Yeah. This is a really good question, and this is a little bit the thing of why can't we get exercise and a pill? And there's a really good example of that. So, with exercise, the main reason why we get cortisol and/or adrenaline type release is because of a dip in blood sugar levels, anticipatory stuff is a huge factor too just being excited and fired up for like an athletic event or I know when I was doing more of the kind of classic CrossFit type stuff, like I wanted to kind of poop my pants before every workout just because I knew it was going to be really hard. It was kind of like a boxing match or a wrestling match kind of gig.

So you've got some of those anticipatory stresses that raise cortisol, raise adrenaline a little bit which raises blood glucose levels, frees fatty acids into the system. Basically, it's priming you to have fuel ready to do something, and this can be both central nervous system mediated like anticipatory stuff or this can be in response to exercise. So I start doing some high intensity exercise, my blood sugar falls. When the blood sugar falls, there are mechanisms in the body both in the hypothalamus and related to liver that will recognize this situation and will then cause the release of cortisol and/or adrenaline to bring the blood glucose level back up, so it's helping to regulate blood glucose levels in that way.

Now, in this situation in which we're just sitting around in our fanny say like reading and we're drinking a bunch of coffee, it is legitimately a pretty good stressor for you or you're taking in enough that you're getting a pretty good dose-response curve and you're getting a blood glucose increase from this event, then we don't -- in the exercise scenario, the blood sugar goes up, but we're usually immediately sequestering that blood sugar into the muscles to be used as fuel. And the situation of just kind of sitting around drinking coffee, if you raise the blood glucose levels and do nothing, then that blood sugar is just doing all the bad stuff that a high carb diet does; advanced glycation end-products, sticking the proteins, making proteins stick together, aging us in an accelerated fashion.

So there definitely is a big difference between the two. Exercise producing favorable adaptations both -- cardiovascular adaptations, musculoskeletal adaptations; whereas, unfortunately drinking the coffee does not do any of that so...and we see this with anabolic steroids. You can apply anabolic steroids to an individual and do no training and they get no response out of the regimen whereas anabolic steroids given to somebody with a resistance strength training program, they'll get significant hypertrophy and increase in strength because we're sending a hormonal signal that then is propped up with the proper environmental input to then produce a specific response.

Andy Deas: And Robb, if coffee would make me stronger, I'd drink so much of it.

Robb Wolf: I would drink so much and more of it.

Andy Deas: That's a valid point.

Robb Wolf: Yeah.

Andy Deas: All right. Good.

Robb Wolf: Yeah.

Andy Deas: Yeah, we need to schedule Matt but he --

Robb Wolf: I'm telling you, he's going to be the first biochemist in history that women, like, disrobe or throw their panties at him. They're like, "Oh, Matt Lalonde!" Mark my words. He'll be the first rock star biochemist ever.

Andy Deas: I will. I will remember that.

Robb Wolf: Yeah.

Andy Deas: All right. Next, we got a question from Gabe, "Robb, great work per usual and a very specific question on my part. Short and sweet: Father of a friend had some form of jaw/neck cancer which impinged use of his mouth. He is luckily in remission, however, has no saliva production and therefore difficulty eating certain foods. Currently has a feeding tube installed, but is encouraged by his MDs to try to eat anything that appeals to him and he is able to get down due to the salivary issues. MDs have most of his calories coming from a liquid food that, at first glance, looks dreadful. Corn + soy, that's all. Called Jevity and made by Abbott. He's down 75 pounds and is in really rough shape.

Question: Any suggestions on better liquid/liquefied food sources to help this guy gain weight? I couldn't see any reason against taking some greens + egg protein + sweet potato and creating a pretty well rounded liquefied meal. Just wanted your brief to be taken with a grain of salt knowing that you have no knowledge of his case and his battle of cancer. Thanks."

Robb Wolf: Wow! That's a rough scene. I think anything that you could -- it seems like there's nowhere to go but up from kind of like a corn oil and soybean -- probably corn oil, soybean oil. I'm just guessing at what this stuff is made from and then some soy protein and a little bit of carbohydrate from either the soy or the corn. I think it would be hard to not improve on this. Immediate thing that I would consider is something like a coconut milk because of the caloric density. And then if he has any type of digestive issues, which he very well might, the coconut milk being the medium-chain triglyceride is much easier to get into his system than larger types of fat.

It also is a little bit easier to emulsify the MCTs to mix it together say like with the sweet potato with applesauce, anything like that. I would really look towards like kind of nutrient rich foods; blueberries, some sort of a blueberry puree or something like that. You would probably have to be very, very careful of like nuts or seeds so things like blackberries would probably be a no-no but that stuff that they could bounce off of their dietician or whoever is working with them with regards to the consistency and the quality of the food. All those things seem like they would be pretty easy to get down because even without salivary glands -- because it's fairly moist already.

The sweet potato would definitely need to be mixed in say with like a lot of -- you could mix like a whey protein plus sweet potato plus applesauce which is interestingly something that we've used for post-workout recovery meals with some pretty good success. And that seems like it would taste pretty good. It does. It's pretty yummy, has pretty good mouth feel. And because it's relatively moist, I think would bypass most of the need for salivary glands. But rough -- rough scenario there. Hopefully, hopefully the guy is doing better. That sounds like a hell of a thing to go through.

Andy Deas: And I'll throw out another option for the coconut milk which I've been playing with is coconut milk cooked with a ton of cinnamon and sliced up apples until the apples soften, and then I actually blend it in the blender so it's liquid. And then you could, once it cooled, just drink it. I prefer to put it in the fridge overnight until the next day. It's like pudding but....

Robb Wolf: You hussy. You shameless hussy. That sounds delicious actually.

Andy Deas: Well, it's so delicious, Robb, that the big cans of coconut milk, they're like 1200 calories. I could eat that pudding in one seating and I'm like, "Oh, my Lord." I'm not trying to get big right now, but man, if I was, that's what I'd eat every day.

Robb Wolf: Dude, that's legit.

Andy Deas: It's phenomenal. I mean I like it just cooked with the apple softened. Once I thought, man, what if we just puree this? And I put it in fridge and let it, like, solidify. Oh, it's pudding. It's perfect.

Robb Wolf: Wow!

Andy Deas: So you have to cook that up, Robb.

Robb Wolf: The next NorCal potluck you need to bring that and make sure that I have my own pot of it so....

Andy Deas: All credit goes to the legendary Katie Deluca from NorCal for giving us the idea. And then I'm like, "Let's blend it." I love the idea of -- I'll just drink it or I'll freeze it. So, yeah, that's another option to try. So anyway.

Robb Wolf: Right on.

Andy Deas: Right on. All right. Next, a question from Sean, "Hey, Robb, love the podcast, keep them coming. We hear you talk a lot about post-workout nutrition, but, I was wondering what you would recommend as mid-workout nutrition. Specifically, I'm an avid mountaineer, and for a day of 8+ hours of strenuous climbing, I'm confused as to where I should emphasize my nutrition on the carb-fat spectrum. Whether it would be best to eat high carb to maximize glycogen stores and leave the protein/fat for morning and evening, or best to eat high fat and attempt to rely on fat as the main source of energy.

I'm afraid that eating fruit all day would be too much fructose. It's not easy to pack away pounds of sweet potatoes, but trail mix all day might not be the best way to stay fully energized. Normally, I eat plenty of meat and vegetables, with a couple pieces of fruit a week and a hefty dose of chocolate at least once a week."

Robb Wolf: Good man. Good man. The thing -- there's a lot of factors in this. How hard are you going to be climbing? Because that's going to influence your gastric emptying. If you're climbing really, really hard, then kind of running borderline, like, lactate threshold kind of stuff, then you're going to have to really modulate how much you take in in general, but it's also going to really limit how much fat you can take in. Then we need to factor in altitude. When you start dealing with altitude then your body really doesn't like using fat as a fuel source.

There's some funky kind of oxidation reduction reasons for the body shifting towards carbohydrate and primarily glycolysis as its primary fuel kind of source under very high altitude kind of scenarios. And so that makes it a little bit more difficult to run efficiently on fat because fat has a greater oxygen cost per unit energy than carbohydrate does, and it's kind of funky to explain, but folks will just kind of have to run with it at that level for right now.

So, you need to factor in a little bit of, like, how high are you going. You start getting up above 14-15,000 feet, then the elevation is really a factor

with how you're going to metabolize carbohydrate versus fat. And so that's like before we even start talking about what the type of stuff you could bring. There are some lower fructose type fruits that you could put into a trail mix kind of scenario -- dried mango, dried papaya, pineapple. Those things are all much, much higher glucose content and so could be a really good choice. And then mixing that with something like coconut flakes would be massively energy dense, and I think you could get a pretty good air-fuel mixture with regards to the carbohydrate fat content and just have a modicum of protein.

You can really drop the protein down as low as 10-15%. You could mix some branched-chain amino acids into that whole scene instead of doing like a solid protein source like a jerky or something. But the thing that you need to keep in mind with the protein is you need to keep enough protein in the mix for these long efforts to keep your neurotransmitters normal. You need to keep dopamine high. You need to keep basically like -- branched-chain amino acids, tyrosine. You need a broad spectrum amino acid going in there because when you start getting low blood glucose levels -- and even just generally hard work, your body will start converting protein into glucose, just it will start trying to spare glucose because the volume and the intensity of your efforts. And when it does that, it will start pulling branched-chain amino acids out of your blood and then what you are left with is high levels of blood tryptophan. Tryptophan is a precursor for serotonin and melatonin, and so you can have people who start getting very, very lethargic, very sleepy, foggy headed because of inadequate protein intake on these very long pitches.

So to recap the things to keep in mind: altitude, intensity level. So gastric emptying and also when you start getting higher and higher, you're by necessity going to need a higher carbohydrate intake. But then that said, you definitely would benefit from sneaking in as much fat in there as you can because of the caloric density, and then also you're going to need to keep a good little bit of protein in the mix just so that you don't suffer any type of lethargy or impaired thinking because of depleted neurotransmitters because of a low blood protein.

Andy Deas: Cool. No mountaineering for us, Robb.

Robb Wolf: Yeah. Anything -- mountaineering and like deep sea diving, anything where if I just kind of lose focus for a few minutes I can die, I'm not really a fan. Driving is almost outside my wheelhouse at this point. I'm just an idiot so....

Andy Deas: I second that. Moving on, a question from The Dave, "Robb, Andy, awesome stuff. I am a hardcore fan and loyal follower."

Robb Wolf: Oh, God!

Andy Deas: What's that?

Robb Wolf: When this one went up, I knew you were going to pull this one in.

Andy Deas: Why?

Robb Wolf: Just keep reading.

Andy Deas: "Anyway, I will try to make my question short. I am a big dude trying to lose some weight, as well as doing Paleo after some cancer I got cut out of me. That being said, I am down with doing Paleo for life, but I suck at creativity when it comes to what I eat. I have been living on grass-fed beef, natural chicken sausage, et cetera and a huge bag of salad every day. I also have been eating nuts. I am wondering, if eating a lot of nuts is not that great (omega 6 issues), but fruit raises insulin levels, if you had to pick a steady 'go to' food to supplement my meat and veggies, would you choose fruit or nuts and why?"

Robb Wolf: Gee. I would ask the question, who are we talking about? If we have somebody who is really trying to lean out. I would play with both. I would just play -- and this is maybe being slimy and sliding out from underneath the answer, but I would play with both. I would definitely -- if you shift towards more fruit, I would just try to grab some lower fructose fruit sources and/or things like yam and sweet potato. If you're going to use nuts, then I would use -- you can soak nuts overnight and really decrease the amount of -- they won't deal with the omega-6 issue, but you can decrease gut irritation issues and anti-nutrient issues, improve their absorption, and then you can always roll with coconut also. So that would be a good option.

Andy Deas: Is that why you thought I was going to...?

Robb Wolf: No, I was thinking this is the next one.

Andy Deas: Yeah. I like that one.

Robb Wolf: Yeah.

Andy Deas: Okay. "Also, I have been taking the NOW Digestive Enzymes you recommend, but I am having some issues with the, mainly that I have yet to 'feel' the warmth/burn, and I am now at about 10 pills per meal. Is this common? I have tried taking them before, during, and after meals, but still no warmth/burn. It seems a bit crazy that I am taking so many but will continue to jack up the number of pills taken per meal with your blessing. Thanks, guys, seriously."

Robb Wolf: I would actually probably cap it at about 5 to 6 capsules per meal and just run with it like that. And really what I would check with that is to just make sure that there is some qualitative shift in digestion and that being, this gets really great. But, you know, basically like you check out your stool a little bit and does it appear to be more digested? Was there any undigested food in it previously, and now is it kind of cleaned up and it's fully like, okay, yes, that is a poo and not shrimp and asparagus from last night? So that's where it would be the most important issue. It's intriguing but occasionally, you have people who are kind of paradoxical responders.

A good example that comes to mind is Greg Everett who was supplementing with zinc, and then he started having like some joint pain and some -- a little bit of cognitive stuff just like -- not as sharp with some of his thinking as what he had been. And he started doing some research and really felt like he looked he was like heavy metal dosed and possibly zinc overloaded. And so he cut the zinc supplement which was basically just a really high dose ZMA kind of gig, and he started feeling better almost immediately.

And I think it was Garrett Smith that he ended up talking to. And just that occasionally some people with the zinc tally test where you take a little swig of a zinc-sulfate solution -- and people who have adequate zinc in their system, this zinc tally test will taste like you're chewing on chrome bumper. And for Greg, he can't taste it at all. So he's kind of an interesting responder in that way. So it could be a situation here with Dave in which he just -- for whatever reason, he's not feeling the action of the betane hydrochloride in the stomach.

Andy Deas: Yeah, because I'm in the Dave camp that I have never felt the action in my stomach.

Robb Wolf: Interesting.

Andy Deas: I have all these clients that they start at 3 and like a month later, "I can't take it anymore because every time I do I feel the burn." I'm like, "I hate you."

Robb Wolf: Yeah, yeah. It could just be a big dude deal too. Maybe it's just cavernous belly. I don't know.

Andy Deas: Cavernous belly. A follow-up question on this, Robb. I don't know if you know or not, but someone did ask me the other day, and I haven't had the chance to look, but is there a difference, do you know, between the NOW Enzymes capsules versus tablets?

Robb Wolf: Oh, you know what? The capsules work much more potently, in my opinion, for sure. Yeah.

Andy Deas: And why is that?

Robb Wolf: No clue other than if you have -- the amounts are higher in the capsules. If there's a binder in the tablets, which there is, and if you're already hypochloritic, low stomach acid, then you may not be breaking down that binder.

Andy Deas: Hmm. Okay.

Robb Wolf: Yeah.

Andy Deas: Yeah, because I think I always do the tablets, and I'm not even sure why. I think they just show up that way for Amazon or whatever but --

Robb Wolf: Right.

Andy Deas: I was talking to someone the other day and I was like "Huh?" I had not really actually considered the difference.

Robb Wolf: Yeah. And I'm usually using the capsules. One time I ended up with a bottle of the tablets, and I definitely did not -- I had to take more of them to get the same effect.

Andy Deas: Hmm. Okay.

Robb Wolf: Yeah.

Andy Deas: Good. Good stuff.

Robb Wolf: Uh-hmm.

Andy Deas: Next question from Maureen, "Robb, I started Paleo almost four weeks ago and have not slipped a lick. My question is about 'infectious' rosacea (red bumps not just redness of the face). In the first two weeks eating Paleo my rosacea almost disappeared and then in the third week it showed up again worse than it has ever been and is creeping to parts of my face it has never been before. Wondering is this could be a deeper detoxification or something else. It is quite discouraging since it was almost cleared up in the first two weeks. Thanks."

Robb Wolf: It might in fact be something like that kind of a detox kind of scenario. The two things that come to mind are similar to what we talked about earlier with the omega-3, omega-6 intake, and that some people benefit from some supplemental GLA, DGLA to deal with some skin-related issues that are inflammatory-related and the rosacea definitely follows under that.

The other thing, like, I was rereading the old John Berardi post, the Get Shredded kind of thing that he did, the low carb calorie restricted kind of thing which really interestingly was -- it was low in protein -- when I -- you did the whole thing of tweaking the zone, it ended up being lower protein but almost identical carbohydrate and fat recommendation. It was just a little bit skinnier in the protein. So that was kind of an interesting gig.

But in that article, he talked about the fact that some people can get some really funky responses from fat loss because you can store some lipid soluble constituents in the fat, and oil and water don't mix and lots and lots and lots of pesticides and organic solvents, different chemicals that we get exposed to in the environment. The place that they're going to hang out is in the fat in our body. And unfortunately, one of those places of fat happens to be our brain, but then also it's just generally the adipose tissue in our body.

And so people can get some funky responses from mobilizing that fat and then essentially releasing these toxins -- toxicants back into the system. And the science on it makes sense. I haven't read a lot with regards to environmental toxicology to know if that scenario is legit. I generally respect Berardi's approach on most stuff. I think he sells a whole lot of supplements, but outside of that I dig what he has to say. I think he's a super sharp dude so I found that interesting. So those are my two thoughts on that.

Andy Deas: And perhaps this could be revisited when Professor Cordain is on.

Robb Wolf: Yeah, yeah, we could definitely pull this one out. And also, Maureen, if you hear this and I know this one went up a couple of weeks ago, maybe she could give us some feedback on whether or not it cleared up on its own. And if it didn't, then maybe trying about -- it's hard to get low dose GLA, but the lowest dose GLA that you can and take that three weeks -- take it all three weeks of the month except for the week preceding your cycle. Drop the GLA the week preceding your -- the beginning of menses, and then pick it up after that and let us know either way whether or not that ended up helping.

Andy Deas: Yup. And Maureen, if you do do that, I would -- contact us via the contact page as opposed to following up in the blog that way just so we don't lose the comment for a while.

Robb Wolf: Yeah.

Andy Deas: Yeah. Cool. And the question of the week. Man... A question from Matt, "Hey, Robb and Andy. Love the podcast and information. Shout out to Jason at Cross Fit Epic who turned me onto your info. Quick question: When I watch videos in the CrossFit Journal, all the top athletes look exhausted all the time -- Hackenbruk, Khalipa, among others, though Miko is probably the worst looking one. They have a sort of glassy-eyed look and they seem like they are holding themselves up with their arms when they are standing up. They also have massive dark circles under their eyes.

Do you think this is a symptom of overtraining or is it overwork from working out hard and also running a box? I know you've spent a lot of time talking about fatigue and overtraining and I've noticed improvement when I've cut back, i.e. stopping the WOD when my job is stressful or vice versa so as not to tax the body too much in its response to stress, among other things. Maybe I'm the only one noticing this when I watch those videos. Anyway, thanks for the thoughts."

Robb Wolf: I knew you were going to --

Andy Deas: This is a genius question, Robb, and you know it.

Robb Wolf: I knew you were going to grab this. When it first went up I was like, "Approve and hope Andy doesn't see it."

Andy Deas: You should just highlight -- we need to talk about this because this is important.

Robb Wolf: Yeah. I mean it's highly speculative though like I....

Andy Deas: Well...

Robb Wolf: Can't we all just get along?

Andy Deas: Well, let me just say this, Robb. This is a general statement, and this is not directed towards any of those athletes because I don't know them directly or work with them.

Robb Wolf: Right.

Andy Deas: Part of my issue with the CrossFit model is that in general -- now, I think the very smart coaches out there are doing this, there is not a lot of time spent deloading, tapering, worrying about peaking which you see in every other major sport and fitness system in general.

Robb Wolf: Yeah, totally. I completely agree, and I think to some degree this is why we see such a remarkable changing of the guards. People like Pat Garber, Josh Everett, and a bunch of other folks that are top of the food chain athletes -- and really it's intri -- these folks didn't qualify for the CrossFit games this year, you know. They didn't advance. Sometimes they didn't make it past sectionals depending on the individual. And you don't really see this happen in other sports, the people who have been in a sport a long time.

And now obviously you can have some decline with age and stuff like that. And right now we're seeing an increase in the number of participants in CrossFit pretty significantly and so you're just -- you get a bigger pool of people in there duking it out. And so the more genetically talented the people who have trained harder, longer, you're going to see some different people come out on top. But the thing is we should be seeing the people who have been doing this a long time doing better and better as opposed to they're in it a couple of years, and then they're done.

And I think that a lot of this there's a lot of levels. There is no downtime. There is no periodization. There is no back off week. I'm working with a couple of people who participated at sectional events and did well and advanced, and these people want to, like, blister their fannies. They take two days off, and then they're back in the gym instead of taking the

prescribed week off. And it's -- God, there's just a lot of stuff to this. When you are battling a workout against the clock just to try to get those workouts done, technique gets compromised, metabolic issues become compromised because usually we are -- like you said, there's periodization, there's easier days.

If you're in some sort of a combative kind of sport like wrestling or boxing or anything like that, then usually your opponent is fatiguing the way that you're fatiguing. The thrusters and pull-ups don't fatigue during **[0:55:19]** **[Inaudible]**. They're always just waiting there for you, and you can always have the sense that you could have or should have pushed a little harder, and at some point, that repetitious exposure to an exhaustive stress is going to take a pretty big toll. It's going to be very impactful. And definitely, of the people that I've seen who seem to have some sort of overreaching, overtraining kind of thing going on, they're usually athletes who are also gym owners.

And so these people are up with the chickens. They're in the gym all day long. They do their own training. They take it really seriously. They're there late at night. Frequently, these people are traveling in addition to this, not just for competition but also for seminars and stuff like that. And it seriously takes a toll on you. I don't know -- other than, like, dropping in some periodization and some back off times and all that sort of stuff, I don't know how you could hang in this thing over the long haul.

It will be really interesting to see who and what plays out with this next year's events because there are a lot of really remarkably talented people, hard working people, people who have been doing this type of stuff longer than folks who are entering who aren't advancing. And I think at some point you get tired of the suffering. Your body gets tired and beat up. And then also there may be the backside of that, the new people that are entering have even superior genetic base and SNC base. But I think a lot of it is definitely some overreaching, overtraining, not enough periodization.

Andy Deas:

Yeah. And like in the Miko example, like, I think he is still an active firefighter, and I know we train a number of those folks at our gym. And even with doing their best when they are not working for sleep and things, I mean obviously their job takes a toll. Their sleep cycles are always a mess, and it can be hard to manage an average training load versus a large one trying to be a games competitor.

Robb Wolf: Yeah, totally. One night of being up, several times during the night doing standard calls that you would have in a fire department can be pretty impactful.

Andy Deas: Yup. Now, let me throw this other question out to you, Robb, since we're talking conceptually about CrossFit. So obviously, the increase in number of athletes participating in what we'll call the sport; not the fitness component of it, have increased. Obviously, the number of like former division one athlete has increased dramatically, which I think has changed the playing field. You see a number of athletes now with incredible -- incredible athletic backgrounds participating in the sport. But how much of it do you get the feeling that in some ways the ever-changing nature of the sport puts -- kind of flips the dimension on its side about that some of the athletes should always get better?

So what I mean is, even what we see in the gym with some of our athletes competing local strength challenges that are CrossFit based, as you know, if you're a football player, the game is evolving, but it's not really changing. Things are changing but not at the speed of a given sectional versus regional. The WODs can be totally different and can favor a different athlete.

Robb Wolf: Oh....

Andy Deas: You know what I'm saying?

Robb Wolf: Totally. And the thing about it is that if you don't over five year, six year period of time -- if you don't see someone who is 230 pounds win the events at some point -- like if it's always in this leg buck 50 to 200 pound level, then obviously it's not a comprehensive test of fitness. At some point you do need to stack the weights in such a manner that, you know, little dudes no matter how relatively strong they are, are not going to have the engine to drive things forward.

And you know I've had this blog post that I've kind of half-written, and I pulled it back, and I may do it at some point, but it's basically kind of comparing the situation right now to kind of ice skating in that the whole things comes down more to judging in some ways than actual performance. And so it becomes real important what movements are picked. I think over time you'll probably see the whole thing evolve into something that looks a heck of a lot like strongman.

The strongman events are by necessity low judging input because the time that you have a \$25,000 or \$50,000 first place versus second place

kind of scenario and some shitty judging goes on, you're going to have some serious problems as an event promoter. And that's where, like, double-unders, pushups, ring dips, there's a bunch of really cool stuff that's great fitness tools that is really hard to quantify. And I wrote a piece on this for the Performance Menu a couple of years ago, and that's a whole big issue that -- it's very, very easy to stack these events in such a way that you're not going to see a bigger, stronger athlete win.

So that it can kind of give the perception that workout of the day is the end-all, be-all kind of scenario. But just because you can stack some cards in a particular way, it isn't a demonstration either of like overall complete fitness or of even something that's really that entertaining or -- yeah, it's just a whole lot of -- a whole other gig, but it -- I think definitely the fact that from year to year you see such a dramatic shift in the talent pool, and that the people who've been in it longer are actually getting left behind is very, very interesting.

And some of what I think is happening is that you have people come in from football programs, powerlifting, Olympic lifting, track and field, who have done traditional strength and conditioning and then they do six months or nine months of CrossFit, which is enough to become metabolically adapted to the demands that's essentially at peaking phase that they'd go through, or even though nobody calls it this, nobody recognizes it like this really. But they enter with a phenomenal base and then they become acclimated to this type of working out. And then these big strong people who are generally athletic and quick to learn physical movement end up dominating.

And so it's really -- it's cool. It's fun stuff. It's a great place to take the next layer of competition, but folks need to really consider the periodization. And some of the hyperbole with the claims of EliteFitness and stuff like that is just tough to bear at times, but that's a whole other -- that's quasi-political-philosophical type stuff not really helping anybody with anything so....

Andy Deas: Well, Robb, but philosophy is important to talk about. That's what I say.

Robb Wolf: It is. It is. It definitely is. It's just a whole other kettle of fish. But I think it is very, very telling that you can have people who are brand new to the whole concept. They can come in and barnstorm it, and then -- kind of the default that comes out of that then is that -- oh, well, these people have always CrossFitted because squats and deadlifts and 400-meter sprints and suicides and stuff like that, that's CrossFit. But then if all of

that is CrossFit, then nothing is CrossFit. All that stuff too has been hashed out very, very extensively.

So you kind of need to define your terms. What is it? What is it not? And go from there. And I think CrossFit at its most salient points is this mixed modal circuit type stuff which I think there's genius behind it. Despite other past issues I may have with the management of the organization, I think there's genius lurking within the ideas there, and it's very, very powerful. But it's easy to lose sight of where the borders of the application are because of a fervency for the movement and then also the hyperbole associated with the marketing. It's like -- it's good, amazing stuff and that's good enough. It doesn't have to be all things to all people.

Andy Deas: Yeah. And I think it's just -- I think after playing with it for five years, I think you realize that it's powerful, but I think it's a tool just like anything else, and it cannot be applied to every person, to every situation.

Robb Wolf: No, no.

Andy Deas: There's no perfect system for anything.

Robb Wolf: No. And I think that that's a little bit of the heartbreaker of that system for me having been involved with it since literally the beginning that it started becoming an affiliate type scenario where people were actually calling their gyms -- this is CrossFit North or CrossFit NorCal or whatever. Had there been a little bit of an effort to do things like the Calhoun High powerlifting team where they said, "Hey, we are powerlifters, but we've taken this technology, this mixed modal technology, and we've plugged it into our program like this...."

Andy Deas: Robb Wolf.

Robb Wolf: Weird.

Andy Deas: We're back on the internet. We lost you. We're discussing Calhoun High and powerlifting using CrossFit technology.

Robb Wolf: Oh, dude. Okay. I was really....

Andy Deas: You spun up.

Robb Wolf: I was really off on a tear.

Andy Deas: Try to recreate it because I think that is an interesting topic that people may be interested in hearing about.

Robb Wolf: So I'm not sure where it dropped off, but there was a theoretical template that -- gosh! Jason Bagwell I think is his name, and he's a coach of the Calhoun High powerlifting team, and they are very successful high school powerlifting team in Texas. And they used some modified CrossFit templates to build GPP for their athletes, and they did very, very successful with it. And I think that that was an opportunity that was lost was -- CrossFit kind of burst on the scene with this definition of fitness which people argue about it. I still think there's some really interesting stuff about it.

I don't agree with all of it at the end of the day, but I think that it's really interesting. It was an interesting attempt at going from the movements and defining why the movements were functional, what was involved with functionality, what were the most important things about training which was intensity, and what is intensity produce, power, and all this stuff? It was all tied together. That's all cool. And so they had their definition of fitness. But then that became the end-all, be-all instead of also having this broader umbrella which was, "Hey, we can help you make whatever it is you're doing better."

So we don't necessarily have to turn everybody into a CrossFitter. We can put a little bit of a spin on your endurance, a little bit of a spin on your football training, and to some degree, we've kind of seen that. We've got CrossFit endurance now. We've got CrossFit football and some different stuff like that. But I don't know that -- did I -- was I gone when I mentioned the Gracie Jiu-Jitsu gig?

Andy Deas: Yes.

Robb Wolf: Okay. So I saw something similar to them, but I saw the Gracie Jiu-Jitsu scene navigate this whole issue much more effectively, in my opinion. I was in the Long Beach Torrance area '91, '92 right when the first UFC came in. And although the Gracies had this long standing challenge which was if you could beat them in unarmed combat, then they'd paid you \$10,000, \$100,000 -- I forget what it was.

But despite the fact that they have that, they also would go into, say, like a taekwondo kind of scenario, and they wouldn't tell them, "Hey, taekwondo sucks." They would say, "You need, as a martial artist -- to call yourself a well-rounded martial artist, you need both a standup game and a ground game. And so we're going to help you develop your ground

game, and you're going to be a better overall martial artist. It will make your taekwondo more effective." And they ended up getting huge buy-in in that regard. Instead of going into the whole thing with a bunch of bluster and dick swagger and everything, they built bridges.

And I think stuff integrated very, very quickly, and I think that that's an opportunity that was kind of lost within CrossFit getting so enamored with this idea of fitness; although, it's good and I like it. I give props to it, and its honest and legitimate accolades. At the same I think that a lot of stuff could have been navigated differently. And I think that this -- this may sound very political or it may be borderline philosophical or whatever, but I think the reason why it's important is that this influences the way people train. And the fact that people thumb their nose at the concepts of periodization and downtime and stuff like that, are very powerful and very well applied in other arenas. There's almost like this Great Wall of China around this CrossFit concept in which no input from other areas is allowed in, not until it's at least spun and said well, we always do that anyway, but it's an interesting gig. It's a very interesting gig.

Andy Deas:

Yeah. And this is my issue where I feel like there could have been some -- a better way to approach it, and I also feel like from within the CrossFit community -- I think I get frustrated with coaches and trainers that are not actively seeking input from other areas of strength and conditioning to improve what they're already doing because there's a ton of ideas out there that I think can be used to improve a facility that's primarily using a CrossFit mixed mode type model. And I think sometimes some folks are reticent to look outside the CrossFit community for input on how to improve what they're doing already.

Robb Wolf:

Yeah. And you know I think that there's kind of a top down issue with that, and you cracked this topic open so I guess we'll just kind of go with it. But Greg Glassman was very, very knowledgeable about most topics in strength and conditioning, nutrition, anatomy, physiology. He really knows his stuff. And so when he founded the whole concept and was largely running the certifications for probably the first three to five years when the concept was really growing; that was all pretty appropriate because he had a pretty solid depth and breadth of knowledge that if somebody asked him a question, he could answer it with authority, and there could be some give and take in what was being discussed.

But there was a point at which it just quickly shifted away from having an educated populace of trainers that you should know anatomy and physiology that you should understand the metabolic engines that drive

our efforts, that you should understand the difference between eccentric and concentric. And those are really, really important things to understand especially with a technology that's been labeled as being a rhabdo potential and whatnot.

Not understanding the ramifications of driving a muscle or a systemic -- a system, a human being to failure and what does that mean for muscle homeostasis, a.k.a. like, are you going to create a rhabdo situation or not? What does eccentric versus concentric loading, lowering versus raising movements and the type of velocities associated with that? How do those play into microtrauma of muscles and how can that play into a rhabdo scenario? There is none of that, and there's no interest in that stuff because of a huge focus on this bluster-filled performance and "we've got all the answers" kind of gig. And it's really unfortunate because there are some very, very talented people out there.

But what is happening, you have people like James Fitzgerald -- what Welbourn is doing with CrossFit football, what Greg Everett does with his programs, what Michael Rutherford has been doing for a long, long time in this whole scenario, is that, interestingly, even though the parent organization is not adopting some of these better -- we'll call them maybe better business practice, better training practices, but people are doing it. People are applying these higher levels of standards. Like the OPT training course and whatnot has some very deep anatomy, physiology kind of standards and a need to understand the mechanisms behind all this stuff so that you can then be not just a cook but a chef. You can really be an artisan in what you're doing with this stuff.

And so it's interesting in the whole decentralized model, and that's where CrossFit started with, it will likely percolate to the surface whether that ends up being some sort of split off confederacy of people who have taken from the parent idea what they will and then they've gone and developed their own ideas or whether it will reintegrate. It will be interesting to see happen but...Andy Deas has certainly picked a controversial question this time.

Andy Deas: Robb Wolf, that's why I'm here, brother.

Robb Wolf: Andy Deas making Robb squirm.

Andy Deas: Well, in the future you could just say, "We're going to pass". This is performance art per Starrett, so I guess you can pass next time.

Robb Wolf: I'll try not to take a pass. It's just spicy stuff, and I try to just avoid it because it seems to just keep the pot -- kettle at a low boil, and I'd rather just that flame go out. But it's important stuff, and people talk about it a lot so I guess it's worthwhile getting into.

Andy Deas: And for me, I guess just it grows out of somewhat a passion that I have for what CrossFit is and what it isn't. And some of the modifications you've seen in other fitness systems like RKC, they never used to talk about biomechanics and back positioning and stuff. And you fast forward a number of years and you see the growth and the changes that they've gone through, and I'm just hopeful that CrossFit will continue to progress in a fashion that's positive and acknowledges what it is and what it isn't and some of the power of the technology and some of the areas that maybe the technology doesn't hold up.

Robb Wolf: Yeah, yeah, totally. The RKC is a good example of that in which you -- Pavel founded it. He's the Grand Poobah of the whole thing, but there are people that they see as being their senior coaches. They get together once a year, and they hash out better training practices. People will present their case for why this movement should be done differently versus that movement, and it will be debated. And by and large they will kind of go with what the group consensus is. Occasionally, apparently Pavel will veto it if he just feels like everybody is being idiots on a topic because ultimately it is his show.

But I think he's done a really good job. Instead of spinning out all the talents around him and creating factions that are adversarial to what they're up to, he's actually kept more of the talent in-house and had that talent and interest improve his brand, and what he's doing. And they definitely -- the CrossFit hierarchy can take a page out of his playbook and should probably do it sooner as opposed to later. But yeah, that's a whole other thing. I've given all the inputs to those folks that I want to on much of anything so....

Andy Deas: Well, Robb Wolf, I think that wraps up episode 30, with our newfound maturity at Episode 30.

Robb Wolf: It will be amazing if we make it to 31. There will be a low level airstrike in Chico so....

Andy Deas: All right, man. Well, as usual thank you very much for your time. I'm glad you had a successful healthy trip in Belize, and we'll talk to you next week.

Robb Wolf: All right, Andy. Thanks.

Andy Deas: All right. See you, Robb.

Robb Wolf: Later.

Andy Deas: Bye.