The Paleo Solution
Episode 31

Andy Deas: Robb Wolf, Andy Deas back with Episode 31, Paleolithic Solution. What's going on today?

Robb Wolf: Dude, survived Belize and back at it.

Andy Deas: So I just want to comment, you know, Robb survives Belize. The first he says when he walks into the gym, because I'm growing a beard, he looks at me and just says, "You look like a Wookiee, Andy," and walks away.

Robb Wolf: Well, that would be mildly funny, but then Andy replied, "Ooohhh!" So --

Andy Deas: Wow! I don't even know where to go from there. So let's get ready to go to the questions today, Robb.

Robb Wolf: I don't know. All six listeners just turned off the podcast so --

Andy Deas: Oh, it's a good thing they don't pay you for this, Robb.

Robb Wolf: Dude, anybody who would pay for this need their head checked. So --

Andy Deas: All right. So first off, we got a question from Brendan today. "Robb, first of all, love the podcast. I can't wait to read the book. I'll try to make this short.

My mother-in-law is a biochemist and for the last six months she has been trying to get me and my wife, her daughter, on board with resistant starch. I haven't gotten into it mostly because it seems like all the sources are legumes and starch. I have to admit I don't really understand it. I listen to a lot of the sciency stuff from her and from you; and while I have a general understanding at the moment, it's hard to put the whole picture together for myself, hence why I try to keep it simple like Pollan says and mixing in bits of performance optimizing strategies where it's applicable. It seems like this could be the next big health phenomena so I was curious to know your take on it."

Robb Wolf: You know, the whole resistant starch thing is a little bit funny in that so you have two different -- actually, you have a couple of different forms of starch. Starch, at its basic level, are glucose molecules strung together. So glucose is a type of sugar and these things get strung together in what's

called a polymer, and it's the way that like carpets go together and most biological -- lots of structures are made of polymers which are just strings of little individual molecules linked together.

And then depending on how this molecule goes together, it can either be one long straight piece or it can be multiple branches; and depending on how branched that piece of starch is will increase or decrease the amount of enzymatic activity that can work on the starch. So if a starch -- and you have pectin and amylopectin, and I always get these guys reversed. I think the amylopectin is the less branched version but I probably have that backward. It's like it's one of those things that I just have a complete mental block. I could read it in a book, look up, and then get it wrong again.

But basically, a variety that imagine like either a branch of a tree would represent one long string of a starch molecule, just glucose molecules strung together; or imagine a very highly branched tree where you get a base kind of trunk and then lots and lots and lots of branching, and that would be I think the amylopectin form. Anyway, we've got a branched and non-branched form.

The way that enzymes can break starches down, they can either attack them kind of Pac-Man style from the ends of the branches, or some of the amylase can actually cut the starch string midshaft, so partway down the length of it. So if you can imagine, if you have something that is just very, very, very long, let's say we had a million glucose molecules strung together, if you just had one million molecule long polymer, then that thing would be really, really slow to break down because even if you cut it in the middle and even if you're attacking it from the ends, there's just relatively not that much surface area on it; whereas we could construct a branched form of glycogen or of the starch molecule that has loads and loads of literally thousands of branches.

And then in that situation, it's many orders of magnitude, easier to break this thing down. And the resistant starches tend to be less branched types of starch and so they tend to enter the system a little bit more slowly, which could be good to some degree for kind of glucose homeostasis, some blood sugar control and whatnot, but it's again like this is looking at a very narrow window of the whole picture.

His mother-in-law who is a biochemist, she is not looking at any of the autoimmune considerations of these foods, which legumes have a just sky high autoimmune potential, particularly with rheumatoid arthritis and lupus. They're very, very cross reactivity with those particular types of

autoimmunity. So we're not just dealing with the starch issue and the associated insulin response but also the autoimmune response.

So on the one hand, does resistant starch control blood glucose levels a little bit better than like a highly branched form? Yeah, to some degree it does, but it still is kind of begging the question, how much of that starch do you really want to run on? If she is a biochemist, she should understand some things like advanced glycation end products with just sugar sticking to the body's proteins and whatnot and you start getting a little bit of a picture of that and it really begs the question, how much starch do you want to base your whole fueling on? And really for me, it becomes a thing of fuel your activity needs.

So if you have high intensity exercise needs that are fueled by glycogen, then for sure, throw some starch in, throw it in post workout. That's great. Use yams and sweet potatoes. That's a smart thing to do. But I think she is looking at a very narrow picture of this whole story.

Andy Deas: Well said, Robb, in only 5 minutes. That was a long answer to a short question. But you gave it a fair shot and I appreciate it.

Robb Wolf: Gave it the old college go, yes.

Andy Deas: That's right. All right, next we got a question from Steven. He says, "I've heard that coffee produces an insulin response that is similar to high-glycemic carbs. So, I was wondering: 1) Is this accurate and 2) Would this make coffee a decent post-workout fluid to, say, mix with some protein?"

Robb Wolf: On the first question, is it accurate that it raises -- oh, shoot, we just have a bunch of stuff going on here. Basically, the thing is that coffee, caffeine, most stimulants have kind of an adrenocortical response. So they're releasing adrenaline, cortisol, which those things raise blood glucose levels, which is really the issue. That's the big deal. And then we do get some insulin released in response to that to control blood glucose levels, but this is not a smart post-workout recovery strategy at all, absolutely not.

So on the one hand, caffeine does not directly release insulin. It stimulates the release of glucose via cortisol and adrenaline, but we get an insulin release in response to the increased blood glucose levels, but it's absolutely not a good means for replenishing muscle glycogen and/or using it as a post-workout recovery in that regard. Usually, people are looking at strategies for mitigating or decreasing post-workout cortisol so I would look to anything besides this.

Andy Deas: Now, what if I were to make a post-workout shake, Robb, that was coconut milk, chocolate protein powder and a little espresso just for flavor? Would that be an issue for you?

Robb Wolf: That would be delicious so -- and really, from the cortisol issue, you would have to play this like person by person, but I wouldn't really see that amount of caffeine really being an issue. Particularly if you're generally kind of tackling a low-carb post-workout approach, I wouldn't really see a problem with that.

Andy Deas: Cool. All right. That's a good post-WOD shake, Robb.

Robb Wolf: Indeed it is. That's a good shake for anytime, Andy.

Andy Deas: I feel like we're on Precision Nutrition. That's an anytime shake. You can have that anytime. Sorry.

Robb Wolf: We'll be cracking open the Velocity Diet 6.0. Just copyright infringement on Shugart or whoever cracked that open and we're like, "All shakes all the time. Oh, and just follow it up with some hookers and cocaine and you'll be great." So --

Andy Deas: That's what happens when I'm actually drinking Americano during the show, Robb. That's what happens.

Robb Wolf: Perfect!

Andy Deas: All right. Next we have a lengthy question from Audrey so I'll try to jump around a little bit, and hopefully Robb, you've already assimilated all these details. You're in the know. But for the listeners, there'll be a little more detail that you guys can read if you want in the show notes.

So, "Hi Robb and Andy. As many have said before me, thanks for the amazing podcasts. I can't wait for the book and hope that you will be in San Diego signing autographs." I just want to say, Robb, the day that I see you signing autographs, I'm going to crack up.

Robb Wolf: It's happened a few times and no one is more surprised or embarrassed than I am. Trust me. So --

Andy Deas: But anyway, moving on. "I have a couple of questions regarding losing weight on the Paleo Diet when living with hypothyroidism. I am a 33-year-old female and about 80 pounds overweight. I recently embraced

the Paleo diet and lifestyle, eliminating all processed foods and as many chemicals as possible. Also just diagnosed with hypothyroidism and been finding it challenging to shed my excess weight. I never had trouble losing weight in the past, whether it be Weight Watchers, Atkins, etc. I was always able to maintain a 2 to 2.5 a week average.

This is the first time in my life that the math is not adding up. I've been following a strict Paleo for 17 weeks and CrossFitting five days a week. Performance gains are significant, so the diet is definitely helping there. I feel like I am setting new PRs every week. Closely monitoring calorie input and output using software, and have a pretty thorough understanding of my macronutrient breakdown. I average about 1500 calories a day, following strict Paleo, no dairy, grains, alcohol, caffeine, or processed food. Protein sources mostly grass-fed beef and lean chicken; fat from meats, nuts and oils; and carbs from more fruit than veggies to be honest.

Burning about 2500 calories every day. At a 1000 calorie deficit, I should be losing 2 pounds a week, but this is not the case. It has been 17 weeks and I have lost about 17 pounds and 10 inches, 5 of those 17 coming off in the last 12 weeks, so the rate of loss is getting worse. I realize that this is moving in the right direction, but I'm frustrated with how slowly things are moving compared to my past results and would like to make sure that I'm doing all that I should be.

My questions are as follows: Is there anything I need to consider or alter on the Paleo diet because of my hypothyroidism? How is my macronutrient composition? Am I eating too much fat to lose weight?"

Robb Wolf: So is there anything she should tweak with the Paleo diet? We've definitely seen some indications that basic out-of-the-box Paleo diet may be iodine deficient, so definitely supplementing with like a standardized 150 micrograms of iodine would be a good place to start. It would be interesting to know if the docs have figured out what her hypothyroid is in response to. So like, does she have low thyroid stimulating hormone? Does she have low circulating iodine? Does she have inadequate conversion of T4 to T3? Like there's a bunch of different stuff that should be looked into. You don't just throw your hands up and say, "Oh, my thyroid is low." Like there's a lot more to it and it can give you a lot more indications of how to follow up on all that.

The 1000 calorie a day deficit may actually be a little bit aggressive, maybe not. It might be okay. I don't know if she's worked out in the past or worked out to this degree. CrossFit, if nothing else, it's very all-

encompassing. People start putting on muscle in their back, in their traps, like all over their body. And so if you're simply going by weight loss, I'm not super surprised that the scale maybe isn't following the same progression that you've seen in the past 'cause you may in fact be gaining some muscle mass through the whole thing. That may or may not be part of the issue. If you're legitimately hypothyroid, whereas in the past you were not, then the thermodynamics to your body have changed, like the way that your body handles calories has changed and so you may find that your body is more efficient with calories and so you're not getting as much fat loss.

So some things to check out would be to figure out why you have hypothyroidism. That's one, you know, thyroid stimulating hormone, conversion, iodine deficiency. Then from there, I would start looking at more of a body composition deal, so like how our clothes' fitting. And if you are making performance gains in the gym and you're still having any type of weight loss that is good enough. You can't get too greedy with this stuff. Especially if you've got a little bit of a health thing going on with the hypothyroidism, I would just kind of cruise with that, try to figure out what's going on with the hypothyroidism and also understand that maybe some of your perceived lack of weight loss maybe in fact the gain of muscle mass.

So those are the biggies that I could -- oh, she does have a little bit down here if we cruise down. Thyroid stimulators were over 100. I think now that I saw this like further down, I forgot that we had the thyroid TSH levels and all that sort of stuff, I think probably what she has going on is just simply that she is gaining some muscle mass through the whole process. I would be willing to bet that that's the main issue, but I would still do some investigating to make sure what the cause of the TSH looks within pretty normal levels, but the T4 is low, which would be kind of pointing me to iodine deficiency.

Andy Deas: Yeah. And not specifically related to this, but I feel like in general, I get really nervous about folks, and I'm just staying away from myself, but trying to follow these very mathematical calculations to estimate how fast you should be losing weight.

Robb Wolf: Mm-hmm.

Andy Deas: 'Cause -- and I think we talked about this in the Whole9. Like all these things I think are just starting points. Everyone's hormonal factors are different. And I think you just set yourself up for perceived failure if

you're like, "Oh, I think I should be losing 2.3 pounds a week and I'm losing 1.6 and that's not good enough."

Robb Wolf: Yeah, yeah. And especially like the things that we always like to hang our hat on is how do you look, how do you feel, how do you perform? And you know, it sounds like she is performing and feeling better, and then I would assume even with any amount of weight loss that you're going to be looking better too. And that's pretty darn good. That's quite a bit to hang your hat on there.

So again, like the whole picture, as far as I can see it right now, my gut sense is that she's probably just gaining a good amount of muscle mass out of the whole thing, and she might be a little bit iodine deficient.

Andy Deas: Yup. I think the other thing with folks that we see sometimes as like 80 pounds overweight, etc., some folks, as they get fitter, their weight loss accelerates later on once they can do more work.

Robb Wolf: Absolutely, yeah.

Andy Deas: Which again I think some folks get a little frustrated in the beginning; and then as they get fitter, you see some acceleration and then everyone's happy.

Robb Wolf: Yeah. And at that level of overweight, you usually can see some estrogen metabolism issues because of aromatizing testosterone and estrogen, basically a conversion. Adipose tissue, fat tissue has an enzyme that converts testosterone into estrogen. So as things get further out of whack, then there's just more and more effort that's necessary to bring things back into a normal alignment.

Andy Deas: Yup. All right, good. Good question. Next is question from Karen. "Hi, Robb. Learning lots, thanks for the podcasts. I have a question about Omega 3's and 6's. From what I read, they are both absorbed by the same receptor, and Omega 6 outcompetes the Omega 3's. Is this true? And if so, does it make sense to try to consume your Omega 3's (fish oil) at a time when you are not eating Omega 6's? I'm not trying to making eating too much of a science experiment, but I do want to make the most of the choices that I make."

Robb Wolf: Egads!

Andy Deas: Let me just note, by asking this question, you have turned eating into a science experiment.

Robb Wolf: Absolutely.

Andy Deas: But luckily, she came to the right place.

Robb Wolf: You know, I'm not familiar. I did a little bit of digging around. I'm not familiar with a preference for Omega-6's over Omega-3's and the lipid transporters, like that's just not on my radar at all. When we bring fat into our system, no real digestion occurs in the stomach. The food bolus is released in the duodenum and the small intestine. The whole mass gets exposed to bile salts and then the bile salts emulsify our fats, which are dietary triglycerides. And then once they're emulsified, which is basically kind of like soap absorbing some oil and making it soluble in water, then pancreatic lipase goes to work on the fats.

And the fats or the triglycerides are broken into three fatty acids and then one glycerol molecule, and that stuff is then transported through the gut lining, and it gets reattached on the other side of the gut lining in the lymphatic system, and it's carried via the lymphatic system in this big kind of like fat golf ball thing, and big being really, you know, quite relative it's actually a little bit bigger than a cell, but relatively large, called a chylomicron and the chylomicron then makes its way to the liver, where the liver then breaks the whole thing down and all these fats get broken apart and sliced and diced and redistributed.

So I don't see anywhere in there where there would be even a potential for some preference of Omega-3/Omega-6 uptake. If there's some sort of preference, then there may be a cellular preference within the body, but that's not going to be affected at all with regards to what your dietary intake is.

And then if we look at our basic ancestral diet, the Omega-3/Omega-6's tend to occur at like a one-to-one or maybe a one-to-two ratio, and so I just am not intuiting any type -- they've always occurred in a mixed bag. They've always -- meats, fish, all that sort of stuff, they always have a balance of Omega-3 and Omega-6's, primarily the longer chain, like EPA-DHA, and then also arachidonic acid, and that's kind of the whole finished form which we actually need in our body. So it would be interesting for Karen to ping me whatever reference she has with regards to this receptor difference 'cause it's definitely not on my radar at all.

Andy Deas: All right. Moving on, two questions about nuts. So Question 1 from Evan C. "Hey Robb, I hear you and Andy talk about removing nuts from your

diet in favor of other coconut milk, oils, etc. sources. What's the reasoning? And can I get a link?"

Robb Wolf: The reasoning is that nuts are real heavy in Omega-6's. It is one issue. So we're trying to maintain that Omega-3/Omega-6 balance. The other issue and it's kind of a heartbreaker, but the nuts also represent a pretty high antinutrient kind of lectin load. And so if you think about their whole life process, they're not really that dissimilar from grain or legume. And Cordain and some other people were kind of theorizing, "Hey, these things may be problematic with regards to gut health and with regards to the Omega-6 intake." So we just started doing some experimentation on the removal of the nuts and seeds; and lo and behold, people started feeling better.

And I'd have to give some thought to like a link on that stuff. I mean it's kind of big, far-reaching material. Do some Googling. Track this stuff down yourself. Look at nuts and seed and antinutrients, nuts and seeds lectins, nuts and seeds Omega-3/Omega-6 balance, and so some investigating on your own.

Andy Deas: Yup. And Question 5b from Jacob K. "You guys are amazing. I really feel like I owe you a kidney or something." Nice.

"Since listening to your podcast and going Paleo, I've had an 80% reduction in muscle fatigue problems that I've had for years. Before going Paleo I had constant bouts of muscle pain, weakness, tendonitis and many problems. I had blood work done and went to many doctors, of course, with no answers. Since going Paleo I have had a miraculous reduction in all of my problems, and my testosterone has shot up dramatically.

My question for you guys concerns nuts. I was wondering what a better source of fats than nuts exists out there, mainly talking about the high concentration of Omega-6 fatty acids. I hear you guys talking about coconut stuff all the time. Are you eating the oils for calories? I am already using olive oil for salads and cooking. I find nuts to be a delightful and cheap snack. I think the Omega-6's that they contain are possibly causing me some small inflammation problems. What are your thoughts?"

Robb Wolf: You know, there is a difference at some, you know, like pecans, walnuts, macadamias I think have a better Omega-3 than Omega-6 ratio but it is the short-chain alphalinoleic acid so there's some conversion stuff that you want to consider about that. I throw down a handful of like almonds

here and there. It's just I used to make like nutty hot cereal and I would eat like a pound of almonds a day. And so I think the poison is kind of in the dose. I just dramatically cut my intake back.

Other good oil sources -- I'm actually, and some people are probably going to be grossed out by this, but we're getting a grass-fed cow and I've asked for all of the grass-fed fat from the other cows that are being slaughtered and the folks were totally game for this. They're like, "Usually, we don't really have all that much to do with it." So I'm going to end up with like bags and bags of fat. It's going to remind me of like Fight Club when they break into the liposuction deal.

But I'm going to render that stuff down at low temperature rendering, and then use that for like salad fixings and stuff like that 'cause it's loaded with conjugated linoleic acid, good Omega-3/Omega-6 ratio, tons and tons of fat-associated carotenoids from the grass feeding. So that's something I'm going to start poking for is some grass-fed tallow, grass-fed lard. That's some stuff I'm going to personally poke around with. But I mean outside of that, the coconut is pretty good to go.

And just as an aside, I've noticed for myself, and granted my activity level is not as much as what it was when I was doing capoeira and doing jujitsu and doing some CrossFit and everything, like I'm doing pretty much like a Wendler plus CrossFit Football kind of gig with gymnastics thrown in, a little bit of kickboxing here and there, but really my activity level is not that high; and lo and behold, what I find is that I just don't really need to add much fat to my meals at all, and I was very much in the habit of doing that for a long, long time just because I'm always trying to get big and eating for this kind of perceived performance deal. And what I've found is that I actually run pretty lean, my body composition is better, and I just don't require as much food.

So I think there's a lot of people that probably could get by on significantly less food and not really need all that much additional fat. And unless you're eating pretty lean fish or turkey breast or chicken breast, like if you're eating most cuts of like grass-fed meat, particularly ground meat, it's got a fair amount of fat in it. It's 15% fat by like weight, which ends up making it 55% or 60% fat by caloric content, which is plenty generally, unless you're trying to pull off some sort of a specific like ketogenic diet kind if protocol in which you would need to add some additional fat; but I think for a lot of people, you may be able to get by with much less fat.

Pastured butter seems like a pretty good option if you don't have any autoimmune issues. I'd like to track down -- what was it? A C1 or a C2 cattle? I forgot what it was. Mat Lalonde was talking about it but there's one type of cattle that like the Masai used which the type of casein that is produced is much less problematic than the type of cattle that we have, which is like the C1 or something like that. So that might be something too to find like a buffalo-derived stuff but --

Andy Deas: I'd like to see you drink the blood from the jugular of a cow.

Robb Wolf: Don't push me, Andy. Don't push me.

Andy Deas: I think that would be well worth a YouTube video. And the next part of Jacob's question, which I'll let you answer for today, Robb, I think this is actually good, is "What would a typical day's food look like for you guys?"

Robb Wolf: Oh, shoot. For me, I've been doing either eggs over medium or like the Trader Joe's. We're waiting for our cow to come in so like we have not had any of our bigger stock of grass-fed meat. So I've been doing a lot of the grass-fed ground beef from Trader Joe's. So like either four eggs over medium kind of steamed or about a half to three-quarters of a pound of Trader Joe's ground beef with like pretty much as much veggies as I can throw into the pot.

And our Farmer's Market has been totally rocking and I've been focusing on different types of squash, so I'll throw a quarter, anywhere from a half a pound to a pound of squash in there which is a big pile of squash, and I will kind of steam all of that. Like I'll throw all of it in a pan, put maybe a half a cup to a cup of water in it and throw some curry powder on top, put a lid on it, and just turn the fire on and come back in 10 minutes and eat it and it's amazing. Like it cooks really well, I don't have to fuss with it, and then that's kind of breakfast.

Lunch might be a similar deal, maybe some chicken. And then dinner, I mean really, really similar gig. Post workout, I've been doing some mangoes or papayas or some squash, like a bunch of like summer squash, like acorn squash stuff that's a little more dense carbohydrate. I've been doing some post-workout carbs on my heavier workout days. And that's usually it. I'm usually two or three meals a day. Some days if I'm real hungry I may get in a snack and I have kind of four meals, but that's a pretty typical day.

Andy Deas: Yeah. We are not very creative, Robb. Let's just say that right now.

Robb Wolf: Not super duper. And you know, I'm definitely not adding as much fat like I used to. I was doing like a whole can of coconut milk with a meal and stuff like that, and I've really actually cut my caloric intake a bunch. I just find I don't need it.

Andy Deas: Don't let anybody call you skinny though, Robb. That's bad news.

Robb Wolf: Only you but that's because you're trying to look like Jim Wendler's beard.

Andy Deas: Cheap shot on the beard, Robb, cheap shot. If I ever was big as Jim Wendler, I'm going to grow a beard bigger than him.

Robb Wolf: That's a good plan. You can get fully ZZ Top with your beard when you're as big as Jim Wendler so --

Andy Deas: Oh, man. All right, moving on.

Robb Wolf: Yup.

Andy Deas: Question from Joey: "Hey Robb, quick question for you. I'm currently 165 to 170 at probably 6% boy fat, with a snatch at 185, clean and jerk around 240, deadlift at 405.

Anyways, I want to get my snatch up to 200 pounds and my clean and jerk up to 275 and would like to pack on some mass to do it while staying lean. I've been following Greg Everett's catalyst programming followed by short 5 to 10 minute CrossFit WODs or met-cons Monday, Wednesday, Friday, and filling in with a few 10 to 20 minute WODs on the other days. I'm planning on keeping with my Paleo diet but adding 1/2 GOMAD. Do you think that is proper programming/diet for gaining some muscle mass and increasing strength, all while staying relatively lean? Any input would be greatly appreciated."

Robb Wolf: I think the whole thing looks pretty solid. One thing that I would tweak is the 10 to 20 minute metabolic efforts. I would drop those altogether and I would have somebody teach you how to do the intro movement of a roundoff in which you basically, you know. It's a hands together cartwheel and then you land on your feet and explode up. I think who's the Renegade Training guy?

Andy Deas: John Davies.

Robb Wolf: John Davies. He has something called snap-downs or donkey kicks, which is basically going from a handstand and then snapping down. It's basically turning into a plyometric movement. But instead of doing a roundoff backhand spring or a roundoff back flip, you can use the round-off entry as basically a plyometric load. And the first time that I clean and jerked 275, it was when I had built up to five sets of 10 on this movement; and I was doing a real similar type of programming to what you're doing here, 165 to 170 pounds bodyweight, but I was doing a ton of plyometric gymnastics movements because of capoeira.

I was working standing back flips, some kind of funky sideways. It's called Au Sem Mao. It's a cartwheel without hands where it's basically an aerial, in gymnastics terms they call it an aerial. So I was working some plyometric stuff to try to make that stuff go. So I would ditch the longer WODs and I would start doing some gymnastics derivative, plyometric work on those other days.

And the rest of your stuff looks good. Greg Everett's programming is genius. That stuff is totally solid. The short little met-cons, that's fine. I don't think that's going to take anything away from what you're doing, but I would definitely learn how to do some gymnastics derivative, plyometric stuff. Poke around the Gymnastics Bodies website from Coach Summer. That dude has like more brain in his pinkie that I will ever hope of having. Like he is a genius on stuff and they have some really, really slick gymnastics progression plyometric work, and I think that that's just a huge leg up that you could add into the whole program.

Andy Deas: Yup.

Robb Wolf: And it's damn fun too.

Andy Deas: You can never do enough gymnastics.

Robb Wolf: Heck no.

Andy Deas: Next we got a question from Mike. "Love the podcasts. Keep it up! I'm almost done with Good Calories, Bad Calories; and I'm toying with the idea of going zero carb for a while. If I remember correctly, Taubes addressed the nutrient issue, but I don't remember him saying anything about bone density issues on an all-meat diet. I know with Paleo we talk about acid/base balance, and plants are where we get the alkalinizing load. Do you have any thoughts on this? Did I miss something? It's a dense read and I zoned out a few times."

Robb Wolf: Seriously, it's a dense read, really, really good. I guess one thing I would ask is like why would you want to do a zero carb intake? I mean if it's just for like, "Okay, I did an all-meat diet" just so that you could say that you did it, then I guess that's kind of one thing. But I would just be curious about what the motivation would be when you could go really low carb by just sticking with like multicolored vegetable matter that has a low glycemic load but you're getting a ton of nutrients, some really good acid/base buffering, a little bit of fiber that doesn't hurt the whole mix. So I would just kind of ask the question why you would want to do it.

If you do an all meat diet then you really need to endeavor to -- you know, stuff like barbecuing isn't a good way to do that because you lose all of the mineral contents of the meat. And when you do cook different types of meat or seafood or whatever it is that you're eating, you need to do it in such a way that you keep all of the mineral content, like the potassium, magnesium, all that sort of stuff 'cause it's very easy to get into a mineral deficiency state based on just simply the cooking methodology. So that's a whole other piece of this to keep in mind.

And I forgot where I was reading it. I just get inundated with material between my email and the blog and then trying to square away all the references for the book, but it was talking about Vilhjalmur Stefansson, the guy that lived with the Inuit and all that sort of stuff, and he was noted as eating a lot of the articular portions of bones like chicken and rib and all that sort of stuff. So they're getting a fair alkalinizing load from the bone matrix that they were eating as part of the meat, and I think that that's kind of a missing piece for both calcium and just general like alkalizing load that comes out of animal products.

So there's a bunch of different stuff you need to consider in that whole thing. So one, make sure why you want to do a zero carb deal; and then two, if you do it do it smart. Make sure you know more soups and stews and all that sort of stuff so you keep all the mineral content. And then don't be afraid to consume a lot of the -- cook down the bones and eat the bones and articular portions of the bones.

Andy Deas: Bones make good meals. That's what I'd say.

Robb Wolf: I don't know if that's going to end up on a T-shirt anytime soon, but --

Andy Deas: Oh, it will, Robb. I'm not even going to go there. The amount of hilarious CrossFit T-shirts that I've seen, I'm convinced we could put anything on a T-shirt at this point.

Robb Wolf: That's true. And there's so much snatch double on top for this stuff that could go with that. Duly noted.

Andy Deas: All right. Moving on, question from John. "Robb/Andy, so here's one maybe for the podcast, building off our brief dialogue (Robb) recently about melanoma.

In her book 'Primal Body, Primal Mind' Nora," I'm not even going to say it five times fast, "states that sunscreen use is actually causing higher cancer rates because it is inhibiting vitamin D production through exposure to the sun. This is an interesting question for someone like me, in my 40s, with a recurrent family history of melanoma, and having a few basal cell carcinomas and mild dysplastic lesions removed over the years.

I would like to think moderate sun exposure (say, tanning, not burning would be good for me, especially if all other lifestyle factors are in order: diet, exercise, rest, lack of exogenous toxicities, no smoking, drinking, etc. Or am I dangerously deluding myself, and I'd be better getting my vitamin D solely through food and supplementation and slather on the SPF50 head to toe every day. Your thoughts? Thanks."

Robb Wolf: Gees, Louise. That's a tough one. You know, I think in most situations, like the recommendation for safe and reasonable sun exposure is exactly that. It's safe and reasonable. When you start getting into really heavy duty family history of some of this stuff, it's really outside my wheelhouse. Like I don't know what the safe recommendation is on this.

Maybe we could tag this one and this could be something that we bounce off of Professor Cordain when we get him on the horn here in a couple of weeks, because I don't know. Definitely, you know, solar radiation, UV radiation can and does potentially cause some DNA damage. The thing is that if that's at a low enough level, which the level of sun exposure recommending it falls within this generally, you have DNA repair enzymes that generally stay ahead of that type of stuff. And then we have a carotenoid-rich diet then we get some natural SPF out of our nutrition.

But when you have somebody who has like a family history and has already some cell lines that have kind of gone south on you, I'm not sure where the cost-benefit lays with that. Definitely maintaining the good vitamin D level period is good, like some supplemental vitamin D is a good idea, but then is it a good idea to just hide out under an SPF50 sunscreen? I'm not sure. My gut sense even on that is to go more with like a clothing-based SPF option like rash guards and compression shirts

for swimming. The sun blocks do not work quite the way that the label claim, you know, states.

And so if you were going to opt on the low to no sun exposure, I would actually go more with like rash guards and stuff like that. Like I did some ramp up of my sun exposure before going to Belize and I actually got a lot of sun in Belize. I never burned. I was pretty close about that. But one day when we were out snorkeling at a reef for about 4 hours, I had about 20-25 minutes of direct sun exposure, and then I put on a rash guard and that's how I rolled the rest of the day. And I think that that's a pretty smart way to go. But we'll see if maybe we can get Professor Cordain's thoughts on that when we get him on the show.

Andy Deas: Cool! It's on the list.

Robb Wolf: Cool!

Andy Deas: Next we got a question from Conrad. "Robb, catching up on the Whole9 podcast right now. Question about the good food-bad food. I live in China and haven't found a good source for fish oil. My brother sent me some in the mail but it's held up in customs right now. Most of the canned mackerel and sardines around here come with at least one of the following ingredients: sugar, salt, vague food additive, soy sauce. Do you think it's worth getting the EPA/DHA into the system despite the Neolithic ingredients? Thanks for the advice."

Robb Wolf: I would just track down like mackerel and sardine that just has salt if you can, salt and/or, you know, just kind of minimum ingredients. Salt is going to be unavoidable but mackerels and sardines are just whopping doses of EPA/DHA. So I would probably roll that. And the funny thing is that stuff ironically is probably caught by our friends, our compadres in Paleo Brands out in Monterey Bay and then shipped to China ironically so.

Andy Deas: It's just the way the world works, Robb.

Robb Wolf: It is.

Andy Deas: Shaking the thing around.

Robb Wolf: Yeah.

Andy Deas: Question 10 from Eric D. "Great podcast! Thanks for answering a prior question too. It was a great help. Plus, the guys at the jits class have

literally called me a caveman from all this Paleo stuff so that is interesting as I'm getting stacked and passed.

But onto the question. You mentioned in the first question that the largest bump in HGH is an hour into sleep and eating before bed will disrupt that process and suppress that boost. Question is how long before bedtime do I need to eat to avoid this? Considering jits is 6 to 8, I am unable to shove my sweet potato and protein down until about 8:30 on average and I'm usually trying to lay down to sleep at 9:30. Anything I can do here or doesn't it matter? Thanks."

Robb Wolf: It's a tough deal. That's part of why I haven't been doing jits in a long time 'cause the only class around here is like 8:30 at night and wraps up at like 10, and it's just too late for me. I think, you know, two things you could play with is kind of go on minimal meal, which would be more protein and fat, and that will tend to suppress growth hormone a little bit less and then you would do like some carbs in the a.m. for glycogen repletion. So you could play with that and see if that all works or this is just one of those situations where the demands of life are going to be a little bit antagonistic to 100% optimum living.

And in the grand scheme of things, it may not be that big of a deal. Like just eating moderate amounts of food like smaller amounts are going to really mitigate this problem, having food ready immediately after your training so that you can eat, like just eat as quickly as you can. Have that food prepped, shower up after rolling, and then get that food down; and that's about the best bet you've got.

Andy Deas: Yup. And Robb Wolf, that's it for Episode 31. How do you feel about that? That is a blistering pace with 41 minutes today.

Robb Wolf: Wow! It started off a little on the long side with the 5 minuter, but we caught up at the end.

Andy Deas: Well, this balances out the hour and 20 minute marathon we did last week.

Robb Wolf: People got their money's worth the last time, or we've heard there's been three suicides due to listening to the episode so --

Andy Deas: No, Robb. It's all goodness. Well, thanks again for your time buddy, and we'll talk you to next week. And that's Episode 31.

Robb Wolf: Thanks, Andy. Take care.

Andy Deas: All right. See you, Robb.

Robb Wolf: Yup.