

# The Paleo Solution

## Episode 33

- Andy Deas: Robb Wolf, Andy Deas, back with episode 33, the Paleolithic Solution. What's going on?
- Robb Wolf: Not too much. It's cloudy in Chico again.
- Andy Deas: Seriously. Cloudy and humid, actually.
- Robb Wolf: Cloudy and humid, yeah, a little bit gamy in the drawers from all that humidity, but what's a girl to do?
- Andy Deas: Yes. So Robb, I hear you've almost gone completely dark at this point trying to finish the book. That's the word on the street.
- Robb Wolf: Yeah, I'm going to end up in -- actually by the time this podcast hits, we may be fully finished with it but the next couple of weeks I'm pretty much no comments, just going to moderate comments, not answering any emails and just doing the final huge push to get this bugged done.
- Andy Deas: Yeah. So for the listeners, so there's not any confusion, we're recording several episodes in advance. So by the time this post, Robb may actually be done like he's saying, but we may need to put a note on your site that you're not going to answer questions and just -- we're just going to approve comments for a few weeks.
- Robb Wolf: I think I'm going to do a blog post on that because there are some Paleolithic Solution seminars coming up which I need to get those in queue and then also just mention the comments will be approved but probably not a whole lot of interaction on that. Just keep pouring them in, and then we'll get to the answers when I wrap up the book.
- Andy Deas: Yup. All right. Awesome. Well, we have a burly episode planned today after the last two what I would consider shorter episodes. So we're just going to jump to questions, Robb.
- Robb Wolf: Andy pulled out all the stops. This is an episode as big as Andy. Not as furry but as big.
- Andy Deas: Oh, leave my beard out of this, Robb. First, we got a question from Shea, "Hello, Robb. I have been diagnosed with Hashimoto's disease and have

been on thyroxine for the past year. Is there anything I can do with Paleo or any diet to balance my thyroid levels to normal so I can discontinue the use? Thank you so much."

Robb Wolf:

The Hashimoto's thyroiditis is like a classic autoimmune disease which has very, very good response to a gluten free kind of Paleo approach. I would do the full deal -- no grains, no legumes, no dairy. Do that intervention for a couple of months. See if you regain any thyroid function out of that. Usually, in Hashimoto's thyroiditis, the immune system starts damaging the thyroid, and you can go into bouts of both hyper and hypothyroid, but generally what happens you go into a long-term hypothyroid kind of scenario with low or no thyroid production. Some folks with the Hashimoto's if they intervene early enough, they will get some recovery to the thyroid, and they can go off of thyroxine or some of the other thyroid meds.

So that's the thing to try. And regardless of whether or not you get recovery, you will feel better. You would likely need less thyroid medication. Once you start getting healthier working with your doc but probably propping up your dietary iodine supplementation like 150 micrograms a day would be a really good idea. If you play with this, let us know how you do with it both with regards to the blood tighter with the autoimmune condition and just generally the thyroid production.

Andy Deas:

And correct me if I'm wrong, Robb, but this is one of those cases where it's like when we're trying this intervention for three or four months in the beginning just to see what kind of recovery, we are talking like 100% super strict, do not pass go, do not accidentally let a grain of wheat drop into your mouth.

Robb Wolf:

Exactly, yeah. And so it gets important that even if you -- you might consider not eating out for a while. If you do eat out make sure that the location really understands that you -- usually, the way I explain it, I say that I have a fatal life-threatening gluten allergy which isn't true, but they take it really seriously then; whereas, if you just say, "I have problems with wheat," then sometimes they don't even know what that means. But I tell them kind of life-threatening wheat allergy and they take a lot more -- it is very simple stuff.

If you -- if they're making a salad for you, instead of using the same mixing bowl that they use that had croutons in it, they just grab a new mixing bowl. I mean it's really not that big a deal for the folks in the restaurants, but it really makes a huge difference for you. But you need to be very fastidious with this. No grains, no legumes, no dairy, and ride

that out for a couple of months and see how you do. And this is another one I think I have a couple of blog posts on Hashimoto's, and we've seen some really, really, good responses from folks.

Andy Deas: Yup. All right. Good. Next, we got a question from Becky and Paul, "Aloha. Our son has severe nut allergies, and we are trying to find good alternatives to almond butter, almond flour, et cetera. Could you please give us some guidance? I was looking at quinoa flour but can't find whether it is a good source?"

Robb Wolf: Quinoa is definitely not a good source. Interestingly, quinoa even though botanically it's a fruit, it's not really a grain, some of its antinutrients are saponins. They're literally soap-like molecules, and these saponins apparently the research I've seen and in talking with Professor Cordain, this stuff -- not just unlike gluten which causes endocytotic reaction where the gluten molecules are brought in and then there's some autoimmune reaction to that, the saponins physically kind of punch holes in the gut lining because it's kind of like a soap. It actually dissolves some of the lipid and cholesterol constituents of the cells and actually -- it just literally kind of punches a hole in the gut lining.

Then when you have a hole, then you've got permeability and a potential for autoimmunity cross-reaction allergies, all that sort of stuff. So if this kid already has some allergies brewing, quinoa is not a good option on that. And so we're just kind of defaulting the standard Paleo but probably minus the bulk of the nuts and seeds may be steering him towards coconut products -- coconut milk, coconut oil and then just yams, sweet potatoes, meat, seafood, fruits, veggies, all that sort of stuff.

Andy Deas: Yeah, and I think the reality with this if you have a nut allergy, I mean I don't think I would recommend cooking a lot with almond flour. Anyway, just based on what we know and so when we're looking for alternatives, I think the reality comes back to you more meats, fruits, veggies, standard actual food rather than some of these alternatives where you're trying to make pizza that kind of is like a traditional pizza or whatever.

Robb Wolf: Right, right. And Kurt Harris, he had a great post on this, kind of a breakdown of what things are kind of "Paleo" and what type of problem do they potentially represent. And his whole treatise on that is like for the love of God, remove grains, legumes. Try to get the bulk of your fat from animal sources, grass-fed or pastured animal sources, and his whole idea on that is that you get good amounts of saturated fat, good amounts of monounsaturated fats and then the omega-3 and omega-6 in the proper ratios.

And so it ends up just bypassing all this gut irritation, any of the omega-3, omega-6 imbalance, then we maybe drop in a little bit of things like olive oil, pastured butter and all that sort of stuff at the end of the whole thing. And it's a really good look at that. I think he posted it over a year ago, maybe February 2009, but really good piece that kind of -- we're just seeing more and more that the large amount of nut intake, it's probably not all that good a thing for folks.

Andy Deas: Damn Barry Sears.

Robb Wolf: Yeah.

Andy Deas: Okay. Cool. Actually, I'll dig up -- I'll try to dig up the post and put that in the show notes.

Robb Wolf: Yeah, it's a goody. It's really well-written, and it's just a nice kind of hierarchy of thinking and why we might choose this thing versus that thing or why we might exclude this thing versus that thing. And he has a nice wrap-up on the whole -- the end of it which is just basically, it's not a real sexy position to set up, kind of what he's talking about, what we're talking about. It involves a fair amount of finger wagging about don't eat this, don't eat that. There's a little bit of social isolation that pops up from it. It's just kind of cool like I had not -- I just tracked this down a couple of days ago, but it really sounds similar to stuff that I've articulated to people that this is a really good way to eat.

I think it's becoming more and more accepted but you've got to really want to do it because you're kind of a goofball. You go to family functions, you go to work functions, and people are like, "Why don't you want a hamburger bun? Why are you rolling up your hamburger with a piece of lettuce and eating it that way," and all that. So it's -- you've got to have some fairly compelling reasons for doing all this stuff particularly for the kids.

Andy Deas: Yeah. All right. Good. Next, we got a question from Erik, "Robb, thank you for the podcast. They have been informative and I look forward to learning something each week. I recently competed in the South Central Regional in Fort Worth at what is called Hell's Half Acre, but it only resembled hell if they turned up the heat." I don't even know what that means. Anyway....

Robb Wolf: It's a Texan thing. I don't know.

Andy Deas:

"I definitely notice performance drop offs in the summer as the heat turns up in Texas, as our box relies on industrial fans but no central air. My question is there a way to eat within Paleo to work on countering some of the effects of triple digit heat or a generally warm natured condition. I spoke with Sam Nix and he mentioned that you spoke about the topic at a Nutrition Seminar in San Diego a while back, but I haven't heard about the topic on the podcast.

A little background: I am 29 years old, 5'10", 185 lbs and as soon as I start warming up I pour sweat. The trainers are thinking of getting me a mop bucket with my name on it if that gives you a picture of my post workout condition. I have been eating Paleo with one cheat a week usually dark chocolate covered almonds pecans or ice cream since January. My hydration averages between 2L and one gallon of water a day depending on level of intensity heat etc. I drink two cups of coffee a day. I have been known as a sweater in all sports I have competed in so this is not a new condition. I generally run very warm and get hot in situations where others are comfortable. Not sure what would be relevant so I tried to put as much as possible. Thank you."

Robb Wolf:

Good. Good stuff in this. The kind of running hot deal, you can have -- I haven't seen in western medicine a good way to describe this like in Chinese medicine, they would call this kind of yong excess kind of like heat or activity excess like literally -- obviously, it sounds like, okay, the dude's hot he sweats or whatever. But there are some Chinese medicine stuff that they will do, some adaptogens that usually focus on kind of the adrenals and the thyroid output that can -- I think all it does is just kind of knock your basal metabolic rate down a little bit and people are like, "Oh, you're getting fat with that."

But you know, there's -- you need to understand some stuff that organic reactions, they proceed very much based on -- in a rate-dependent fashion based on temperature and every time you double the temperature 10 degrees Celsius then you -- or not double -- increase the temperature 10 degrees Celsius, you double a given a reaction rate. And so if your body runs a degree Celsius higher than normal or even a few tenths of a degree higher, you are effectively aging a little bit faster than normal, like the advanced glycation end-products are happening faster as some of the reactive oxygen species that are spun out of the electron transport chain happen at a greater rate when we are warmer.

Now, I've noticed with myself, this is one of the interesting things I'm playing around with some intermittent fasting. I had tended to run hot pretty much my whole life until I did some playing around with that stuff,

did some other work with some adaptogens, and now I run normal kind of cooler. I don't sweat excessively when I do jiu-jitsu or when I work out and stuff like that. And so I think that there are some ways of playing with this. From a western medical perspective I'm not super how to tackle it, possibly like some **[0:12:59] [inaudible]**, possibly some adaptogens like Siberian ginseng and whatnot. But working with a good Chinese medicine doc like acupuncture Chinese medicine, I think you might actually get some help out of this just as a basic deal.

I think that what you were mentioning at the San Diego seminar, I mentioned the use of hot peppers that can actually down regulate your hypothalamus, and it will make you a little bit cooler. And it's kind of interesting cultures --- kind of equatorial cultures that eat a lot of hot food, spicy food, it actually makes people better able to cope with the heat. It decreases their metabolic rate in this kind of paradoxical response. So that's kind of what the response was there.

Dealing just with the demands of the heat though, the stuff to do is just to kind of get acclimated to it. I think like the coconut water plus maybe a little pinch, a little bit of extra sodium with that is all good for the hydration issues. But you might actually have a little bit of a metabolic tweak that could be affected with some acupuncture Chinese medicine that might help with that kind of base level of excess heat.

Andy Deas:

Good. It's not my problem. I'm at the opposite end of the spectrum. Moving on, Robb, a question from Anthony, "Thank you," sometimes these questions kill me. "Thank you so guys for the great show each week, with several of the members of my box listening each week. The total listenership in Southwest Florida is getting bigger every day. I'm a 35-year-old law enforcement officer and affiliate owner. I follow a Paleo diet with off the rails cheat meals usually every two weeks. At 5'10" and 170lbs I maintain between 7% and 9% body fat. My lifts and WOD times are average, Fran in 4:40, Helen 8:32, C&J 230#, DL 365#, Snatch 170#.

I just recently competed in our Sectionals and again with an affiliate team at Regionals. At Sectionals I finished right in the middle of the pack and at smaller local events I normally finish quiet well (top 5). I have just recently gotten into Wendler 5,3,1 and love the program, I generally use OPT's programming however for GPP. My goal for 2011 is to advance through Sectionals.

If you were me, how would you spend the next year of training and eating? My problems are; I tend to feel a bit skinny and feel I might be better off 10 pounds heavier, but I have always been a hard gainer.

Between running a box and being an LEO I think I have developed circadian rhythm sleep disorder. Regardless of what time I go to sleep, usually 3:30 a.m., I wake up at 7:33 a.m." Wow! "Thanks again for putting out a great show each week."

Robb Wolf:

Yeah, that would kill me in no time at all. You know, I could just say like address sleep to the best of your ability, and that would probably be the singular most important thing that you could do all this. You could probably get like a 10% bump on -- all these numbers are good. They are good consistent numbers all the way across. You'd probably see a 10% bump on all this stuff just from getting a sleep better dialed in. Owning a gym is tough in that regard. Think down the road about how you're systematizing your gym so that you can sleep in once in a while and more often than not, if there's any way that you can get your variables shift with the LEO type stuff dealt with, that would definitely help.

So that's the main thing that I would tackle honestly. I would tackle that really hardcore. If you can't get much progress on that, I think the Wendler 5/3/1 is great for addressing basic strength needs and then I would -- the main things that you're going to see lifting wise out of CrossFits-esque workout obviously; snatch, clean and jerk, and variance on that. So I would play around with your accessories like on your lower body days, your squat day, maybe working 10 x 2 snatch and/or snatch variance. You can play around with that ranging from snatch, power snatch, hang power snatch, hang snatch. Just all kinds of variance on that theme, like 10 x 2 on the minute type stuff to get some volume and really get some technicality on it, and then on your deadlift day power clean, hang power clean, split clean, those sorts of gigs.

You might work some push jerk on your pressing day, push press-push jerk, and kind of play around with that in the background for accessory movement, and then just build your GPP basis as best you can. The OPT stuff is pretty legit. I think getting really, really efficient on running is also good. And then the food, basic Paleo focusing on post-workout recovery. If you feel like you're a little light in the shorts then really emphasize the big post-workout meal, big whack of protein and carbs post-workout. Keep an eye on body fat progression, so kind of regulate intake based on body fat levels. I see some pretty good numbers here, see some pretty good body comp. I think just basically focusing on sleep, getting strong, getting technical, and then fuel appropriately, and I think you're going to see some really good benefit.

T Nation had a piece, The Tao of Cressey, and it was pretty interesting where Cressey related moving up from basically about 165 pounds up to

about 200 pounds over the course of -- I think about maybe four years, five years, something like that, and not really eating per se to get huge. It didn't sound like he was force feeding himself at any point during any of this. Just the dude had a really smart periodized program that kind of had some Max Effort work, some volume repetition work, and he ate a high protein, calorie dense diet that supported activity but because of the volume and intensity of the work and the smart programming he had, he ended up getting bigger and stronger out of the whole mix.

And I think the consistency there is just so critical. Lift heavy weights, try to continue to lift heavy weights, maintain a GPP base, build some volume on the -- you know, movements are really important, squat, deadlift, press, push press, rows, pull-ups, all that sort of jive and then feed aggressively but not so much that you have a body composition shifts in a totally unfavorable direction. And it sounds super simple. It's just a matter of like sticking to the plan.

Andy Deas:

Yeah. And I feel like other things that -- I don't think you simply mentioned is periods of deload like, you know, obviously every other program is including those. So especially I think when you're looking out over a year at, "Hey, I want to compete in these events," you have some time to play with periodizing. You have some time to play with deload. The other thing is your point about get efficient at running, get efficient at rowing, get efficient at all the common exercises that I think you see in CrossFit.

I think one of the things that I started to see with some folks is they get better at doing things, ala double-unders, but they don't get as efficient as they could because I feel like a lot of times they're always practicing them under periods of heavy duress, ala against the clock, and I feel like taking periods where you're just working on form and being efficient at a moderate pace and then the intensity on top of that would be beneficial for folks.

Robb Wolf:

Yeah, totally. And especially where you have basically, a year or more than a year to get ready for that, you know. James' OPT, some of his programming reflects this where he will have folks tackle say, like, a chunk of butterfly pull-ups and you stop when form breaks down, and then you rest until fully recovered and then go back at it again. And people are just not in -- in speaking with Erwan Le Corre who is the guy which I'm really looking forward to doing some fun stuff with him. People are not tackling the sport of fitness from a skill acquisition standpoint.

It's like, yeah, you need to build a big engine and all that, but you need to take some time where you are really looking at the efficiency of your movement and simply doing this in a wad format is not the way to do it. And if you do jiu-jitsu or you do kickboxing or any type of martial art like a living martial art or even like college wrestling or something, you can't roll hard every day and just make rolling the point of your whole shtick. You've got to do positional sparring. You've got to drill specific techniques, and you've got to get wickedly efficient at it and do tons and tons of reps, and then progress it into a live setting where it's dynamic, and you're really fighting against a resisting opponent.

And similar to that with the CrossFit type, sport fitness type stuff, you really need to look at the movements that you're good at and be very self-critical, but then work those things in a way where technicality is where it starts and stops, and you need a chunk of your periodized time of your year where that is your work. And oddly enough, you're not going to become massively deconditioned during this time. I mean doing sprint intervals, row intervals, getting movement efficiency on thrusters and snatches and dumbbell snatches and road climbs and all this stuff. You're going to maintain plenty of work capacity out of that.

But interestingly, when you remove a little bit of that competitive element, you're actually going to -- your psyche will recover, your body will recover, some of the overreaching, overtraining stuff which is typical of any type of competitive sport coming out of the end of the season. You should mitigate that stuff while actually getting better at your chosen sport. But you've got to shelve the ego and be self-critical or find a coach who can do this stuff for you and then take apart of your game and figure out, okay, we need to get you really efficient at these 10 base movements, and this is the rotation we're going to be on and how we're going to tackle it.

And then you have a period of time where you start reintegrating those things and putting them in the mixed modal formats and cranking up the volume and the intensity on this stuff -- volume first, intensity second.

Andy Deas:

Yeah. And I think I'm going to quote very quick here or paraphrase. I think everyone at CrossFit always bags on but I think he has a statement where he talks about owning the movements before you add intensity in a ton of load. Generally, that point talking about some kettle bell stuff, but I feel like it's not always about adding more weight in the beginning or adding more volume. It took a form. Let's get some volume under there, and then we can lay it on intensity. There's no point in just always adding weights if you're not getting any of the benefits out of increased

efficiency, if you're not getting actually that much better at the form just dropping 20 seconds off. Helen at this point doesn't impress me unless those 20 seconds are really -- because you've gotten more efficient at the movements. I feel like some of the work capacity stuff is actually easier to get for certain types of folks than the efficiency component is.

Robb Wolf: Sure. And especially when we're talking like range of movement, limitations, bad thrust or finish overhead and stuff like that which over the course of time is going to manifest in some orthopedic problems.

Andy Deas: Yeah, we had a -- there's a strength challenge in a recent near town CrossFit affiliate a couple of weeks ago and it was a great event, there was a bunch of guys to compete with, and it was fascinating to look at some of the athletes that competed there that were physically incredibly strong but did not do well on certain events like rowing just because they weren't technical. They did decent at it because they were strong and powerful. But I'm like, man, if you were technical and spent more time working on efficiency of your rowing not always beating the crap out of yourself on the rower, you would have gone faster and spent less energy and you could use that energy elsewhere to do better in the events.

Robb Wolf: Yeah. So like if you're really tackling the sport of fitness as your shtick, thinking about movement efficiency, thinking about quality of movement and really being willing to curtail work output when technique fails particularly in the formative, the kind of season time when you should be layering in technical mastery ideally.

Andy Deas: Yup. Good. I like that question.

Robb Wolf: Yeah, yeah, really good stuff and very typical like tons and tons of people; they own a gym; they want to be competitive -- both a coach and an athlete themselves and by example in this situation would benefit not only him but all of these folks too.

Andy Deas: Yup. All right. Next, we got a question from Julien. This is I think -- I think there's at least three questions from Australia in here. I think only two of them are labeled as such but.... And one of them claims to be the only fan in Australia. So I've already proven that joke wrong in this episode. So anyway....

Robb Wolf: You would think they would have better taste than to listen to the show at all but a few folks do.

Andy Deas: That's true. That's very true. Well, there's no accounting for taste, Robb. That's one thing we learned.

Robb Wolf: That's true. "Hi, Robb. Can I just say that my fiancée, Lisa, is a massive fan as am I. She wishes you did more podcasts as she hangs o t every Wednesday morning here in Oz for the new ones. Anyway, back to me (ha-ha). I know you have probably covered this before, but I am still a little confused, which is not hard, on pre work out meals. I have been on Paleo for approximately four months now with very minimal dairy, a smidge in my long macchiato and my protein shake. I have just finished my protein powder tub and would prefer to stay away from the protein shakes altogether.

I have been having a shake with BCAA's, Glutamine and Flax Seed oil pre workouts whether it's CrossFit Style or strength conditioning. The rest of my meals throughout the day seem to be perfect. My weekly morning schedule is CrossFit two times a week, strength once a week, agility/plyos once a week with one day of boxing on the bag, five 3-minute rounds. I also train Brazilian jiu-jitsu three times a week, in the evenings, as I have fallen in love with the sport and have started to compete.

My educated fiancée, thanks to you guys, makes me a omelet with three whole eggs, some sweet potato, nutmeg, cinnamon and frozen blueberries every morning for post-workouts which I find gives me great recovery. So to finally get to my question, could you suggest some pre-workout meals for me? I prefer to ask you as I can't always rely on my fiancée to do it all for me. Any help would be greatly appreciated. Please let us know if you ever have the chance to come to Australia as we would be honored to have you here in our beautiful country. Keep up the awesome job."

Robb Wolf: Dude, if we go there we probably won't come home so.... Andy, you're like, "We're moving in, guys."

Andy Deas: Seriously, right.

Robb Wolf: The pre-workout deal I've talked about a couple of times but it definitely -- it doesn't have the same stickiness that the post-workout does just because it is variable from my standpoint. I don't have as solid a picture of what is going to benefit folks from a pre-workout standpoint versus the post-workout gig. The post-workout gig seems to be like a protein-carb combo in general. There are some low carb situations and all that sort of stuff, but that protein-carb post-workout yam, sweet potato plus

salmon or pork loin or something, it just seems to be great. It works amazing.

Pre-workout, it really seems to depend. I've seen people playing around with different stuff, and they find that whether it's strength work or metabolic conditioning or long tempo run or something, they do amazingly well fasted and like there's no amount of food branched-chain amino acids, nothing that makes them do better like that empty stomach just a little edge from a little bit of hunger, and they do amazingly well. And then other people seem to need a fairly good chunk of food pre-workout even as close as 20 minutes pre-workout, and they may do a hunk of protein like literally a piece of chicken and some blueberries.

Other people like I kind of like this branched-chain amino acid glutamine kind of gig. I think doing that sans carbs; it's a good way to go. You can play with a little bit of carbs pre-workout too and see how you feel with that. The pre-workout scene is really, really variable on my book, and I haven't -- in reading other folks' recommendations, it seems like if they're real tied to the supplement scene then they're very, very heavy supplement push, and that seems to be the only consistency in it, but then in my own clinical experience I've just seen so much variation with this.

So I would play with everything from not really eating much of anything to like the branched-chain amino acid glutamine kind of combo without carbs, branched-chain amino acid glutamine with carbs, and then maybe even a little bit of solid food pre-workout. And it sometimes breaks down a little bit too like folks who are doing strength only training, maybe a little bit of like protein or branched-chain amino acids plus a little bit of caffeine, that seems to release a lot of dopamine. It tends to be both energizing but also grounding like you're really focused, and you can really honker in and get some work done for more of metabolic session then seems like folks might benefit from a little more carbohydrate pre-workout depending on where the rest of their fueling is.

But there's just a lot to play with with this, and I don't have 100% rule. If there's any kind of tendency, strength work seems to do well with like protein and a little stimulant, like some caffeine, and then metabolic conditioning type stuff seems to do okay with just a smidge of protein and maybe a little bit more carbs pre-workout. But then I've also seen a lot of people benefit from no food at all. They just seem to run best and have best performance on that.

Andy Deas:

Yes. All right. Good.

Robb Wolf: So it's a real -- not a real definitive answer, but there's a lot of spectrum in there.

Andy Deas: Yeah. And I don't think we've seen that there's a magic solution on the pre-workout stuff.

Robb Wolf: No, not like the post-workout. And it just seems -- I'm actually a little surprised at just how variable it is, and it might be an area of doing some additional research at some point. Talking to Dan John and talking to Tom Fahey and some other folks, they felt like the -- and this is definitely more strength-oriented type stuff, but they felt that the pre-workout protein whether it was just 20 grams of protein from a whey protein isolate, 8 grams of branched-chain amino acids or just kind of a little hunk of turkey, chicken, beef, something like that, that seem to give the best kind of pop and the best kind of hormonal profile for the training session.

Andy Deas: Yup. All right. Next, we have a very lengthy question from Dave, so I'm going to kind of jump around a little bit. Dave, he says, "Hi, Robb and Andy. Good day from your only listener in Australia." We're already proving that wrong. No more Australia jokes. We're done.

Robb Wolf: Andy is just so uptight about fictitious jokes.

Andy Deas: It's just way the same way Robb gets uptight about using bands in the gym, you know.

Robb Wolf: No, no, no. I'm happy with bands. I just don't want to see them with pull-ups.

Andy Deas: It's going to open up a whole other kind of worms, Robb. We're staying focus today. We're staying focused.

Robb Wolf: Focus, focus.

Andy Deas: Focus. "I absolutely love your work and podcast and look forward to each week's episode. Apologies in advance for the long question, but I hope you can help me or confirm for me that I'm on the right track." So I'll jump down a little bit. "Ten years ago I was diagnosed with Hepatitis B. I found out about my condition via a life insurance policy blood test, and to say the least I was completely floored by the news when I found out. Like many people with this disease, I have no idea how I contracted it, never taken intravenous drugs, no tattoos, et cetera, and never remember

getting any symptoms of the acute phase of the disease. I have always been quite fit and healthy.

For the past 10 years, I've been getting annual liver function blood tests and have had regular ultrasounds to check for cirrhosis and scarring -- so far so good. This bug has just been sitting there dormant, viral replication has been non-existent, and liver function tests have all been normal until this year. Viral replication has crept up and my ALT level (a marker for liver damage) is creeping up to just over the high side of normal. My liver specialist is not considering drug treatment just yet, but holy cats! I'm starting to get concerned that this is all starting to go the wrong way.

Rewind a couple of years, I started going lacto-Paleo after finding the incredible Dr Mike Eades and Mark Sisson (and later the equally incredible Robb Wolf), and have found this experience to be nothing short of sensational. Removing wheat has been the single best thing I have done. I would say. I'm now 43 with 3 kids and feel like superman. My parents, who have been Pritikin low-fatters since the '80s think I'm crazy but in the same breath keep complementing me on how great both me and my wife look.

Where am I going with all this? Now that this virus has reared its ugly head, I've been doing a heap of reading on the virus and also on diet and nutrition. All -- and I mean all the dietary recommendations for Hep B sufferers are around low fat, high carb and low protein diets, apparently due to the load that fat and protein puts on the liver. Common recommendations are also around eating several smaller carb-based meals during the day rather than fewer larger meals. This apparently also spares the load on the liver.

What are your thoughts on these things? How taxing on the liver really is a high fat and moderate protein diet, and spreading out meals throughout the day? Is this just conventional wisdom junk?" So let's start there.

Robb Wolf:

There's some truth to this in that when you start getting impaired liver function, it's definitely true that processing protein becomes a little bit more of an issue, processing fat becomes more of an issue like the conversion into ketone bodies. If the level is that high, you could -- something that you could easily do is shift numbers around so that you're taking in a kind of ketavine-type ratios of like 10-15% protein, similar level of fat and then 60-65% carb from yam, sweet potato, that sort of stuff. I would avoid fructose sources like the plague because if there's anything that can and will cause liver derangement and damaged liver function, it's

definitely fructose intake. So this could be something that you could legitimately do.

Look up some of the Kitava study numbers from Staffan Lindeberg and see where those numbers play out and kind of what the types of foods that they're using, and you could run with this for a month, two months and then recheck and see if ALT numbers are going down. It's a real easy way that you could run with that. And I don't see that qualitatively -- like five years ago I would have probably been aghast at recommending this, but I think reasonably -- this is a reasonable approach that you could do to see if it improves liver function. And then there are some other liver support things that you can do like silymarin extract, the milk thistle extract, alpha lipoic acid, gugulipid out of ayurvedic medicine.

There are some pretty interesting antiviral and liver support modalities that you can do -- turmeric or curcumin extracts. All these things are really, really beneficial for liver function. So you might do some poking around in some of those directions as some support for the liver in addition to kind of switching the macronutrients around. And this is where -- I spoke with a guy earlier today, another interview with a triathlon blog that should go up here pretty soon, but the whole Paleo as it's evolving -- for me as I'm kind of understanding, it Paleo, Primal, all this sort of stuff, it's kind of carb agnostic, maybe a tight carb, maybe it's a little carb. It kind of depends.

Definitely, we're focusing on food quality first, and then we generally see some trends of people doing better on a little higher protein, a little more fat. But then like the Primal Mind book, it's recommending some very low protein intakes. An old piece by John Berardi indicating that the protein needs for people actually are significantly less when they're active than when they're healthy versus like a sedentary population. And so like those protein needs maybe a little bit more labile than what we thought, and if it takes a little bit of the pressure off the liver to eat a bit more carbohydrate from yams, sweet potatoes, turnips, all that sort of jive, make the protein a little more moderate and fat more moderate.

Give it a shot and see how you look, feel, and perform. See how the biomarkers with the ALT. They should go in a favorable direction if their recommendation is correct. If this common wisdom is correct, then you should see some improvement in those numbers. And if not, then you can back paddle and bring things back into kind of a little bit more of a balanced macronutrient ratio and see how you do with that.

Andy Deas: Yup. And I think that's -- I just want to read one more paragraph to see if there's anything there that jumps out at you. "From what I know now from people like yourself is that I should be staying away from anything that would increase inflammation in my body -- logical, since Hep B is an inflammatory disease. This would include staying away from any gluten products, omega-6 oils, and processed foods -- basically a Paleo-type diet. I have read that saturated fats protect the liver from damage, so I suspect that these would be good for me in my situation, especially coconut oil for its antiviral properties."

Robb Wolf: Yeah, the coconut oil -- I'm not sure if the antiviral properties extend to the hepatitis strains of virus but I like it for a bunch of other reasons, and one of them being those MCTs are a little less challenging to transport so that like if you start getting a little bit of liver impairment and you're not producing blood albumin quite the way that you normally do, that's one of the main kind of transport backbones for fats in the system in addition to the LDLs and DLDLs. But the MCTs can kind of bypass that whole scene. So that's actually a smart inclusion for a lot of reasons.

And then all the other things he mentioned, decreased short-chain omega-6's, avoid any type of gut irritating grain, legume kind of scenario like the plague. People don't understand too one of the really common side effects of grain and legume problems is also hepatic or liver damage associated with gluten or other lectins. So if you're already running a little bit of impaired liver function, you can only benefit from minimizing these other foods that are usually problematic.

Andy Deas: Yup. All right. And now, Robb, we're moving onto Shawna's question. This is maybe -- we'll it's a two-parter, but it's a very long question. So I think I'm going to start with her update, and then we'll work through any original information that she provided as well.

Robb Wolf: Cool.

Andy Deas: Cool. Okay. So Shawna, "Hi, Robb. I sent in a question on sleep/adrenal burnout a few months back. Yes, you are a busy man, and haven't had my question answered yet so thought I'd add some updated info to it if possible? I've given up the melatonin and tryptophan I was taking on weekdays and have been taking 200 mg Magnesium every night at bedtime plus the 40 mg in my multivitamin for almost a month now. I have been consistently sleeping worse since this change, waking up way more often during the night, with difficulty falling back asleep. I did expect this to happen for a week or two while my body adjusted but would have hoped to see some improvements by now.

I've been off school for close to a month, so had hoped the decrease in stress would also help improve sleep with no avail. I've gone through my food log and tried to identify foods that are triggers to my worst night sleep but have not found anything that jumps out at me. My plan for the next month is to go super strict Paleo, no fruit at all, and lower carb veggies only to see if total carbs make a difference to my sleep -- not that I've been gorging on fruit/high carb veggies. I'm also getting a whole bunch of blood tests to see where things stand. Thanks for any suggestions you have."

So her original question was basically a 30-year-old female, 5'5", approximately 114 pounds, 10% body fat, has had sleep issues for 15 years, was on birth control for 10 years, diagnosed with adrenal burnout two years ago, worked with homeopath to support adrenals and immune system, went through hormone measurement in spring 2009, had an increase in testosterone but still reading low on chart, minimal changes to estrogen, progesterone -- a bunch of stuff going on -- full Paleo diet, a ton of supplementation.

I think one of her original questions which I thought was interesting is also that she said, "Some of the contradictory recommendations in the literature so like in a James Wilson Adrenal Fatigue suggests many ways to improve sleep through diet, the contradictive Paleo nutrition. I've also read that in order to activate 5HTP the more complex carbs taken in that work better than something like fruit, vegetables. He suggests melatonin use to promote sleep for recovery and Lights Out: Sleep, Sugar, and Survival, T.S. Wiley would suggest taking other supplements before bed and completely avoiding melatonin because it suppresses your natural production, yet after speaking with pharmacists, they have not heard of that.

Prior to melatonin use I was sleeping between three to five interrupted hours per night and with melatonin now able to sleep through 60% to 70% of nights with a few really bad nights in a month. I'm hesitant to give up melatonin because the only thing that has given me results without nasty side effects."

Robb Wolf:

Interesting. Somebody -- I forget who it is now. Somebody mentioned though that -- a pharmacologist who is a big expert on melatonin, it was a comment on the blog. That individual said that this person relayed the fact that melatonin, interestingly like, if you supplement with 5HTP you can actually down regulate some of the conversion of tryptophan into 5HTP. There's a couple of things that you could supplement that do cause

some down regulation but melatonin doesn't seem to be a problem. And so I actually grabbed a 3 and a 5 mg bottle of melatonin after that and started playing with it, and I really liked the sleep quality on that. And I'll do it for a week, and then I'll go off of it for a week.

I don't really notice a lack of sleep without it. It seems better with it. So I would definitely recommend reintroducing the melatonin. It seems like there's some adrenal stuff hanging out in here. And so the idea of cortisol can be bumped up one of two ways related to carbs. It can be bumped up on the low carb side by inducing a low blood sugar effects, say, like training hard and low carbs, and then you get a cortisol release trying to bump blood glucose levels back up because we've kind of basically pulled all the carbohydrate out the system. We can also get a cortisol response with regards to too many carbs when we start getting hyperinsulinimic kind of condition going on.

I think there's probably a fairly broad middle ground there where some degree of carbohydrate intake is not really going to be problematic, may even be beneficial, and that would kind of vary from person to person. So I think playing with that is definitely a good idea. If you've been playing with generally kind of lowish-carb then bump it back up. I think she was saying that she was going to go much more strict and go lower. That's certainly a viable option too.

One of our clients said, Katie, she had -- not sleep apnea, but she would wake up about 2:00 a.m. and be awake for an hour or two hours, and she'd been that way since going through puberty about age 13, then did the Paleo challenge, went really pretty low carb Paleo, and her whole sleep disturbance issue just disappeared. So it sounds a little bit somewhere to that.

I like the direction that she's on with all this. I would reintroduce the melatonin. The magnesium dose seems a little skinny -- like the Natural Calm, like a couple of heaping teaspoons of that will give you about 400 or 500 mg of magnesium and doesn't -- I seem to absorb that, fine. It doesn't cause me any GI problems. So I would try maybe shifting a variety of magnesium, and see if that helps too and bump it up a little bit.

Andy Deas:

Yeah. And I think that tough reality of the adrenal fatigue stuff since both you and I have dealt with it to some level a number of clients and even other trainers, is it is hard, complicated, it takes time, and I wish there was an easy answer of do these three things and you'll feel great.

Robb Wolf: Yeah. And probably the biggest thing is protect your sleep, but then that's the problem that she's facing is that sleep is already disturbed. And then it's just kind of like you've got to mitigate any other confounders like non-exhaustive exercise is critical. It's got to -- be stimulating, be a little bit fun, lift weights, walk, maybe do some jogging. If you're doing circuits, the circuits need to be tackled at a pace where you could maintain kind of a conversational tone with people and actually communicate so more of an aerobic kind of output on that and several other things like Andy said.

The recovery from adrenal fatigue and/or kind of overreaching, overtraining is a pretty big deal. And I think being tight with our description, it's not -- as we're understanding now, it's probably not so much like adrenal fatigue that we're seeing in so many people. It's not like adrenal insufficiency, but we're actually seeing hypercorticism or chronically elevated cortisol. And that maybe part of why she was saying the suppressed testosterone levels there too.

You've got one of two routes that pregnetalone can flow into which guards either testosterone or cortisol. And if it goes into cortisol, there's less substrate to be turned into testosterone. And so it starts -- the picture starts making sense. Seeing the whole blood work thing would be helpful for putting this together, but it definitely makes sense.

Andy Deas: And the only other thing that I didn't see in her background and maybe I'm just missing it, but I read through it a couple times. I got some relief from my adrenal stuff with the sea salt supplementation, Poliquin and James Wilson, it's pretty commonly recommended even though it's sort of against what most of the Paleo literature says. And I don't see it listed in this so you may want to play with that in a Robb Wolf's magic Himalayan sea salt that people are urinating in. But it's cheap and if you buy it online, like I've gotten 5-pound bags in bulk for like \$15 and that will last you a long freaking time.

Robb Wolf: Yeah, yeah, because you're just doing a pinch really so yeah.

Andy Deas: So if I recall from Poliquin, they're recommending starting with a teaspoon or something, and they're doing it first thing in the morning to help reset the system. So you can Google that a little bit, maybe play around with it. But I'm pretty sure it's in James Wilson's book as well. I don't think I have that. I think I had stolen Robb's, and he has it back. But something else to play with.

Robb Wolf: Good. Good idea. Yeah, totally.

Andy Deas: All right. Cool. Good question, Shawna. She's our loyal 7th podcast fan, Robb. That's how old that original question was unfortunately because we were still out with six listeners then. Luckily, we've moved on to other repetitive jokes.

Robb Wolf: It will never die. That one is just too good. It will never die.

Andy Deas: All right. Next, we got a question from Matt, "Robb and Andy, I think that I've done due diligence on researching this issue but not being a man of science I'm having trouble figuring out the answer without some help and I was hoping that you might address this question in an upcoming episode of P.S. I'm an avid fan, blah, blah, and I think you're the man.

Okay, here are my two questions: First, what is the deal with legumes? Cordain says that they help throw off the net acid balance and thus they are bad. Well, so does meat and I would figure as long as they are consumed in proper ratios with vegetables, I would think they would be fine. In your blog, you mentioned that they have a similar effect as gluten, contributing to some auto-immune diseases, although I can't find the science to back it. It doesn't mean it's not there. I am just dumb and can't find it. I understand peanuts throw off the omega-6 to omega-3 balance, so where does that leave beans? This is all to an end to making my sister and her family more healthy, and I'm trying to turn them Paleo. This is the last hurdle."

Robb Wolf: So if you do a quick little Google on lectins, British Medical Journal, and actually I'm pretty sure in my frequently asked questions, there's a thing there and it simply says, "Are beans healthy?" and then my answer is "no." And then it has a couple of links off that and one of them is the lectin content of legumes and how British Medical Journal there was a write-up. They had in quotations a healthy eating day at the hospital and folks can consume red beans and black beans but unfortunately these beans were undercooked and the whole hospital ended up with kind of a dysentery type situation.

So the legumes, I don't seem as responsive to them, say, like as gluten for sure, but if I eat something, say, like I have some Mexican food, and I have beans sequentially a couple of days in a row, I start getting a little bit of acid reflux and stuff like that. So it definitely does affect me over time. If you do a little Google searching on autoimmunity and legumes particularly lupus and legumes, you'll find a ton of stuff on there with the legumes being pro inflammatory and problematic with lupus in particular.

Andy Deas: Yup. All right. And second question: what is the deal with this guy? How is this possible based on what we know about diets?" And there's a link to this New York Times article about some crazy vegan endurance athlete. So like how I couch that, Robb, that's not judgmental at all.

Robb Wolf: Are there really any others besides crazy vegan? This question is kind of funny to me. It's like -- how does he say it? How is it possible? Well, we see it so it's possible. I mean obviously it's possible. And looking to these outliers -- so this guy can do ultra marathons, ultra endurance activity and do it at a reasonably good clip vegan. So cool. Good for him. The question is can he do better on Paleo? Would he ever want to play with that? Probably not because he's probably got all kinds of like moral kind of stuff wrapped up into being vegan, and then shagging hairy vegan chicks is probably kind of a pastime for the dude. So there you go.

He's kind of got his whole shtick figured out. But there's a -- what is it? The All-Pro Diet, the Tony Gonzales. This dude played football with Welbourn. The dude is jacked. He's lean. He's muscular. He's vegan. I will never -- not even with 12 cycles of dianabol be as big and muscular as this dude. And although Paleo-ness -- I could put together. So it's one of those things where just because a person does it, it's intriguing and sometimes that's what I need to -- when I post kind of testimonials about -- like I just did one on a dude who did 50k trail run doing it all Paleo like -- because the question has been thrown out there, can you do very long endurance events -- like this was an 8-hour gig -- can you do very long endurance events only eating Paleo? And I was like, well, I think he kind of can. It might be more convenient to do it with some stuff like Cytomax, some kind of portable food. But he figured out a way of like rolling dates with coconut oil and taking some coconut water for some carbs and some electrolytes, and he did it all like out of the box Paleo. But that doesn't necessarily -- it's cool.

I think it's kind of interesting, but it doesn't necessarily mean that that's the best way to do it if you're focused on performance. But then maybe it's a great way to do it if you want a balance of performance, health and longevity. And even that -- like it's very gray area type stuff. I just don't know. But the fact that this guy did it, it's cool, but it shouldn't really freak us out one way or the other whether -- that he can or that he couldn't.

There's so much variability on this stuff. Some people are just kind of outliers, and that's all there is to it. It is interesting though that in the write-up on this, it mentions that I think his mother had multiple sclerosis, had some health issues, and then this guy switched his food

around to try to feel better and all that sort of stuff. So props to him for playing around with all this jive, but I think we also get some of these things like autoimmunity respond really, really favorably to a grain free, legume free, dairy free kind of approach. So that's where -- if this guy ever pops up with some sort of wicked inflammatory problems or some autoimmune issues, then I would probably recommend that he check out some low grain, low legume kind of alternatives.

Andy Deas: Yeah. And I think Tony Gonzales actually switched back to a more traditional-based diet. I believe it was the last thing I read. When I look at stuff like this, I think, one, it's always good to just see what other folks are doing to challenge our beliefs. Would I switch my diet to this based on what I know, what I've seen? Absolutely not. If it works for this guy, great. Even though I like to make crazy vegan jokes just because I'm an idiot, and I think they're funny. But it's just like some of the other stuff we talk about, Robb. Just because some dude at our gym trains like XYZ, does in no way mean that everyone should be training like that.

Robb Wolf: Right, right. And --

Andy Deas: Just because some cool dude squats 1,000 pounds, it doesn't mean I'm going to squat 1,000 pounds training like that guy does.

Robb Wolf: Right. And just to sing the praises of Kurt Harris again. He had -- I think in that same piece or in a separate piece, this deal about Paleo and what does it really mean? And at some point people start getting so spun up on the Paleo concept, and Matt Lalonde has talked a lot about this. I'm hoping we can either get a video piece on him or maybe a written piece. But this Paleo concept, the ancestral concept, is really, really good for kind of here's a good direction. Should we go north, east, south or west? And it's like, well, Paleo is kind of like east. Okay, so let's generally head east.

But then we get all kinds of interesting stuff about fructose and about saturated fat and all this stuff. And the basic statement Paleo or the basic Paleo concept doesn't fully address that. You can sometimes find a little bit of direction in it, but not always. And then like Kurt Harris points out, pastured butter, is that just satan's work or is it healthy for you? And I would generally say it's probably more good for you than not. I mean when you look at the breakdown on it, we're dealing with the lectin issues; we're dealing with the omega-3, omega-6 issues. Butyric acid is known to be beneficial to gut flora. It's a backbone precursor for -- and both a provider of a conjugated linoleic acid and stuff like that.

So it's like, dude, this is pretty good stuff. But it's certainly not Paleo. And so you can get all spun up on these concepts. And instead of making it a religion, instead of making it about being elite or any of this hyperbolic ridiculous kind of marketing spin, use these things as a guide for making informed decisions, then let's look to the scientific literature and see what type of stuff really supports this position. Can we hang our hat on this or do we have more controversy than not? And then from there we can start tinkering with this in our own hopefully informed way. And then see how we look, how we feel, how we perform, track biomarkers of health and disease, and then we should be in a pretty good spot with that.

And so that's where I just -- as much as I would love to just jump up and down and be neener, neener, neener; we've got it all right. It just -- that is such a slippery slope to looking, (1) like an asshole and (2) just also really missing some of the nuggets; the stuff that is really going to improve the next generation of your understanding. And so it's critical to take the stuff in, be critical about the information, but also be very self-critical about how you're assessing this stuff. I've fooled myself on a bunch of different things. I was just sold lock, stock and barrel that humans are supposed to eat like 6 to 8 meals a day in this kind of ancestral grazing pattern. And I made a great argument to that, and it looks like I'm probably really super wrong on that topic.

Then I was pretty adamant that humans just flat should not eat carbohydrate in any amounts or any quantities or qualities. And the quality I think is very, very important, but then we start getting some stuff like the Kitavans popping up, and it's like, oh, maybe the quality issue is really the most -- the largest driving factor and then from there the quantity isn't nearly as big a deal unless we're in a real hypercaloric state or something so....

Andy Deas: Robb Wolf, you're almost not a zealot anymore. It's crazy.

Robb Wolf: Robb Wolf, almost not a zealot.

Andy Deas: But --

Robb Wolf: Well, you know, it -- dude, what were you going to say?

Andy Deas: No. go ahead. Go ahead.

Robb Wolf: Just thinking like when I first got into CrossFit, I went into there with a really good strength, and I think kind of athletic background, a state

champion powerlifter. I had a little bit of gymnastics. I was doing some capoeira, dabbling in o-lifting, and like when I plugged into the CrossFit scene -- even then though I programmed things really differently, like I never did as prescribed like 100 pull-ups, 100 push-ups, 100 sit-ups, 100 squats. I always did like ladders of weighted to pull-ups and weighted push-ups or dips and then jumping squats and stuff. But that aside, like the plugging into that scene, immediately I had some performance boosts and a bunch of different weird directions. I got a standing back flip for the first time. I got a free standing straight, arms straight leg, pressed hand stand for the first time. I got a kick-up from my back for the first time.

And these were all things that I'd been playing with for a long while and then doing this weird kind of mixed modal training, stuff just clicked and it worked like crazy, and I really -- and that was good, but then I really fooled myself into -- I thought that that basic approach to just dropping in metabolic conditioning every day all the time was the quickest route to elite athletics. And I completely neglected my whole foundational development, the fact that I had lifted weights for years, had been at a pretty advanced level on the squat, the deadlift, and the bench, had played with the Olympic lifts, had played with gymnastics, and I neglected all of that formative time.

And so I'm trying now even with the nutrition, even though we see all this good success to still just kind of take it in and take it with a grain of salt and be like, okay, that's cool. That is very exciting. But let's also make sure to keep an eye on how do you look? How do you feel? How do you perform? And track biomarkers of health and disease and make sure they go on the right direction. Let's still be pretty empirical about the whole thing and not get carried away with it because there is going to be some stuff that I'm going to miss. I'm not going to have the whole picture. There's never going to be a definitive statement on all that stuff.

Andy Deas:

Yeah. And I think the tough part too is every time you're making blanket or general recommendations about things like whatever they are -- you know we're always trying to find the answer that works for the majority of people, but I feel like everyone tends to gravitate towards what works the best for them. So if I wake up and think glut bridging helped all my stuff, I all of a sudden start to wonder, oh, I think everyone should be glut bridging or everyone should not be eating carbohydrates. Unfortunately, that's not really true probably.

Robb Wolf:

Yeah, yeah. And like the -- Wendler is a good guide. Some of the writing that he's had on that where he will just point out like kroc rows, the high rep dumbbell rows, really fix this deadlift and fix a bunch of other stuff.

And then for other people it doesn't do much of anything. It's like get in and play with it and keep some records and stay open-minded and have some goals so that you can critically assess what you're doing. And it's really -- it's good stuff, and it keeps you a little more grounded and not so -- not such a zealot.

Andy Deas:

That's my goal, Robb. That's my goal. All right. let's see. So where are we at? Oh, we're with George. Okay, question from George. "Robb and Andy, Just recently discovered your great podcast. I started out as an Atkin's low carber but have now gone Paleo with nice results. I had two bad experiences with kidney stones. One of the reasons I went Paleo was Cordain's work insinuating that a highly acidic diet, potentially Atkin's, leads to the formation of kidney stones. What is your take on this? Having greatly increased my intake of green leafy vegetables, mostly spinach with salmon, so am hoping that my acid/alkaline balance works out."

Robb Wolf:

Yeah. I mean there's no doubt that kind of a skewed acid based balance can be formative or causative in kidney stones, but it's really important to keep in mind you've got a variety of different stones that can be formed. You've got uric acid crystals. You've got -- like in the case of calcium like calcium oxalate crystals. And so there's different routes to how you can get to this spot. Generally, like inadequate water, doing funky food combinations too can be problematic. So like the old British tea with a little bit of milk, the oxalic acid in the tea combines with the calcium in the milk to make calcium oxalate which is a precipitating crystal. It's non-aqueous or doesn't dissolve in water.

So that's a great way to generate some kidney stones, and then put that in with a net acid yielding diet and you've got all kinds of problems brewing there. But also, people who have metabolic derangement who are producing uric acid crystals which would normally be indicative of gout, you can also get uric acid kidney stones too. But this isn't really related as much to like acid base balance as it is to metabolic derangement. So there's a bunch of different stuff that you can go on with that.

This also makes an argument for varying the type of vegetable matter you take in. spinach is interestingly -- spinach, kale, chard, beet tops, which I guess is chard, those are all very, very high in oxalic acid. And so the potential for kind of a calcium oxalate crystal precipitate is pretty high with that stuff if the situation lends itself that direction. So this is another argument for like vary vegetable intake that you have.

Andy Deas: Yeah. And the easiest way to do that is to eat seasonally, and if you don't live in a place where we have nice Farmer's Market like we do in Chico, there's a ton of lists online of here are the seasonal fruits and vegetables --

Robb Wolf: Yeah.

Andy Deas: -- to play with. So I think that's a good way for folks. Otherwise, you get stuck in the "oh I'm going to eat spinach every day of the year" and that's probably not the best approach.

Robb Wolf: Right.

Andy Deas: All right. Good. And next question, second question, "I have started working in some Intermittent fasting two times a week. Thanks to your blog and podcast. I have greatly increased my intake of EPA/DHA per the almighty Robb Wolf fish oil calculator and take about 8000 units of Vitamin D3. Question: On my IF days (I simply go without eating from Dinner on day 1 to dinner on day 2, skipping breakfast and lunch), should I take my fish oil and vitamin D on my IF days or simply take those supplements when I get around to eating at dinner? Thanks again for the great blog and podcast."

Robb Wolf: I'd just take them with dinner. That will optimize the absorption for sure.

Andy Deas: Yup. All right. Moving onto question 10. Were almost to the question of the week, Robb.

Robb Wolf: Ding! Ding! Ding! Ding!

Andy Deas: "Hiya, Solutioners! I was just wondering if you guys might be able to give us a rundown on measuring your body fat on your own. What are the best ways, what are the drawbacks of different methods, et cetera? For instance, I recently had a health check that included some odd scanning device, where I stood in front of a big machine. While the results are in line with what I expected, I know there are other methods, and was specifically interested in getting the most accuracy out of measuring at home. Thanks again, Listener 10 (Jason in Chiba)."

Robb Wolf: The simple -- there's some online calculators like if you pull up body fat testing, and there are some of them that will use just a measuring tape so you do like an umbilicus measurement, a hip measurement, a neck measurement, maybe like a wrist measurement for men. With women, they'll include hip and -- or they might just do the same one. There's a

bunch of different calculators out there though. Those things aren't super far off. They're not bad. They're usually within like 2% to 5% which is a bit of variation, but they are reasonably close. The calipers get a little bit dodgy to do on yourself. You could try doing caliper method on yourself, but it's kind of hard -- like the scapular, the subscapula, the one on your back, you're not going to get it.

So you have to find a method where you're only going to take measurements on the places where you can reach. And then even with that you need to get the caliper set up accurately. The calipers that we use, that Poliquin recommends for like the BioSignature, are like \$600. And he's really of the opinion that the cheaper \$40 to \$100 calipers are just worthless. And honestly, I don't have -- other than the BioSignature stuff, I didn't really have that much background in body fat checking so I can't comment one way or the other, than Poliquin seems to know stuff with that regard.

So I would kind of default to the fact that if he says that those body calipers are the way to go, then they're probably the way to go. Hydrostatic weighing and BOD PODs. Hydrostatic weighing is usually done at some sort of the university setting and is usually pretty legit. BOD PODs are 100% dependent on how frequently they are calibrating those machines which isn't enough. And so I find a lot of variability with that. So it's -- tape measure is kind of the easiest like if you're going to do it all by yourself, that's kind of the easiest, possibly the only way that you could do it.

Andy Deas: Yeah. And I think for me, for most people at home, if we're really talking more about relative accuracy rather than absolute and some combination of periodic pictures, tape measure and maybe jumping on the scale ever once in a while just to track changes seems much more important than knowing whether or not you're actually at 7.4%.

Robb Wolf: Yeah, I would totally agree and interestingly that's exactly how I throw the whole thing together in the book. It is like a combo of scale weight, photos, and some very simple waist, hip, neck, wrist measurements and just tracking that. So it's much more of a qualitative exploration. And then if you really want something definitive, then you go find a hydrostatic weighing at a university or something. And then what would be nice to do is get a photo, get hip, waist -- do your measurements -- measuring tape measurements the same day that you did the hydrostatic weighing, and then that's your baseline. And then everything -- you can adjust your measurements based off of that, and then you've got kind of

your calibrated standard, and it's not going to be perfect but pretty good. Pretty darn good.

Andy Deas: All right. Question of the week, Robb.

Robb Wolf: You really want to go here? Do you want to do it, Andy?

Andy Deas: Well, I do only because the last episodes were short, this is a longer episode. I feel this is like a common theme that we'll argue about for the next year, and then we'll come up with something else to argue about.

Robb Wolf: That's true. Okay. I like it. I like it.

Andy Deas: All right. A question from Peter, "Question regarding - Training the CrossFit Games Athlete a 'new way.' Robb, love your blog and podcast. Here's my question. I recently found myself reading a book by Arthur Lydiard about running and best performance entitled 'Run to the Top.' He's a legendary running coach in New Zealand, coached athletes with Gold medals from 800 meters through to Marathons. I think there are some really interesting parallels with what he describes in being able to reach your running best and possibly reaching your 'CrossFit best' performances.

Specifically he describes a periodized approach to training and with regards to 800 meter running. He emphasizes the need to build a base of high volume work aerobic, as a means to maximize race potential and also longevity over the years. To clarify he's not talking about LSD. He states running volume at maximum aerobic capacity and not straying into the noticeably lactic efforts. He describes the negative effects of constant and ill-timed interval training, resultant high PH levels, a suffering CNS and reduced ability to absorb nutrients into the body as a result.

My questions are: since most CrossFit events are of 800 meters and beyond time duration, would it not make sense to train in an aerobic fashion the majority of the time once you have a suitable strength base? Lydiard adds in elements of strength work, hill training, intervals and speed work to sharpen his athletes but over a sensible time frame. He emphasizes that a good aerobic base protects the athlete from the effects of harder running and that you should 'train not strain.'

Do you think this means a CrossFit athlete should find there 'aerobic sweet spot,' i.e. a level of intensity that is still predominantly aerobic and not bathed in lactic acid for the majority of their WOD's? I know this goes against the CrossFit principle of 'spank it hard every time' but surely

we're dealing with mostly known, almost knowable games events? Many thanks for your thoughts."

Robb Wolf: Maybe we should re-title this one in almost like a Star Wars theme of what is he at? Training the CrossFit games athlete a new hope? Episode 4: A New Hope.

Andy Deas: There you go.

Robb Wolf: I think -- and again like he said, this is just so contradictory in many ways to the way that folks are introduced to CrossFit in this mixed modal training. But God, it makes so much sense. And I think we were talking about this earlier in the show or maybe I'm having a brain fizz because I had an interview today with a triathlete magazine. But get strong, get technical and then build capacity. And to build that capacity, like in the words of Louie Simmons, I think Welbourn was talking to Simmons about this stuff. He -- Louie was just basically like this CrossFit is interesting, but people go after it way too hard too soon.

Why don't they build some technicality, then build some volume, and then peak for the intensity of the events? And I think that this is very much what we're seeing here. I'm definitely going to check this book out, and it's very, very interesting. And it seems to mirror much of, like the GPP production that the Westside Barbell guys do with regards to improving powerlifting performance. Those dudes do a lot of work. They do a lot of sled dragging and all that sort of stuff, but they also tend to -- what I'm seeing them do is not like a lactate meltdown. They're not driving into that middle metabolic engine.

And the lactate production is really beneficial for a lot of things like growth hormone release, mobilizing some fat, but it's -- when it becomes the end-all, be-all, I think you end up just beating the death out of the metabolic pathway. And it's really interesting that I would -- I would be interested in knowing more of the underlying mechanisms of pH changes, the results in changes in gastric motility, nutrient uptake, cortisol production that's layered in to all that sort of stuff. And really what this thing boils down to -- I'm thinking like 20 different things here.

You've got your brand new person whether they're like 50 years old, 80 years old, or 15-year-old like fire-breather, like beginning high school athlete. What's a smart way to introduce some to this stuff in a graded, measured fashion or beat the absolute dog piss out of them on day one and leave them in a smoldering heap puking and pooping their own pants and stuff like that? And I don't think you can avoid the fact that, like

layering in the volume and the intensity and making people technically proficient upfront is going to do nothing but benefit them. And then when you start looking at risk liability issues like potential long-term overreaching, overtraining, rhabdo, the whole potential of just causing enough muscular damage to kill somebody -- wouldn't it behoove you to ramp this stuff up slowly and get some aptitude in the movements and do some work hardening so that you don't cause this problem? And it's a very solvable, easily wrought solution if you're tackling this stuff from a place that's not ego driven, if it's driven from actually trying to get good results with people particularly over the long haul.

Look at like a -- say, like a Helen, like a 400 meter run, a kettlebell swing and some pull-ups, that thing, that workout could be tackled at a jog, literally a jog, and with a lighter kettlebell with body rows instead of pull-ups, and you could -- you have an almost infinite progression with that whole scene. That workout though suddenly could be adjunctive training that could support powerlifting, that could support the base building for a CrossFit games athlete, could be off-season training for a CrossFit games athlete where they're chugging through this stuff in a slow, graded fashion building technical proficiency in the various elements, as opposed to it being another lactate beat down. And as you build volume with this stuff, then you would slowly ramp up the intensity and start making it look much more like game day.

But again, there's opportunity to take in all of these little sub-facets. I like it in here that he mentions, "Lydiard adds in elements of strength work, hill training, intervals and speed work to sharpen his athletes," like that's perfect. That's exactly what we're talking about just in this mixed modal sport of fitness type stuff. It's thrusters, push press, clean and jerk snatch, muscle up, pull-ups, rope climbs. Those are the things that are being tackled in a graded fashion to sharpen the athletes and get them technically proficient and build volume. And interestingly, that volume would probably be a little bit more aerobic based.

David Osorio, CrossFit South Brooklyn, made this great point that we just don't see much long slow distance. For him it's throwing on a backpack and just hiking around South Brooklyn like going shopping and visiting friends, going to and from the gym where -- in which he ends up walking around maybe 8 or 10 miles a day some days. And it's interesting. It builds a really important legitimate GPP base. It's that kind of aerobic base that allows you to recover both from anaerobic and strength efforts. It's kind of interesting.

Andy Deas:

Yeah. And I was talking to another -- we'll say relatively famous CrossFit coach that we're not going to name because I don't like to put words in people's mouths. But anyway, we're having this discussion, and he made the point that when we're talking about how we're going to train our athletes or clients, he's like, "We should keep an eye towards what the best athletes in the world are doing collectively." So not "Hey, this is how Michael Jordan trained," but "This is how thousands of people train and have good success."

And the CrossFit land is the only one at least you should spank it hard every time. Everyone else is periodizing. They're changing intensity. They're changing duration depending on the season and all those things. But for some reason we have this mindset that we need to beat the crap out ourselves every time, and that somehow we're going to get better results and thousands or even hundreds of thousands of high level performing athletes around the world. We found some secret, like really I don't think we think works anymore, even though we were enamored with it at one point.

Robb Wolf:

Yeah. And the funny thing is it's kind of presented as if there's this secret out there that, "Hey, newsflash. Hard work is the route to success." And it's like, okay, yeah, I get that. But from what we've seen training mixed martial arts athletes, sticking people into -- going to worlds in triathlon, different -- bunch of different stuff now. People who are high-level athletes, I don't have a problem getting them motivated. I'm never a cheerleader for these people.

More often than not, I'm in a cat and mouse game in trying to figure out how to keep them from blowing themselves apart. It's like how do I psychologically get them to take a day off, and not have them implode because they're like, "Well, if I can't train today, then that means that I'm a puss," and then their brain comes apart. And they take that day off and then they actually respond and recover from it and all that stuff, but so much of like managing really high-level performance is much more about like keep them -- people on the rails. Whether it's like managing their out of the gym lifestyle excesses or whether it's keeping them from being in the gym too much and just blowing themselves up, being overly work productive.

And so this deal with the CrossFit, it's all about the suffering and the more suffering that's involved with it, the better. There's obviously some element to that is true. No champions are made without a significant amount of suffering. But without some eye on the periodization -- simply saying the best note that I see come out of this scene is simply that after

you're -- if you're doing 3 on 1 off or 5 on 2 off kind of gig, if after your days off you don't feel recovered, then you went too hard on your previous efforts. That sounds great until you realize that if you don't know what is coming, then you have absolutely no idea how hard to go on your efforts.

This is where you absolutely need some sort of forethought and planning in this whole thing and need to punctuate some of your harder efforts with some easier efforts and plan out those easier efforts, and maybe it makes it a little bit easier on your psyche that you are tackling those 400 meter repeats in a technical efficiency-building fashion. That you tackle that 50 reps and pull-ups in a technical efficiency building fashion. That is not you versus the clock. It is you versus yourself trying to become technically -- not just proficient but masterful. And that's a critical piece that like everybody else in every other sport is doing, and I would argue that the people who are going to both survive this sport of fitness and do really well with it, that's the stuff that they need to integrate. And it'll make it a lot of fun. It adds a lot more variety to the whole scene.

When every day is not a beat down, --even though I like doing jiu-jitsu, I like doing kickboxing, if every day was 100% live sparring, I'd be done in like a week, and I would never come back to it. That would just be it because I'd have the crap beat out of me. Whether I was winning or losing, I would be beat to death with that schedule. And so nobody trains that way. You have peaking phases that go that direction ,then you have downtime and off seasons and all kinds of other stuff.

Andy Deas:

Yeah. And I think frankly -- I mean the only thing that we care about is progress. And so how you get there, we don't believe the most efficient ways to beat the crap out of yourself. And that's like the whole thing about soreness. I love -- got to get in my quote today, it's a phrase. He's like, "If I thought -- if all you wanted as a trainee was to be sore, I could beat the piss out of you with the bat and you'd be sore every day, but you would not progress because that in no way is moving you towards your goal."

So sure sometimes you're going to get sore, sometimes you're going to have to suffer, but I think keeping an eye on what's improving and what's not is so much more important than some standard party line like "Hey, I'm going to smack it hard every day," and great that'll get you somewhere maybe in the short term or at specific times of the year it's absolutely necessary, but in no way does that seem like a long-term sustainable plan towards sort of never-ending progress and happiness and elite performance in my opinion.

Robb Wolf: Totally. Totally. And I think we see the better coach as you know, OPT and some different folks, they definitely lived that. So yeah, it's good stuff. I am definitely going to check this book out. What was the name of the book again? Run to the Top.

Andy Deas: Yeah, Run to the Top.

Robb Wolf: Arthur Lydiard. So yeah, I'm going to check that out. It looks just spot-on for all this stuff that we've been talking about. And obviously, written from the perspective of somebody who has done this. They've produced world champion and Olympic champions using this type of methodology, and it's very similar kind of capacity building type work. And it sounds like they've got to focus towards health and longevity over the long haul. Amazing.

Andy Deas: Yup. All right, Robb, with that, we're like an hour and almost 30 minutes.

Robb Wolf: Holy cats! People really got their nickel's worth on this one.

Andy Deas: Or they're going to want to refund.

Robb Wolf: Yeah, totally.

Andy Deas: Either way. Either way. Well, that's it, man. Episode 33 and great talking to you as always.

Robb Wolf: Absolutely. Thanks, man, and good luck with the Miracle-Gro and the beard.

Andy Deas: Thanks. I'll talk to you soon.

Robb Wolf: Later, Andy.

Andy Deas: See you, Robb.