

The Paleo Solution

Episode 67

- Andy Deas: Robb Wolf, Andy Deas, back with episode 68, The Paleo Solution. Robb, we almost didn't make it to record today.
- Robb Wolf: It's been a punchy dodgy kind of day. I thought it was tomorrow. We're recording another podcast at like 6:30 a.m. with unleash the Kraken Lalonde. And so holy cats, man. Andy, what's new with you?
- Andy Deas: Well, I don't know if I told you this story, but you're always talking about the weather. And so my friend in Ohio listened to the podcast. And he was like, "You know what? I thought everyone that wakes up in the morning in California is like, 'I live in California. It's a great day,' and like 'birds are chirping and music is playing'" And I'm like, "Oh, no, we still complain about the weather." And he's like, "You know it's snowing here and like 5 degrees." And I'm like, "Yeah, but when it rains here, we still complain. We don't get up and think, 'Oh, thank God! It's not snowing.' We're like 'Dude, it's raining. Where is our sunshine?'"
- Robb Wolf: Yeah, it's not sunny. Yeah, we don't all have the beach. That's called the L.A. and San Diego.
- Andy Deas: Yeah. And even then when it's overcast you're like, "Why is it not sunny today? I want sunshine." You always want what you can't have.
- Robb Wolf: Yeah. And living in California, you're living in a state that doesn't have two O's in the name. So there you go.
- Andy Deas: Nothing's new with me. Anything new with you?
- Robb Wolf: Not too much. Not too much. The Chico State Anthropology Forum talk is this week which will be postscript when this think runs and then doing some traveling. And then when I get back we're doing the Enloe Hospital talk to the medical staff which should be interesting, and interesting additionally is that Sarah Fragoso of Everyday Paleo is going to be doing a public talk at Enloe Hospital on February 15th. And so depending on how nice folks are to Sarah --if they're jerks, then I'm going to completely lay ways to that thing. I will never get an invite back, but I will have my one hour up there in front of the whole medical staff. If they're cool, then I'll be super nice. So we'll see how all that plays out.

That's about it, man. Oh, and in the news, I think Matt is going to talk about this too, but some really interesting research that just came down the pipe looking at high protein intake in post-menopausal woman. And lo and behold, we get some adaptive changes in renal function, such that, people retain more calcium. And so the whole concept of the net renal acid load high-protein diet being bone de-mineralizing; I think we can confidently drag that theory out in the street, put a bullet in its head and move on. So that's kind of interesting stuff.

Andy Deas: I wish you luck with that, Robb.

Robb Wolf: Yes.

Andy Deas: In 2021, you'll be like "Confidently, I think we could finally lay that argument to rest."

Robb Wolf: Well, one or two of these I think we can occasionally.

Andy Deas: All right, man, questions. We are ready. Are you ready?

Robb Wolf: Let's do it.

Andy Deas: All right.

Robb Wolf: Let's do it.

Andy Deas: Nothing controversial today, Robb, I don't think. I think that we'll be okay.

Robb Wolf: Andy did not -- it was a goofy enough day without provoking it.

Andy Deas: That's right. And now that the Lalonde is soon to be on the show, finally, with his prepared list of questions, I think we'll stir up enough trouble with Matt.

Robb Wolf: Unleash the Kraken.

Andy Deas: He sent me an email just to say, "My Skype handle described me perfectly; although, Robb would disagree because it isn't 'Unleash the Kraken.'"

Robb Wolf: It will be soon. Okay, let's get to the real questions here before people change the channel.

Andy Deas: All right. First question is from Antoinette. She says, "Hi. I just got your book a few days ago and I am reading the exercise section. I have got my six year old doing circuits with me and it was a great way for us to spend time together. Could you tell me a way to do body rows with something around the house? I don't have gym rings and live in a remote part of Australia. By the way, love your book and I am on my way to better health. I liked the first chapters about vegetarianism and your personal experiences. I was a vego for almost ten years myself and I feel so much better now on a high protein diet of meat and eggs. I am having trouble giving up the coffee. Keep up the good work."

Robb Wolf: So a really easy way that you can do some body rows at home, you can take a sheet, take one corner of the sheet, tie a big sturdy, stout knot in it, and then shut that knot on the other side of a door. And now, obviously, you need to make sure your door is table. You need to make sure the sheet is not super old, and it's going to rip, and you're going to fall and all the rest of that stuff.

But assuming all that stuff is okay or you could do the same thing with a thin towel. It all kind of depends on the tolerances of your door with the doorway. If it's real wide, then you can put something ticker in there. If it's narrower, then you could do something skinnier. But a sheet works pretty well, and it's actually pretty grip intensive. And then you can slide your feet right up to the door and do your body rows on that. You're going to be stuck a little bit with the adaptation in that you won't be able to slide the feet under the door, obviously, and be able to get further loading, but it's a really good easy way to home body row set up.

But once you have that kind of idea in mind, you'll probably be able to rig something else along that line; some rope, some webbing that you would use with like come-along straps and stuff like that. You can rig something up fairly easily, but that sheet, typically folks have sheets and/or towels, and you should be able to do something like that. Just obviously, make sure everything is stable.

Andy Deas: I like the idea of just getting a cheap rope and hang it in the backyard and do some rope, Robb. I like it. Get outside.

Robb Wolf: I like it, yeah, yeah. Be outside. Get a tan. Wear a bikini. I won't wear a bikini. Andy won't be wearing a bikini, but Antoinette can wear a bikini.

Andy Deas: Yes, all right. The next set of questions from Lauren, "Hi. First off I love the podcast. Since newly starting Paleo about a month ago, your podcasts have helped me tremendously. I am a nurse practitioner, love evidence-

based medicine, and love how you back up this diet with your understanding of it down to the molecular level. Since starting, I've lost 10 lbs, and I never have heartburn or IBS issues anymore. I am finding that after I went through my two-week lull, my mind is now sharper.

The question is, I run long distances, half marathons and marathons. Since starting this diet, when I run, I feel really weak, and my legs feel like lead. My typical diet is veggie omelet, blueberries and coffee in the morning; salad with grilled chicken and EVOO and balsamic vinegar with apple for lunch; afternoon snack of macadamia nuts and a banana, and dinner is beef or chicken with lots of veggies. Is it my diet? I tried adding sweet potatoes, but I get instant stomachache whenever I veer from the diet. My next half marathon is in May, and I am starting to train now. After two miles I just can't seem to run anymore. Any suggestions?"

Robb Wolf: Might need a little digestive support in there something, like the NOW Foods Super Enzyme. That would be my leaning. Also, with the sweet potatoes, you might try not eating the skins. Regular potato, sweet potato -- I'm not sure if sweet potatoes contain the glycoalkaloids that you have in white potatoes. But it's a pretty safe bet any type of a covering or skin or peel is going to contain some antinutrients in it that could potentially be gut irritating. So I would just try pulling that stuff out of the mix. Make sure you're taking a probiotic and then maybe throw in some digestive support like betaine hydrochloride containing digestive enzyme mix.

Andy Deas: I'm also going to consider that you may need to eat more.

Robb Wolf: You're tackling from the need to run side. I was kind of tackling it from the as she was getting a tummy ache side.

Andy Deas: Yes.

Robb Wolf: Yeah, yeah.

Andy Deas: Yes, I'm tackling it from the -- I can't seem to run anymore. I'm like, well...

Robb Wolf: Yeah.

Andy Deas: Maybe you might need to eat a little more food to fuel the truck.

Robb Wolf: Yeah, yeah. I totally agree, and that's part of my ideal about the --

Andy Deas: Digestive enzymes.

Robb Wolf: -- digestive enzymes because it's sounding like she's kind of getting bogged down and not doing well with that. And Andy, we're going to experience some performance art really quickly here because I have a chicken in the oven. I'm going to go turn it off before it burns. So everybody's going to wait like 15 seconds while I run and turn it off.

Andy Deas: Wow! Robb, I cannot believe you just did that to me. Hmm. So for all the listeners, I'll have you know that after not writing a blog post in over six weeks, my next blog post will be up this weekend at Chasingcapacity.com. I just did an advertisement for myself, Robb.

Robb Wolf: Nice, dude. Nice. Okay. I totally forgot about the chicken, then it's beeping out there, and it was really done.

Andy Deas: This is what happens when you think we're recording tomorrow and we're recording today.

Robb Wolf: I have no idea what I'm doing ever. I am not fit for human interaction. Okay. So yeah, she needs more chow and some digestive support would probably be helpful there.

Andy Deas: Yes. Three, a question from Thomas. "Robb and Andy, can't wait until they do an SNL skit on your podcast." God help us all.

Robb Wolf: God help us.

Andy Deas: "Andy's laugh and Robb's constant one-liners still won't be better than the original though!" All right. We got a number of questions, Robb, one at a time.

Robb Wolf: Okay.

Andy Deas: "Robb, on your recent blog post about you're training at 39, you mentioned to go easy with the Natural Calm as it could cause the trots (and I'm not really into self-torture). How much do you take? And are there other factors that would make someone need to take less/more?"

Robb Wolf: I take about a level teaspoon, and that seems to be an okay dose for me. The factors here are going to be how much other magnesium salts that you have in your diet. Like if you're eating a lot of fruit and vegetable matter, you're going to be getting more magnesium and potassium. It kind of depends on how much calcium you're getting also which that has instead of a laxative effect, a little bit of a firming effect on the GI action,

omega-3, omega-6 balance depending on where you are with your omega intake. That can either make the stools more loose or more firm.

So there are several factors in there. But the magnesium deal seems to be another one of those things which seems to have very low potential downside but seems to have some real good upside like -- again, I'm not massively into supplements particularly, like the nutraceutical-type stuff like vitamins, minerals. Here and there, like, I think there's a need for some iodine occasionally and certain recovery instances. I think people really benefit from, say, like a B vitamin complex or like a zinc complex or something like that.

But in general, if you've got good digestion which you should, and you're eating a Paleo-esque diet which you should, then the nutrient issues kind of take care of themselves. But magnesium, I think, kind of flies under the radar works, like, well, a lot of people seem to experience a little bit better energy levels, better sleep and all that. So we'll sign off on it.

Andy Deas: I'm just laughing a part of your comment. Leave alone until we get to number three from Thomas.

Robb Wolf: Awesome.

Andy Deas: Number 2: "Just like everyone else who asks questions here, I'm trying to lean out (last 5-10 lbs), but am also looking to put some lean mass on. I'm 6'1", 190lbs. Cross-fitting three times per week for three months now, Paleo for three months as well, and now I can see the top of my abs with just a little love-handle action. I recently calculated my protein intake and was surprised it was less than 100g per day. I have upped that to roughly 1 gram per pound of body weight (which is a surprising amount of meat).

I'm taking Natural Calm, Omega-Maine Fish Oil, and 5,000 IUs of vitamin D. In addition to protein, I accompany most of my meals with steamed veggies and cook my meat in olive oil (typically). Other than the meat and olive oil I don't get much fat. Should I try to get more fat in if I'm trying to lose those last few pounds, what is the best type of fat to try to include, if so (avocados, coconut oil, etc.)? Am I on the right track with this stuff and would I benefit from Super Enzymes?"

Robb Wolf: I think almost everybody would benefit from Super Enzymes. We have kind of the typical situation here which is I want to be lean, and I want to be jacked, and you kind of have to pick what you want to do with this. Unless you have really good hormonal response, and usually you'll see this with guys, like, if you naturally kind of cruise around with capped out

delts and trapped development and everything, then you probably don't have extraordinarily good testosterone signaling.

So if that's the case, I think you would just be better played just simply trying to lean out. But part of that equation here, if you were just barely hovering at 100 grams a protein per day before and now maybe you're at 190 because that's what you reported the body weight to be, I would bump that protein up still a good bit in the process of leaning out just because you don't want to lose any lean muscle mass in that lean out process.

And so in that respect, I think keeping the fat kind of moderate, the goal that I would do is lean out. And to do that, I would get the protein at a fair minimum of one gram of protein per pound a body weight possibly even upwards of 50% more than that even for a time, and then do your standard progressive strength-training type stuff. I wouldn't do CrossFit three days a week. If you really want to maintain the muscle mass, I would lift some heavy weights. Maybe do some sprints, do some walking in the morning on an empty stomach, a very low-intensity cardio.

You need to be really -- make specific your goals, and then you can bring that stuff about. Once you get down to the level of leanness that you want to be, if you want to reintroduce some CrossFit style metcon, then that's cool. But in my opinion, it's not the best way -- route to leaning out, unless you want to get in and start weighing and measuring which I honestly don't think there's much need for it. Make sure that protein is good -- lots of veggies, keep the carbohydrate kind of moderate except post workout. You could throw back 50 to 60 grams at carbs, yams, sweet potato, maybe a little bit of fruit, and then keep your fat intake pretty modest so that you've got a mild chloric deficit, and you should lean out pretty easy.

Andy Deas: How do you feel about him cooking all his meat in olive oil, Robb?

Robb Wolf: It's going to be a little heavy in omega-6. I like olive oil plenty, and I actually like the flavor a lot. But it definitely is a not insignificant omega-6 source, and that's where I would lean more towards the coconut oil. Kurt Harris and Chris Kresser have been kind of beating on me about the pastured dairy. And I'm still real -- here's my deal with the dairy which is that I know for a fact -- and Chris and I were kind of talking about this. If you still have gut permeability issues, even the grass-fed dairy could be problematic for you from an inflammatory process. And then, like, we've seen with some of our folks in the gym, Natalie and Katie even when they

do pastured dairy, they still seem to get some allergic type of responses. And otherwise, they're eating really, really well.

So I'm suspicious about any type of real overt GI permeability, so I'm warming up more to the possibility of using pastured dairy fat sources as kind of a primary go-to item, but I still have some reservations. I could be completely out to lunch. I could be wrong. If so, God save me for having been wrong, but it's just -- I've seen some stuff that makes me a little hesitant on that jive, but I'm open to it. Olive oil as an exclusive input is definitely providing a significant amount of linoleic acid, and I think that that short-chain omega-6 we're trying to avoid that stuff like the plague. So that's the only caveat that I would have with that.

Andy Deas: Yeah. I would say with a lot of our clients, dude, anytime we introduce them to the pastured dairy, we still see a fair amount of problems with that, so maybe it's just us, Robb.

Robb Wolf: It could just be us. But I've tinkered with that stuff a lot, and it's not trying to be stubborn in not recommending it, but this is the thing that I've always said with regards to dairy in general. Get as healthy as you possibly can and reintroduce sparingly and see how you do. And if you do fine with it, then cool. I love it like the grass-fed cream, some of the -- even Trader Joe's has a pretty good grass-fed cheddar, and I get acne from it, I get from it, and it's a bummer because I totally love that stuff, but I -- both in myself and in other folks that I've worked with both in our gym and kind of being out on the road, I just haven't seen as good a result as what I would like to see versus, say, coconut oil, for example.

Andy Deas: Coconut oil is magic.

Robb Wolf: Indeed.

Andy Deas: All right, Robb, this is Thomas' third question. He says, "Only if you need to fill time." Oh, no, Thomas. This is the question of the questions right here. "On that same blog post (39 and I look AMAZING!!), it seemed like you were taking an entire 'Super Supplements' store worth of supplements. I thought going on Paleo was all about getting everything you need from whole foods. What gives?"

Robb Wolf: Well, if you noticed most of that stuff was more supportive of other -- like it was pharmacological action. So like the tribulus had pretty much pharmacological action. The DHEA had pharmacological action. So it wasn't replacing something that I would otherwise get out of any type of diet. It was for the purpose of specific physiological functioning. And I

was sick, and I needed some support of measures with that. So I still don't see much need for like big dose B vitamins. I don't see much need for things that are -- maybe some vitamin D. If we were all out in the sun, then we wouldn't really need the vitamin D. I would recommend the sun overtaking the vitamin D if and when you can get the chance. But for people -- we're at, I think, 38 degrees latitude in Chico; like once you get past 40 degrees in latitude -- even during the summer unless you're out for significant periods of time or you have really good weather, it's hard to get vitamin D levels up via just sunlight. And I think once you get to like Boston you're 45 degrees north latitude. So it just gets tough.

So there's some stuff like that that I'm kind of filling in that's missing out of most diets. I was taking some additional alpha lipoic acid and little carnitine, I should get alpha lipoic acid plenty from the grass-fed meat that I'm eating and really I'm getting plenty of carnitine too. But again, that stuff is taken on an empty stomach with kind of a specific purpose of improving dopamine signaling which -- it seems to do. I definitely seem happier, better mood-elevated spirit, and all the rest of that jive. And when I'm looking at it, I see a relatively low downside to the whole thing.

So this is another thing where you -- I guess I would throw back out there, is just that there's no other way that I could eat in which I wouldn't need more supplements than what I was doing with this. And this was a fairly specific protocol for a pretty sick and beat down dude who'd been on the road for three years straight. So that's the context of all that stuff.

Andy Deas: Robb Wolf, that was fantastic. I love how you skirted the Super Supplement store comment. I love that comment. I thought that was funny.

Robb Wolf: Well, it's funny considering I've actually worked in one of those in Seattle.

Andy Deas: Yeah. But I --

Robb Wolf: Pill pusher.

Andy Deas: Pill pusher. But I think the point we're trying to make is that the whole foods diet is a starting point. Some folks may need additional support, and it doesn't, I think, invalidate our Paleo concept or anything. It just shows that some folks made the additional support in specific conditions.

Robb Wolf: And like some folks with adrenal fatigue really seem to benefit from some pantethine. Do you get pantethine and pantothenic acid out of diet? Yeah, but at punctuated points I think some larger doses are probably

appropriate and called for, but -- what you'll notice that -- you're hopefully never going to see me roll out some sort of comprehensive supplement line where I'm like, "Hey, you need vitamin A through Z and then one capsule and six times a day," and all that sort of jive. I know better than that.

So the stuff that you're seeing there, I really try to weigh and measure the cost benefit of that stuff and all within the context of knowing that taking supra physiological doses of different micronutrients can be a problem. And then when we start getting into plant extracts and stuff like that, it's a pharmacological action. It's milder than what you would get out of taking pharmaceuticals, but you're getting a physiological response off that stuff. The tribulus is definitely modifying luteinizing hormone and stuff like that, but it's for a specific purpose.

Andy Deas: Right.

Robb Wolf: If I had a wicked bout of sinus infection or something, I would probably take some antibiotics to get over it. I would try doing some nasal rinses and some stuff like that. But if it was just kind of setting up shop, I would probably take the hit on the antibiotics over just sitting and letting my body just stew with a bunch of inflammation products filling my system because I've got a sinus infection.

Andy Deas: Sure.

Robb Wolf: Yeah.

Andy Deas: All right. Next, we got a question from Sean, "Hey Robb, love your book, blog and podcast. You are really changing lives, mine included. I am 32 years old, fit, live healthy, and been training since 16. I have been having consistent migraines with aura all my life that seemed to be brought on by stress, lack of sleep working nights, or some trigger foods. They weren't frequent, about every couple months, but brutal with all the full body symptoms when they came.

Ever since I started taking ZMA in September 2010 for enhanced sleep, and workout recovery, I haven't had one migraine. I haven't changed anything else but did some research and found a lot of stuff on magnesium supplementation reducing migraines for many sufferers. This is a life saver for me. I would appreciate your thoughts on migraines and magnesium, and maybe even the zinc? Thanks Robb, keep doing what you do."

Robb Wolf: Interesting stuff and I guess all that I would mention in this is that -- is it magnesium changing, say, like vascular bed responses in the brain so that you don't get a migraine or is the magnesium-zinc combo improving sleep quality and when the sleep quality is improved, then we get better insulin signaling, and it's actually an insulin sensitivity issue. Andy and I have some pretty good experience with folks being on a ketogenic diet and seeing stunning improvements in migraines.

And so there's a lot of moving parts to this. It totally makes sense. I don't know what singular factor was really at play here, like better sleep, the magnesium itself, a little bit of both. It's definitely interesting, and this is a thing again where a little bit of zinc and magnesium supplementation I'm not afraid of that causing problems; relative to, say, like really mega dose B vitamin supplement. I've got some real reservations with what with what we understand about methylating agents and DNA changes and cancer.

B vitamins make me nervous in the kind of mega dose format. Magnesium and zinc seems to be pretty benign across the board. It's somewhat self-limiting on the magnesium side, so I'm not really too worried about folks overdoing it. And we again seem to see consistent positive results. So it seems like a goody, a really interesting bit of data. It's cool.

Andy Deas: And BALCO, you know.

Robb Wolf: Indeed, yeah. We got to support BALCO. Although those guys do well without selling TNA; oh, they sell steroids.

Andy Deas: Yes. Cool. We got a question from Yak, "Hi, Robb and Andy. I stumbled across the podcast a couple of weeks ago and having a great time listening to the backlogs of episodes." Geez, that's painful. "I have one goal and that is to look good naked. This, however, is complicated by the fact that although I feel like I'm doing the right things, I can't seem to shift the concentrated fat that's stored in my bum, love handles and waist. I also have a bit of man-boob going on, otherwise I look great.

From what I've been hearing and reading, this could be due to my cortisol levels, insulin resistance, thyroid function, or too much estrogen, maybe all of the above. Either way, I would love it if you could throw some ideas out there for what I could try to address these issues. Would it be worth getting a BioSignature reading a la Poliquin?

About me: Male, 6 foot, 170lbs. I always had issues with eating sugar and refined carbs. And my goal was to lose weight and just feel better. I stumbled across the Paleo diet from Mark Sisson's book about a year ago and been eating that way ever since and feeling great. I eat plenty of protein, fat and veggies, no sugar or gluten. My dairy intake is limited to cooking with butter from grass-fed cows (Kerrygold), and my fruit consumption consists a couple of handfuls of berries a week.

I don't weight or measure it, but I'm confident I'm getting close to 1 gram of protein per pound of body weight a day. I do gym work 2-3 times a week, play football (a.k.a. soccer) a couple times a week. I get a solid eight hours of sleep and take fish oil and vitamin D supplements daily. If you can help me find a solution to my quest, I'll be eternally grateful. Keep up the great infotainment."

Robb Wolf:

So yeah, I think a BioSig deal would be spot-on with this; either BioSig or find somebody that can peek under the hood and tell you what cortisol, testosterone, estrogen, estradiol, like that whole retinue of hormones is looking like. It definitely is sounding like some potentially low testosterone levels, maybe some testosterone preferentially getting converted into estrogen like the aromatase enzyme is kind of up regulated.

There are some things like calcium D-glucarate and some other liver support activities that you can do with antiestrogen protocol. But instead of just kind of slapdash doing that, it would definitely be helpful to get a little bit of a look under the hood with what's going on and then you could tackle this in a concerted fashion.

Again, talking to Chris Kresser, all of this stuff seems to really benefit from going back and making sure that the gut health is in place. And this is all sounding pretty darn good. I'm not really seeing anything that would freak me out, like we've talked about the butter, the Kerrygold. Whatever issues it may or may not bring about, I really doubt that it's at cause here. So probably the gut integrity is good. Then you start looking at the liver function. What's the liver functioning doing? And it's tough to know how that's going without some metabolic panel work.

So I think doing a little bit of an under the hood look would definitely be helpful. And probably if somebody was going to tackle this thing, they would tackle the cortisol issues first, and then start doing some supportive elements in trying to boost testosterone while also preventing over aromatization of testosterone into estrogen or possibly even like an estrogen detox kind of gig where you're improving the ability of the liver

to remove estrogen out of the body. And that would likely be the direction that a good practitioner would help you move with that.

Andy Deas: Yes. Apparently, I pasted that question twice. Yeah. It also says, "I don't recall which podcast I was listening to, but you mentioned you wanted ideas for t-shirts. Since one of your themes seem to be that you only have six listeners, how about a shirt that says something like, "The 7th Listener" next to some Paleo Solution logo?"

Robb Wolf: I kind of like it.

Andy Deas: Yeah. That's pretty good.

Robb Wolf: I kind of like it.

Andy Deas: That's pretty good.

Robb Wolf: Yeah. I kind of like that one.

Andy Deas: Next we got a question from Nathan. "Robb, assuming you could get a population of people who followed the 'Paleo prescription' of diet and exercise with a longevity bias, and assuming these people avoided death by accident, what is your speculation on the processes that would ultimately kill them (presumably in their 90s/early 100s)?"

Robb Wolf: Shoot! We probably see that with Jack Lalanne which at some point unfortunately -- you know it's interesting -- okay, I'm thinking like 50 different things here. Use your words, Robb. So when our cells divide, there are these things, telomeres, which kind of -- if you think about the wire ties that wrap up like red bags and just kind of plastic bags and stuff, telomeres work a little bit like that.

So when our DNA replicates, it gets unwound. And then when it gets wound back, the things that kind of prevent it from just unwinding and freaking out are these telomeres. Different things like stress can accelerate the degradation of telomeres. Each time a cell replicates, there's this thing called a Hayflick limit which you get -- I think it's 50 total replications, and then your telomeres are pretty much done. And when the telomeres are done, the DNA breaks down, degradation, starts happening really, really rapidly.

And I think that that's largely what you see in this centenary. You know these really, really healthy populations that live to the late '90s and beyond. The folks tend to be very, very relatively fit, relative active, sharp

mental acuity, and then usually you see about a two to three week downturn, and they're done.

And that's a lot of what's happening. When the wheels finally fall off the wagon, you have kind of a system wide meltdown where you've had all the cells in the body -- the stem cells have been depleted, so we have a pool of stem cell. A lot of them hang out in the adipose tissue. Those guys are kind of hanging out waiting to help repair, damaged or missing cells and tissues in the body. You have a limited pool of stem cells and different things like high insulin levels, stress again, training, all moves you through the stem cell pool that we have.

So some exercise is good, a ton of exercise -- and this is where like kind of bludgeoning the hyper aerobiciser people or even -- God level the people doing the sport fitness, but packing in more work in a week than what most people historically have done in a month. There could be some potential downsides to that. The potential of burning through that pool of stem cells is a very real issue. I don't have a paper that I could prove that with right now, but everything on paper kind of makes sense. So that's kind of what happens in the late stages of somebody very, very old who is otherwise fit and healthy.

Another interesting piece to all this is, the difference between cancerous tissue and normal tissue -- is that cancer gets what's called essentially an immortality pass. The telomeres do not degrade as cancer replicates. They've got some tweaks in the telomere enzyme, and that's going to be one of these interesting interphases of biotechnology where within weeks or months of each other, we're going to on a grand scale figure out not only how to completely shut down the cancer process because the cancer process of -- in fact kind of a natural process that's happening all the time. What our current situation is, is that the normal processes that would take cancer offline before it became pathogenic don't happen. And so that's part of what's going into the whole pathology of cancer. But when we figure that out, we're also going to end up figuring out how to effectively make cells, and probably ourselves, kind of immortal. Maybe not über -- if you get hit by a bus when you're 400 years old, it may be out of the scope to bring you back, like there may be some limitations to that. But either dramatically slowing telomere degradation or potentially reversing and stopping it.

But the interesting thing is it's going to be a process that looks a whole lot like getting cancer throughout your whole body, and it's going to reset that telomere switch throughout the whole person. But then even within that, the whole kind of Paleo-esque type diet is going to be really

important in not stressing that system because otherwise the usual inflammatory processes that we're trying to avoid -- the grains, the legumes, potentially the dairy, lack of sleep, stress. All those things are still going to be stressful inputs that could degrade that system.

So it's kind of an interesting big picture gig, but I'll try to remember to do a post on that stuff. I've had them rattling around in my head for a while.

Andy Deas: Even the simple questions, Robb, take a long time. No, I'm just kidding. That was a good question. I liked it.

Robb Wolf: Yes, yeah, interesting stuff.

Andy Deas: Next is a question from Loius, "Hey Robb and Andy, first, thanks for the wonderful podcasts and work you do spreading the Paleo word. I have been mostly Paleo for the last 2 years or so, straying here and there to experiment with things like soaked grains (only non-glutinous grains such as quinoa and brown rice) and fermented dairy (homemade kefir). I have definitely found I feel best when staying closer to pure Paleo though.

I have read Cordain's The Paleo Diet for Athletes, but considering Robb's own experience with pursuing athletic performance, I wanted to see if he would be willing to comment a little about specific nutritional strategies he would recommend for the days leading up to and during multi-day tournaments. In my case, it would be competitive Ultimate Frisbee, where tournaments typically last 2, 3, or 4 days with up to four 60-minute matches per day.

I always prepare my own food for tournaments. Others are typically eating lots of bread, pasta, candy, sports drinks, et cetera. So if Robb himself was preparing for such an event, how would he approach pre-tournament, periods in between matches, evenings with matches the following day, et cetera? Supplements included. Apologies if something like this has already been covered, and thanks again for the great work you guys are doing."

Robb Wolf: Good question. We've talked about this a bunch with like the post workout recovery blogs -- blog posts and some of the post workout recovery podcasts that we did early on. What we did for folks with CrossFit games preparation was just more yam and sweet potato between event meals. We cooked up kind of an interesting little combo of about a 3:1, 4:1 mixture of yam or sweet potato mixed with applesauce because that little bit of applesauce -- one thing, it tastes really good especially with a little bit of cinnamon on it. And then if you --

it's easy to eat. You can keep it cold. You put it in a little Tupperware deal and you just kind of spoon it down. But it's got a nice blend of both fructose and glucose.

So you get a little bit of hepatic liver repletion on top of the glycogen repletion. And then you just eat some protein kind of as needed. When you're in a big tournament time, you need enough protein so that you don't get kind of a neurological bunk, but it's definitely more about getting in adequate carbs to help replete you between events. I think stuff like some coconut water with a little bit of sea salt or even regular salt pinched in there as kind of both electrolyte and glucose repletion. That's a pretty darn good option too. But this is also -- all stuff that you need to tinker with ahead of time. You need to do some game-day type activities, and then do some repletion and see how you do. See how your stomach handles this stuff.

For our crew, we actually put some whey protein in with that yam and applesauce mix, and that went down great. But you need to make sure that it all sits well with you. Like I've mentioned before, the last thing that you want to do on game day is do something that kind of upsets your stomach. So just kind of big picture at 30,000 feet, that's the way I'd tackled that stuff.

Andy Deas: Robb, I don't see you competing in Ultimate Frisbee. I'm just throwing that out there.

Robb Wolf: I probably will not be competing for Ultimate Frisbee.

Andy Deas: You'd probably drop dead from all the running.

Robb Wolf: I might. I might. Hey, did we miss a question from Sam about cholesterol?

Andy Deas: Oh, my God! Oh, geez! I got so excited about your Paleo prescription. Good job, Robb. You're on top of it right now.

Robb Wolf: Hey, man, I work harder for our valuable seven listeners, six to seven depending who is waiting in line to go to the bathroom.

Andy Deas: So a question from Sam, "Robb, you made some statements in your book about the cholesterol levels in Paleo man. The numbers were low. I'm in strict compliance with your guidelines and have been for four months, and my numbers aren't so low. Without going into my numbers, I want to ask how you got the facts on the cholesterol levels of Paleo man, and to ask you why so many of us seem to not be replicating those lipid

numbers. I know enough to not ask you what the numbers mean, so I'll limit the question to what I've asked, which pertains to the contrast between what you wrote our blood should be when following the Paleo Solution and what many of ours' are. Thanks for your time."

Robb Wolf:

So Sam, just you need to read the book a little bit more thoroughly, and if you noticed, it's kind of a slick thing that I did. I actually kind of pat myself on the back with this, which is that I took the numbers that are -- like Loren Cordain threw out there which is kind of in harmony with American Heart Association numbers. These things are all blood lipid levels that we see in free living primates, in babies and in various hunter-gatherer populations, relatively low total cholesterol, low LDL cholesterol, that sort of jazz.

What I know for a fact though is that higher cholesterol levels than that, than these generally kind of low levels, are fine. What we really need to focus on though are different inflammatory markers like C-reactive protein, apolipoprotein A, A1c, so making sure that we're not getting advanced glycation endproducts accumulating in our vascular bed and stuff like that.

So what I did, if you noticed, is that I make a general recommendation for low cholesterol levels upfront, but then I provide the caveat later. If your blood lipid numbers look like this, this, and this, just make sure the LDL particle sizes are large and puffy that your C-reactive protein is low, that your A1c's are below one -- or below 5, C-reactive protein below 1, and then everything is fine. And the funny thing with this is that -- even like the cardiothoracic surgeon at Enloe Hospital that read my book, he checked this stuff out. And he read it and he's like, "Okay. Cool. This all make sense."

And so what it does is it pacifies the people who are very interested in the low blood lipid levels, which may be fine and may not really be all that important, we're still more concerned about inflammatory markers. But then on the back end of this, what I accounted for, was that most people are in fact not going to reach those numbers, but so long as C-reactive protein is low, A1c is good, all that sort of jive; vitamin D levels are good; our gut is healthy; then it just doesn't matter.

So that's what the story is with that whole thing, and I was really trying to figure out how to have a foot in both camps because it is reasonable that you could eat a Paleo diet and have relatively low blood lipid levels depending on what your genetic predispositions are. That will work out totally fine, and I in fact tend to be on that side of things. Whereas I know

that there are other people who eat -- will eat exactly the same type of diet that I do, same protein, carbohydrate, fat, the same breakdown in saturated versus monounsaturated versus polys, and they will have very different blood lipid levels than what I do.

The commonality that we will have is a good-looking LDL particles, low inflammatory blood markers, and those are the important things. So I was trying to figure out how do I make in general the kind of lipid hypothesis people happy so that they get some buy-in on this thing, but then how do I set up a real-world scenario such that if you don't fit into that lipid hypothesis template, that you still are okay? And that's the way that I set that whole thing up. And I'll give myself some credit. It's been -- I've received no backlash from people about that.

If somebody is kind of lipid-hypothesis oriented, then I can sit down and talk to them about where this thing is taking blood lipid levels, and they're cool. If somebody is more in like Mikey's Camp of "Don't even worry about what the total cholesterol is so long as LDL particles look like this and C-reactive protein looks like that," then I can have that conversation with those folks. So in that way I was able to throw a lasso around everybody, and the reality is that it's all true.

So it's not being slick with the data. It's actually expanding on the data and giving a more comprehensive treatment of the whole thing. So I'm stoked actually with what that information conveys and a good question too. But get back in and, Sam, give that chapter a reading. See how I walk things through. Donnie "DOA" Donatello is a good hypothetical client in there where we see how his lipids change, but they change more in the inflammatory marker side and the triglyceride side than total cholesterol side.

Andy Deas: Excellent. Good work, Robb. I almost missed that one. Whew.

Robb Wolf: And it's a good question too.

Andy Deas: I just got a question from my friend, Scott, "Robb/Andy, a better alternative for those that want some supplementation." So he provided us a link to a hemp seed protein. He's basically wondering our thoughts on hemp seed versus whey for additional protein."

Robb Wolf: It's not going to have potentially some of the growth stimulating effects that we're going to get out of whey protein. I still kind of fall by my thing though that any type of powdered protein, why are you taking it? If you are still overweight, if you still have some metabolic problems, if you're

not as lean as you want to be, you have no business taking any type of liquid food -- period. And if the excuse is that you don't have time, that's bollocks. You need to cook. You need to make time for feeding yourself. So before we start getting in and really comparing these two things, then I would ask why is it that you were taking it, and who is it for?

Andy Deas: Well --

Robb Wolf: And then if we're -- go ahead. Yeah.

Andy Deas: In Scott's defense, he's 6'7", 205 pounds.

Robb Wolf: Okay. So -- and I was just going to get into that. If you are the person who needs to take some supplemental protein because you're skinny as a bean pole, then you're better off probably going with the whey protein because we get more of a growth stimulation out of that than what we do out of the hemp protein. So if the premium is really being thrown on getting some muscle mass gain out of the whole mix, then I would probably still opt towards like a two to three month block of time using some whey protein in the post workout period with some carbohydrate to drive recovery and drive some protein synthesis to say nothing and just calorie volume.

Andy Deas: Hence, Scott, you just need to eat more.

Robb Wolf: There you have it, yeah, yeah. And just -- I'm just not a fan of liquid food in general. Eat some real food and you get better results. And John Berardi, who I really dig a lot of his stuff, if you go dig back around in his old tea nation material, even though he is selling a lot of supplements in there, and he's recommending the GROW or whatever that is that those guys have; he also had a number of posts where he was pretty emphatic that the bulk of your calories had to come from real food to get the optimum results particularly with body composition. You can't just do shakes and get yourself to elite body composition unless you've got elite levels of pharmaceuticals going through your body. In which case, it doesn't really matter what you eat.

Andy Deas: Simple.

Robb Wolf: But if you're going to this stuff naturally and kind of ride that pony to the best you can, then the real food is where it's at. And again, I wish it wasn't the case because I would love -- love to throw some sort of whey protein deal on my website and make some money off of it. But I just -- ethically I don't feel real comfortable with it for me because I think that

there are sufficient downsides with it ,and people are sufficiently lazy that I'm not going to facilitate them being lazy. I'm going to try to get them to eat real food. At the outside, I'll try to get them to buy some Paleo brands meals and some jerky and call it good.

Andy Deas: Yup. I just got a question from --

Robb Wolf: Is this Amy? We're on Amy?

Andy Deas: Yeah, Future Amy, like this weird déjà vu. Sorry, Robb.

Robb Wolf: I think we have that question from Future Amy or wait -- no, maybe -- yeah, it is a déjà vu moment.

Andy Deas: Okay. You're right, yeah, but this isn't the exact same question. The whole day is a mess. "Hi, Robb. Loved your book, enjoyed your podcasts. We recently started the Paleo diet and aside from my debilitating Nutella withdrawal, it's been a pretty easy transition. There's been some debate in the house about what constitutes 'lean meat,' specifically grass-fed beef. I've read in other Paleo guides that meat should be trimmed of all visible fat. Do you stick to this rule? I was wondering if there's a particular cut of beef that's better than others. And for ground beef, what do you recommend for the lean to fat ratio and why? Thanks so much for your help. Looking forward to hearing from you."

Robb Wolf: Oh, man.

Andy Deas: Yeah.

Robb Wolf: You know If somebody is really needing to lean out, then I would probably steer them towards more like the 90% lean. If it's grass-fed meat, I don't really care if truth be told. If it's conventional meat then to keep the omega-6 content low and even the saturated fat content low to some degree because the palmitic acid actually has some irritating effects in the adipose tissue that makes this a little more insulin resistant.

But at the end of the day, I wouldn't freak out too much about that. But if you want to get leaner cuts like a London Broil and stuff like that, interestingly, it's usually the less expansive cuts like -- pork loin and London Broil are typically leaner and tend to be a little cheaper, and then it's stuff like rib eye and stuff like that, more marbled, tends to be a little more expensive. So you could steer the boat that way.

People have crawled all up Art DeVany's ass about him recommending a relatively low fat intake, but he had a really, I think, a pretty solid point which was -- beyond the fact that our conventionally raised meat has much higher fat content than the ancestral meat levels had the amounts and types of fat, he just makes the point that we're way more sedentary than what we were in the past. And that sedentism doesn't really necessitate all that large of a caloric flux.

And so you don't need massive amounts of fat. Like people are spooning down extra butter and coconut oil and all that, and I think that that's great up to the point that you need it for athletic activity and like you're already lean and you're already a pretty hard charging athlete or just generally pretty active. But if you're not that active, then you don't need that much calories. I mean that's just kind of the bottom line.

There are a lot of people running around doing the Paleo shtick, that their body composition is not as good as it can be, and that means their health is not as good as it can be. You still have some inflammation that's an outgrowth of too much body fat. That's where Art's recommendation all along that you get lean and all that sort of jive and generally eat a lower fat intake. That makes good sense.

I've been more on the higher fat side of this before, but as time has gone -- the interesting thing when I was on that higher fat side of stuff, I was doing capoeira five to six days a week, jiu-jitsu maybe one or two days a week, and then doing some CrossFit type stuff five to six days a week. And so I needed 4,500 calories a day. I just sit on my fanny and type now and work on the internet and work on my blog and stuff. And so my activity level is a fraction of that. It's less than half what it used to be.

And it took me just really changing my eating habits of just not ladling extra fat into my meals. I cook the meat that I have or I eat the chicken that I have and I eat it to satiety. I eat a lot of vegetable matter, and then I'm pretty much done. And lo and behold, I leaned out, and my performance is still pretty good. It's not as good as what it used to be because I'm just not as active as what I was. So I think that that's the piece that folks are missing in this whole equation.

Andy Deas:

Yeah. I like that question. A question from Bennett, "Hey, Mr. Wolf, I just finished reading your book two weeks ago. However, I've been doing the Paleo lifestyle since January 2nd. It's amazing. I'm already feeling and seeing results. I have a question though. What's your take on 'cheat days' or 'cheat meals'? I've heard several different things. Also, I'm wondering

if they can be applied to the Paleo lifestyle if I kept in moderation (once a month) or would it ruin the whole experience."

Robb Wolf:

Oh, gosh! Whenever people start talking about this cheat meal deal, it just kind of makes me want to pull my hair out. When you go out to eat, and you see something that you would want to have, have it. My main recommendation though is that you stay gluten-free. If you want to shit the bed quickly, you start eating a bunch of gluten containing foods. And we have so many issues with that -- the gut irritation, the dysbiosis. Gluten causes the irritation in the gut lining. It changes the bacterial colonization in the gut, not Casomorphin in gluten, the opiate type proteins in gluten containing grains make you crave them.

So the thing is if you're smart about what you do, then it makes things a lot easier. You have some dark chocolate. If you're going to have some booze, have some clear booze or maybe some red wine instead of beer. And within all this stuff, I really like to just take it in the context of you're just eating, and you saw something that you wanted to have, and you have it. When Nicki and I are out and we see a place that has like a really good crême brûlée, which is basically like sugar, cream, and they do kind of a caramelized sugar deal on top, we'll have a good crême brûlée. And I have one -- maybe once every two months because that's about how often we find some place that does one really good, and I have it, and that's it.

I think the best representation or best memory of this stuff that I have is some of the old CrossFit journal things where these guys would talk about planning their cheat meals, and it sounded a lot like a heroin addict, tying off and getting ready to shoot up. And the funny thing is that nobody that I see that really focuses a ton on the cheat days really has good long lasting success with this stuff. This is more of a mainly moderation over the long haul.

Some people I know -- like Tim Ferriss has described like some pretty epic cheat days on the weekends and stuff like that, and he seems to pull it off. He's a pretty disciplined dude too. And so I think he's able to have very erratic punctuations and behavior, and then kind of pull himself back into line and be disciplined with what he's doing. Most people are not. And so if you want to stay with things over the long haul, then I would generally be better as opposed to worse. And if you go off the rails, just be intelligent about how you do it.

Instead of big gluten containing binge, I'd maybe go with some ice cream or dark chocolate and Mexican food with corn tortillas. And the downside

to that is going to be significantly less. So I wouldn't plan it. I would just let it roll out when it rolls out, and I would be smart about how you do it. And those have been the things that I've seen people be very, very successful with over the long haul, and that's how I've lived for 12 years doing this and I feel like I'm very successful with it.

Andy Deas: Plus you're getting taller by the year.

Robb Wolf: I am, but I'm not telling anybody.

Andy Deas: A question from Jeremy, "Robb, I love the show and the book thanks for making the world a healthier place. I recently read a blog from a doctor on vitamin D and strength. The doctor says that vitamin D may help with overall strength in athletes, and 40 percent of America is vitamin D deficient. I was under the impression that vitamin D was a fat-soluble vitamin that helps with calcium absorption and can also be produced naturally by sun exposure. Do you know of any studies or evidence that vitamin D helps with our muscle strength? Thoughts and theories are appreciated. I just don't like drinking the juice until I read the ingredients. The kindest regards, Jeremy Jordan."

Robb Wolf: Oh, gosh! One of the best things, if you do a little bit of research and I forget the exact terminology with this, but basically a strength athletes -- athletes in general but you can consolidate 90% or 95% of the strength adaptations that an individual has during the highest photoperiod of the year. So like during the summer essentially, you get much better strength adaptations. And there's a wacky interplay of all the secosteroids that are related to vitamin D and testosterone production, dopamine production. It's not a singular factorial deal. And this is where I do think that it's very good for people to take vitamin D supplementation, but I really think that the singular macromolecule of vitamin D -- there's a bunch of other cofactors that are very similar to it and are produced in conjunction with it when we are exposed to sun that are missing.

And so at some point I think it would be interesting to try to find some sort of a broad spectrum secosteroid vitamin D supplement, that the long and short is yeah, it's legit. It's totally legit. But I think that most of this stuff may be related to peripheral actions not specifically to vitamin D itself and so our related cofactors. Vitamin D is obviously important, but I think that what we're seeing here is the production of a bunch of other cofactors at the same time with vitamin D.

Andy Deas: There you have it, Robb. We survived episode 67.

Robb Wolf: Mother of God!

Andy Deas: Barely, with a commercial break provided by Robb Wolf and his cooking chicken.

Robb Wolf: A quick save the chicken commercial break.

Andy Deas: And when this posts, Robb, episode 68, we'll have the Kraken Matt Lalonde on.

Robb Wolf: Sweet. Awesome.

Andy Deas: So thank you for your time, and we'll talk to you next week.

Robb Wolf: Thanks, Andy. Talk to you soon.

Andy Deas: See you, Robb.

Robb Wolf: Bye.