

The Paleo Solution

Episode 46

Andy Deas: Robb Wolf, Andy Deas back with Episode 46 of The Paleolithic Solution, and you are officially worldwide, right?

Robb Wolf: I guess so. I'm on the road, that's for sure.

Andy Deas: Hey, man. You know, I've looked at some of the sales numbers. You know, it's available publicly and I'd say it looks like you're worldwide; maybe not on top of the world but climbing the ladder.

Robb Wolf: We're doing pretty good. We were I think as high as 34 yesterday. We're 34 again today on Amazon. We were 54 on barnesandnoble.com. So yeah, I mean super stoked; very, very excited. Everybody has been supporting the heck out of the book and telling folks about it and doing all the kind of guerilla marketing things like taking a photo of themselves on Facebook and tagging me and tagging themselves and all that. So it's been super cool; very excited.

Andy Deas: And I saw the Jimmy Moore review which was unbelievably kind I thought.

Robb Wolf: You know, I don't want to sound like too much of a goofball, but I honestly choked up reading that review. Like, I was shocked. I've always loved Jimmy's stuff. He seems like he's a super cool guy and like it was -- I'm just stunned. I felt like that was like a huge outpouring of kindness. And I mean to say nothing else, like he's a really busy dude.

Andy Deas: Yup.

Robb Wolf: Like he is burning podcasts all the time. He's got a ton of stuff going on. That had like I know for myself and maybe he's a much better and much faster typer than I am, but I figured that was probably a three-hour gig, like riding all that up. Like to say nothing and just being kind enough to read the book, and then writing the review that he did, that was probably a two, three, maybe four-hour deal with like formulating your ideas and then spitting it out, and proofreading and all that. So for a busy guy who has a lot of stuff going on and get this ton of traffic, for him to take the time to do that, I just thank you, Jimmy, like that. That was very, very kind; very, very gracious.

Andy Deas: And where are you in the world for the -- dude, no moving things right now, Robb.

Robb Wolf: Sorry, man. Sorry. Sorry, sorry. I had to shift. Sorry. No more movement. I promise.

We're in Arlington, Virginia in a hellish Hilton Garden Inn. The residence inn that we've stayed at before, which is really nice and has some cool laid shops and a Starbucks right next to it, was booked and so this place is literally kind of like two blocks away, and it is a pit and \$45 more expensive so that's sweet. But yeah, Arlington is great. Really cool scene here and the Potomac CrossFit folks are sponsoring a book signing tonight, which this obviously is going to have already happened by the time this podcast goes up. But just very excited. This is Thursday and then Saturday we're doing our gig. Or is today Friday?

Andy Deas: Today is Thursday.

Robb Wolf: Today is Thursday. Okay. Thursday today and then Saturday the gig in New York, and then back home for a spell before we go to Hellerup, Denmark.

Andy Deas: Oh, cool.

Robb Wolf: For the Paleo Solution seminar there. Yeah.

Andy Deas: And everyone listening has seen the new robbwolf.com. Robb, I think it looks amazing although I didn't get to check a whole lot of your headshot. Just so we're clear.

Robb Wolf: I'm still super freaked out by that, but Erwan was insistent that we needed a photo of me; and Amber, who did the website, really seems to like it. They keep thinking that I'm selling real estate, but yeah, I'm a little freaked out by it, but everybody else insisted that it needed to be in there. But we're working on a logo, so if we get a good enough logo, hopefully we can pull my mug off the front page 'cause I'm not real comfortable with it.

Andy Deas: Cool. All right, cool. Are you ready for some questions, Robb? We got 11 today. We're going to try to get through this.

Robb Wolf: Gats! Okay, I will talk fast and try not to be meander too much. But you picked some really meander-worthy questions.

Andy Deas: Well, you know, the book came.

Robb Wolf: So you may have done it to yourself.

Andy Deas: Well, I'm good at driving myself off the cliff to be honest.

Robb Wolf: Perfect!

Andy Deas: All right, first question from Jay. He says he's 48 and a lifelong exercise enthusiast. He has recently been exposed to the benefit of the Paleo diet and to CrossFit. "I will embrace both. I pre-ordered Robb's book. I also play other sports as Robb suggests - football and softball catch with my kids a lot, basketball and snow-skiing. I am 5'9" and 195, and about 16% body fat, all in the midsection.

Question: What type of workout offers the most results for time expended, if results are considered maintaining muscle mass? Note: I assume fat won't be an issue once I go full Paleo. Robb's recent comments about Art DeVany piqued my interest in this.

Final note: I just want to look good and stay fit. I couldn't care less if I get schooled at a CrossFit class by old men and women. ;)"

Robb Wolf: Well, that's definitely where I am so I mean I'd seen both. You know, Art DeVany's old stuff, which is definitely HIT reminiscence. I know Keith over -- God, I'm blanking on Keith's website.

Andy Deas: Theory to Practice, Theory to Practice.

Robb Wolf: Theory to Practice. You know, all of this kind of like reverse pyramid sets. Like Martin Berkhan is really big into that. I think that there's just really good -- if we're looking at this from a purely economic standpoint like minimum investment, maximum return, I think that that stuff is pretty money. I have been talking to Fred Hahn a little bit, and although I'm just honestly like I love you, Fred, but I'm not a fan of the super slow stuff. Like, I think all of this jive can be attacked in a little bit more of an athletic-based approach, but that's just kind of my bias on it and maybe there's a whole other show where we get these guys on and we have like a battle royal and see who doesn't get tossed over the top rope.

But Art DeVany's old deal of the hierarchical sets where he would start with a lightweight and then move it very slowly, which was effectively like a warm-up and he would kind of ramp up until he would start hitting some work sets, and then keep adding weight and decreasing the rep

scheme until he hit what we called the soft failure. I had always derived better results going the opposite direction, like a little bit of a warm-up and then gunning for a pretty heavy work set, peel a little bit of weight off, do another work set or two, and then move on. Art never really liked that approach, but I'm definitely a big fan of it and I think that stuff is just hugely beneficial if you were to do a full body workout like that, say like a squat, a weighted pull-up, and then some sort of a press on day one, be generally active for two, three, four days, and then like a dead lift, another press and then some sort of a horizontal rowing movement on your day two.

Like, you could easily do a two-day-a-week abbreviated program doing some sort of a reverse pyramid set. Maybe put a little bit of a clustered training in there which was basically what Art did with his alactic work where you would get a fairly heavy weight, say like in dead lift, binging. Squatting I think lends itself really well to this type of stuff. But you do a rep, wait about 10 to 15 seconds, do a rep, wait 10 to 15 minutes.

And so you can do a fairly high motor unit; recruitment like at a relatively high percentage of your 1 rep max, but get this stuff done in a very abbreviated period of time. And so instead of weighing 2 or 3 minutes or even 1 minute for rest between sets, your sets are really only about 15, maybe 20 seconds long. And a little inclusion of some work like that I think is amazing.

So I think anything that looks like that kind of HIT-esque reverse pyramid set, like there's no doubt that that is very effective at building some muscle, maintaining some muscle. And then if you were to be active to do a little bit of sprinting and do some other stuff, I think that that would start rounding out your total athleticism.

And, you know, that's what I was doing. I was very much geeked out on that early Art DeVany stuff before I started getting into CrossFit, and I had some pretty good numbers. I had some pretty good strength numbers. I had for that time like some good performance doing capoeira, doing some jujitsu and everything. I think that doing some CrossFit type stuff definitely introduced more metabolic type intensity and kind of plugged some holes in my game at least transiently. But for a minimum investment, maximum return, I think that Art DeVany's hierarchical training, reverse pyramid sets. Martin Berkhan has written a bunch of stuff on it. I know Keith geeks out on this stuff a lot. So I would direct folks to all of that jive and do some playing around with it.

Andy Deas:

Yeah, cool. All right. Next, we got a question from Gary. "Hey, Robb and Andy. First of all, I just wanted to say that it was awesome having my question on the ELISA method of food allergy testing answered a few podcasts back. I am trying to get my gut health back in order: eating strictly low carb Paleo, avoiding foods I am sensitive to, and rotating the foods I do eat.

On to my question. I have heard some hype about homeostatic soil organism probiotics. I have not found any real good sources of information pro or con on these soil-based probiotics, like Primal Defense. From a Paleo perspective it appears to make sense that soil-derived probiotics would have been a natural part of ancestral diets because of the amount of dirt ingested when eating raw vegetables. However, there are a couple of pages on the interwebs that state HSOs are harmful. Any light you can shed on this topic would be greatly appreciated."

Robb Wolf:

You know, the HSOs are interesting. The deal with the HSOs is this is kind of an attempt to some degree to have like a market cornered or like a patentable formula on some sort of like a magical probiotic or symbiotic gut bacteria.

I think that this whole area of probiotics or an understanding of the importance of bacterial load in the gut is going to become a huge area of research and health understanding. Like, I really suspect it. If you take a little bit of an evolutionary perspective, this kind of Paleo diet perspective, take whatever goods we can get out of modern medicine, and then I think if we spackle on some additional understanding of the importance of the symbiotic gut flora, I think this is going to be like the big, big area that people will start looking in the next 10 years. Like this stuff is huge. And it's just a nascent field, the whole psychoneuroimmunology that affected how our gut health and the interaction of gut bacteria and pathogens, how it can affect our cognition and our health is going to be huge. So that's the whole deal.

You know, the guy that wrote this, I forgot his name. It was like "Restoring Your Digestive Health." He was super sick and then got exposed to these homeostatic soil organisms and had a pretty remarkable transformation. The book is mainly kind of Paleo in orientation. Andy has some questions later on here that actually ties into this pretty well. But his orientation was towards fruit and basically mono and disaccharides as your primary carbohydrate intake, which I'm not really a fan of, and we'll talk about that here in a question or two.

But do I think that HSOs are beneficial? Yeah, they probably are. I don't think that they are the only show in town, and I think this whole area is just burgeoning. Like I think that 2 years from now or 3 years from now, we're going to understand a ton more about this, like different bacterial streams, different methodologies for maintaining these organisms in our gut, even while traveling and stuff like that, but I suspect that this is going to be a really big area of interest and discovery, and it's going to have some pretty important effects on our health.

Andy Deas: Yeah. All right. Moving on, a question from Russ. "Hi, Robb. I was just wondering what types of modern veggies actually occur in the wild. This may be a dumb question but I can't say I've ever really noticed anything but a few edible things in my trail running. I live in Ohio and I know dandelions have some edible parts. There are apple trees, tree nuts, and wild berry bushes but I can't say I've ever been running a trail and come across things like wild carrots, lettuce or squash. I was just wondering what Paleolithic man may have actually gathered in his day. Thanks a lot, love the show and I can't wait for your book. And Andy, I have a pretty massive beard so don't let Robb give you too much crap!"

Robb Wolf: The ZZ top of Paleo. We'll put that band together. I don't know what instrument Andy would play, maybe the triangle.

Andy Deas: There you go.

Robb Wolf: You know, this is a really cool -- or at least for me it's a pretty cool question and it ties in a lot of interesting stuff. Like one of the interesting kind of armchair commentaries about Paleo in general is just like well, animals run away. They are hard to find. Vegetables are ubiquitous and so that's what people eat. But then if you really get out and you do some stomping over hill and dale and you look for edible plant materials, and I've done quite a number of kind of like edible botany courses, some outdoor survival type courses and stuff like that, and I'm pretty familiar with a lot of elements to that, it's hard as hell to collect enough vegetable matter to keep yourself alive.

Now, it can certainly supplement in many regards, particularly if you're in a survival situation, but this goes right at the heart of this concept in anthropology and evolutionary biology, this optimum foraging strategy which is basically this idea, and it applies to pretty much like all critters that have to go out and collect their nutrients one way or in another.

How do you get enough calories in relative to the amount of calories that you expend? And if you are on any type of a consistent basis consuming --

putting out more energy than what you get back, that's not going to last very long. And in some sort of a dynamic, wild living environment, Robert B. Lee wrote a book, *The Kung San: Men, Women, and Work in a Foraging Society*. This was I think the early 70s. But he did a massive analysis of this topic, looking at what the plant versus animal subsistence ratios were.

And the Kung lived in this interesting environment in which like certain periods of the year, they have a massive ubiquity of plant-based stuff. There's one type of tree nut called the mongongo nut which is really similar to a cashew in that it comes out initially wrapped in a fruit; and then once the fruit either is eaten or kind of falls off, then you have a hard nut inside of a shell, and they get a massive percentage of their calories from this source.

So like in certain periods of the year, they have upwards of 90% of their calories coming from plant-based materials, and then they have other periods of the year when the plant materials are gone and they're getting 90% plus of their calories from animal-based materials. And the Kung are assumed, not just assumed but via genetic mapping, it appears that they are probably the oldest ancestral line of human beings on the planet, like very, very likely they are in the area from which *Homo sapiens* first became species. And so the area that they live in might represent the kind of biome that we evolved in.

Obviously, environmental factors could have been different but that whole analysis that has been done, the optimum foraging strategy, the seasonal variety I think is all very, very telling. And it drives the boat towards a direction which is that the lion's share of our nutrition came from animal products, and this has been well established also from radioisotopic work from the Max Planck Institute where they've looked at Neanderthal skeletons, *Homo erectus* skeletons, archaic *Homo sapiens* skeletons; and when they looked at the different isotopic features of those skeletons, what types of nutrients were taken in? Protein, carbohydrate, and fat. Based on what nutrients are taken in, it will provide different radioisotopic signature in the bones so you can tell very well whether or not a particular critter was eating a lot of plant material versus a lot of protein-ish animal material and whatnot.

And what the Max Planck Institute has established is that archaic *Homo sapiens* and Neanderthals, *Homo erectus*, our ancestors were as carnivorous or more carnivorous than the arctic fox which is like this top level tropic carnivore. So the take on this is that we ate a lot of meat-based material and there just wasn't a whole lot of plant-based material

around. Now, we are opportunistic omnivores. We do eat as broad a variety of stuff as we can get. If plant materials are easy to get and relatively nutrient-dense, then we definitely take advantage of that.

But this is some of that stuff where there's actually -- Mat Lalonde makes a really good point that this evolutionary theory is cool up to a point but we need some scientific validation of different ideas, like the concept of saturated fat. We didn't need a lot of saturated fat in the past, but is it actually all that detrimental of an item? And as we've done more clinical studies on this, it's like no, okay, saturated fat doesn't look like it's all that detrimental.

But this is one area of the whole evolutionary biology perspective that has been pretty damn well documented and it's an area I definitely like geeking out on. This was a good question from Russ. I definitely appreciate it.

Andy Deas: Robb Wolf. Good job meandering there.

Robb Wolf: Yes, sir.

Andy Deas: Good job meandering there. I was job embracing my coffee as you finished up there.

Robb Wolf: I'm embracing mine anyway while I'm still talking. So I'll try to sip it quick.

Andy Deas: Next, we got a question from Ann. "Dear Robb and Andy, my heroes. Just finished main lining the first 44 podcasts. Can anyone say crack? Would you please add at least two podcasts per week? I'm already experiencing the DTs when I look at my iPod, knowing you are not there until next week. I know how pitiful this is. Have pre-ordered the book. I am so grateful for the inspiration and encouragement I receive from the podcasts and blog. I love your blend of science, pseudo or not, humor, dedication and enthusiasm.

Have been eating nutrient dense for years and recently low carbing with no gluten and very few grains. I got to love the 32% fat, heavy whipping cream in my occasional decaf and Kerry Gold butter on everything/anything. I would live in my kitchen making bone broth soups and other nutrient-dense foods if I could. No place I'd rather be. Can you imagine an entire world of truly well-nourished, healthy people? I guess that would qualify as heaven.

My question is what do you think about Dr. Natasha Campbell-McBride's "Specific Carbohydrate Diet" book and Elaine Gottschall's "Breaking the Vicious Cycle"? Your thoughts on the whole monosaccharide/disaccharides thing. Thanks. Love you guys! Could barely wait for the book. Ann - Listener from a really small town in the Midwest."

Ann, what town are you from?

Robb Wolf:

Yeah. What town are you from? Unless she is not looking for Paleo stalkers, in which case, we're not answering that.

One, thank you. Very, very kind accolades there. And then it's been a long time since I read the Specific Carbohydrate Diet. I'm not familiar with the Breaking the Vicious Cycle. I haven't been able to track that down. But both of these, it's my understanding are very similar to the book that I mentioned earlier, the Healing Your Digestive Health, in which they're basically looking at trying to get mono and disaccharides as the primary kind of carbohydrate sources so it's kind of stirring the boat more towards kind of a fruit-based approach.

But there's a couple of problems that I have with that. One is that we know for a fact that this fructose intake starts playing havoc with liver metabolism rather quickly. If we're at isocaloric levels like kind of very much a maintenance level or hypocaloric levels, we can get away with quite a bit more fructose. But if we start overconsuming fructose, if we start impacting that pathway in the liver, immediately we start getting problems with insulin resistance, and this seems to be right at the heart of where insulin-resistant type 2 diabetes, all the hyperinsulinism seems to grow out. So that's one piece of this.

And then another piece of this is that I've seen in a ton of folks who have significant gluten intolerance, gluten problems, they do not respond well at all to fructose, and that's either like raw fructose or from sucrose. And so this is where folks frequently, who if they're overceliac or they just have some pretty potent gluten intolerance, they tend to do better if they're going to do fruit with very low fructose content fruits or they do better with starchy yam, tuber type stuff.

And this is where, and God save that I'm even going to say this, but for years, McDougall, the vegan dude was always saying we're wired up for this starch-based diet, which I don't necessarily buy that, but then when you start looking at the stuff like the Kitavans and whatnot, it has to give you a little bit of pause. You're kind of like, "Okay, starch may not be

quite the Satan's henchman that I had made it out to be and a lot of the low-carb scene had made it out to be. But then like Kurt Harris has pointed out, is this more an example of simply tolerating a food because the starchy roots and tubers that the Kitavans make up the bulk of their diet from doesn't contain the lectins that we see in grains? And so it buys people a larger window of opportunity to consume larger amounts of carbohydrate and not suffer deleterious effects.

And I think that there's probably something to that, but in my experience, people seem to do a little bit better on these starchier carbohydrate sources. Yams, sweet potatoes, turnips and things like that seem to work a little bit better. So I like a lot of what I saw in the Specific Carbohydrate Diet, but in practice I've seen people do better on fewer kind of mono and disaccharide sources and do better on starchier sources.

And again, God save me for everybody that I've mentioned in this meandering, but that's kind of where I'm at with this. Andy, any thoughts on that?

Andy Deas: Agreed. Do you want to quickly for those who don't know what you're talking about, Robb, like my dad, explain a little bit monosaccharide, disaccharides, et cetera, in layman's terms?

Robb Wolf: So monosaccharide is just simple sugars. So if you ate a piece of fruit, usually you will have a mix of glucose which people are usually familiar with; it's the sugar that controls our energy level, blood glucose levels; fructose which they call it fruit sugar; and then sucrose which is what we would call a disaccharide, two sugars stuffed together which probably the most common one is table sugar which is one glucose/one fructose molecule stuffed together. I think in nougat, galactose is a disaccharide, two galactose molecules stuck together, and there's different spinoffs to that.

But what we're talking about with starch is many, many glucose molecules strung together, and in the case of say like yams and sweet potatoes and roots and tubers, they typically come in the form of starch which we've been kind of hesitant to recommend in the past because of potential insulin management issues. But then as our understanding of things has kind of refined, we're kind of recognizing that the lectins that come in grains and legumes may be part of the reason why people lose their insulin sensitivity as opposed to lower lectin containing or non-lectin containing foods like roots and tubers. So it just gets another layer of complexity in some ways when folks were trying to make sense of all this

stuff. But does that help, Andy, with that? I think that will help your pops understand the distinctions there.

Andy Deas: Yes, Robb. I think that was very helpful for some of our less nerdy listeners.

Robb Wolf: Cool, cool, perfect.

Andy Deas: Cool. And next time, Ann, tell us where you're from. I'm from the Midwest. I may know where that town is. Come on. Where is the love? Anyway.

Robb Wolf: Usually people try to hide their... Sorry.

Andy Deas: Oh, Robb. I'm not even going to go there.

Robb Wolf: I'll get a bunch of hate mail, like "The next time you're in Chicago, you're getting a beating."

Andy Deas: That's exactly right. Next, we got a question from Tim. "Hey Robb and Andy, can't wait for my copy of the book to arrive, and I'm eagerly awaiting any news on when you'll be coming to the UK so I can shimmy on down to one of your book signings.

So, my question: I'm trying pack on the muscle to transform myself from skeletal to strongman, so I began introducing fruit back into my diet to get in some extra carbs because I had avoided it. I've noticed that after eating it, say a small bowl of berries with cinnamon, I'd get a stress headache - the pain beginning at the bridge of my nose and focused on my forehead. This happens whatever piece of fruit I choose, although bananas post workout aren't a problem. Is this a stress response to the fruit/fructose? Any ideas or advice on this? And, as my body fat level is extremely low, is there a better way of gaining weight while maintaining this low body fat percentage?"

Let's start there.

Robb Wolf: Gosh! You know, I read this one several times and I've been kind of ruminating on it. I'm wondering if there might not be possibly some sort of a pesticide deal with this. Like he's saying it's like all fruit except banana and the bananas are in a peel. Some people definitely can get kind of a glycemic response to fruit because of the fructose content. Bananas are higher glycemic index so they would have a lower fructose load.

It would be interesting to see if you got any type of a response like this to an equal or larger amount of like yam or sweet potato or something like that, or even like a peeled white potato. It would be kind of interesting. And if you did not get that response, then I think it would be pretty safe that we have some sort of a fructose intolerance thing going on, but it seems kind of wacky that it would manifest just in a headache, but fructose does change magnesium metabolism and magnesium is tied into like smooth muscle vascular bed, whether it's contracted or relaxed. So that's a little bit of a reach, but that's kind of my thought on that.

So Tim, what I would try is just doing some starchier carbohydrate sources, and honestly, for like mass gain scenarios, I would recommend that anyway, kind of unequivocally. I would recommend the big carbohydrate feedings post workout coming from like yam, sweet potato; or if you're really in a pinch, just peeling white potatoes and going with that.

Andy Deas: Just eat those white potatoes raw. That would be fine.

Robb Wolf: Yeah, yeah. What's the worst that could happen?

Andy Deas: Second question is about post workout starchy carbs. "Usually I have yams and sweet potatoes but wondered how cassava and plantains compared in their suitability and whether they were sources that I could include or whether they could be problematic."

Robb Wolf: Cassava is fine. Plantains are fine. Plantains are going to have a profile that's almost indistinguishable from a banana, which is that it's going to have a little bit more fructose content, but I think that those are fine to put into the rotation. One deal with cassava though, and this isn't to get people to not eat it, but it can be a goitrogen, similar to cruciferous vegetables. So this is that argument for variety again. Mix it up. Do some cassava for maybe a week or a day or two here and there, and then mix it up. A goitrogen is something that can block iodine metabolism or block different elements of thyroid metabolism and can cause some thyroid dysregulation. So that would be my only caveat with that.

Andy Deas: And before I move to the next question, I want to jump back up to his -- he kind of threw in another question on the first part. Any advice or ideas on this? As my body fat is extremely low, is there a better way of gaining weight while maintaining this low body fat percentage?

Robb Wolf: Take it slow.

Andy Deas: Yeah.

Robb Wolf: I mean take it slow and do a stepwise progression, which is kind of hard for a lot of people. But the fact that he's lean, hopefully his prioritization is good, sleep is good, all that sort of stuff, set out a goal for maybe about a two to three-month period of really pushing things up and then go off of the mass gain phase to try to lean back out a little bit. Definitely take a stair-step process to it and just take your time. If you can add 10, maybe 12 pounds of muscle in a year and it's legitimately muscle, like you've had a pretty good transformation and obviously this is really relative to where you are in your training age and how advanced you are and all that stuff.

But just my sense is like take your time with it. I've seen so many people do so many mass gains and they will go from 160 up to 185, and then they try to lean back out and then they're back at 160 again. It's just like... You could burn a ton of food. I know. I'm a prime example of that, you know. I have a friend who wants to buy some condoms, and it's like yeah. Just take your time with it. Mainly just focus on getting strong. Like just try to get strong. Move some heavy weight and take your time.

Andy Deas: Yup. All right, good. Next we got a question from Matt. "I know you're a busy guy so I understand if you don't respond/get to my question. I've actually listened, fully, to all of your podcasts and pre-ordered your book. Maybe I forgot or you haven't covered it, but I was wondering about the insulin spike of goat's milk versus cow's/grass-fed cow's milk. I've been doing no dairy but have found goat's milk works well in limited quantities for me. Just wondering if you had found any good studies comparing the two or if you had any info. Thanks again for all your info."

Robb Wolf: Pedro Bastos who is on Professor Loren Cordain's research group and a really, really sharp dude out of the University of Lisbon in Portugal, he did a pretty big analysis of dairy which Mat Lalonde and I have talked about that. He's got some issues with certain elements of it but one uniformity is that in general the insulinogenic profile of dairy is kind of uniform, like most dairy produces kind of a similar insulin response.

The big difference that pops up here is that goat's milk falls into that A2 dairy category. There's an A1 versus A2, and God, I always forget this stuff. I always get it backwards. But most conventional dairy cattle are an A1 variety of the type of casein they produce, which that type of casein seems to be more irritating, more inflammatory, seems to have some more problems; and the goat's milk doesn't produce that. So in an stepwise fashion, I think that goat's milk in general is less inflammatory,

less irritating, and then if you can get a grass-fed variety of it, I think that then we're removing the lectin content that is found in dairy and you have a further improvement with that.

I will do maybe every couple of weeks like get a quart of the grass-fed goat's yogurt just as kind of a probiotic kind of gig. I don't get any acne from it. I don't get any type of like joint inflammation from it. If I do any amount of dairy, even the whole whipping cream, I get a little bit of acne from it and I get some joint inflammation.

Now, this stuff is not grass-fed, and honestly, I've not played around a lot with grass-fed cattle dairy because I just haven't tracked all that much of it down. I've done a little bit. Trader Joe's has a grass-fed cheddar from New Zealand I believe that I can eat a slice or two of that here and there and I don't get really much a problem from that. So I'm really thinking that a lot of the problem comes out of the grain versus grass feeding, but it seems like the goat and sheep dairy is even a little bit more benign than the cattle dairy, but that's in large part kind of like my N equals one kind of experiment with that. But I would play around with that stuff.

For fat loss scenarios, it seems like avoiding dairy is a really good just kind of basic rule of thumb until you get down to a good level of leanness, and also as always that kind of like 30-day intervention. Try to go grain, legume, dairy-free. Eat a really solid Paleo diet. See how you do without then reintroduce and see how you do upon reintroduction kind of to establish that baseline of health.

Andy Deas: I wish I could reintroduce the cream, Robb, without making myself mucosy and unable to read podcast questions.

Robb Wolf: Yeah. And, you know, the cream is so cool because it extracts the caffeine out of the aqueous portion of coffee. And I don't know what exactly it does. I don't know if it bypasses a pass through the liver. I don't know if it fully enhances total absorption or whatnot. But you take any given amount of coffee and then throw the whole whipping cream in there, and it like doubles the efficacy of the caffeine dose like it is. Yeah, it's something else.

Andy Deas: All right. Next, we got a question from Skobie Won.

Robb Wolf: Another good tagline.

Andy Deas: Exactly. Excellent handle.

Robb Wolf: Yes.

Andy Deas: “Dear Robb, let me start by saying you, Andy and Mark Sisson have changed my life. You’re fantastic people.”

Robb Wolf: We will forward this to Mark and let him know.

Andy Deas: I’m just laughing that I’m in that list, Robb. That’s just cracking me up.

“Now that bread is buttered, ha-ha, let me get to the questions. First off I was a very athletic teenager and skateboarding, competitive barefoot water-skier, and wrestling was my life until 21 when I blew out my ankles and never really recovered. Since then I've gotten a desk job. In two years I gained almost 70 pounds.

Both of my parents are diabetic and I was on a crash course for it myself until recently when I discovered Paleo. I had a stent of being a vegetarian and lost a considerable amount of weight. It went from 260 to 230 until I went Paleo and lost another 22 cutting sodas and everything imaginable was hard but I've done it. Now I'm stuck at 208 and can't budge. I haven't gotten back into exercising yet and would like to know where to start back up.

After going Paleo I now have a tremendous amount of energy morning to night, and I've got the itch again to go get ripped. I can look at a dumbbell and gain muscle. Also I only cheat on the diet/lifestyle with light beer and my girlfriend's weekly dinner outing and I seem to handle it well. I've gotten away with flaxseed pizza for dinner for her a few times but she thinks I'm crazy for not eating bread or rice.” Okay.

“I work in a cubicle and...” He’s got some theoretical questions for you Robb. You hate this but this will be fun. “I work in a cubicle and have to decide between the peanuts in the vending machine or a salad from Subway. Which is better?”

Robb Wolf: Why do I hate theoretical questions? This is fine. I’m fine. I’ve been at a Subway in a pinch and I asked for like they have salads and so you get a salad and ask for like double meat, sandwich meat on there. And actually, I’ve gotten out of this place even though it is just like inundated with bread, and I usually don’t get sick. Like I’ll tell folks that I’m allergic to wheat, please be careful, and I’ve gotten in and out there fine, which it sounds like this guy is probably much less gluten intolerant. But I mean you can turn Subway into a decent choice. It was not that big a deal.

Andy Deas: Next question, "I perform music at bars almost every weekend and want to know what's best to order and try to keep it low carb. Most places don't have red bridge or have ever heard of sorghum. I read that bourbon is low carb when it's on the rocks. If this is true I wouldn't be opposed." Robb, your thoughts on bourbon.

Robb Wolf: Bourbon is fine. Any type of clear booze is fine. Throw a bunch of lime juice in there and it's even better, lemon or lime juice. Clear booze is good to go. A splash of soda water, a splash of soda water.

Andy Deas: Don't forget the helper. Good.

Next, "Where should I go to school to become a nutritionalist because being a draftsman isn't working out? I live in south eastern Connecticut if that helps." There you go.

Robb Wolf: Ooh, ooh, ooh. You know, the whole education thing is tough. I mean you have to really think about -- and I have a section in my frequently asked questions on the website about this. You need to figure out what you want to do day to day. How do you want to spend your time? Do you want to be in a hospital clinical setting? Do you want to work in a gym?

Technically, the nutrition counseling piece is supposed to be very, very limited unless you're a registered dietician, and so you need to figure out like where you want to buy in on that. Do you want to go through all the school to become a registered dietician? Do you want to become a strength coach or a personal trainer and just kind of be in that gray area where you're helping folks and doing good work, but technically it's kind of just like a gray area?

Although I stand by this position that telling people to eat whole unprocessed foods, like if you're going to get in trouble for that, then for the love of God, we need to all move to a different country, like it's just gone completely to the wrong place. But I would do some investigating about different options, like check out a couple of CrossFit facilities. Check out like a university strength and conditioning scene. Go hang out with a couple of registered dieticians like one in a hospital, one in maybe a clinical setting, and see how people spend their day and figure out what looks appealing to you.

The hospital clinical dietician setting, I would blow my brains out. Like that seems like a horrible way to spend your time, but no offense if that's the way that people are paying their bills, but it does not seem like a life-affirming kind of nice way to do things, particularly once you figure out all

this Paleo stuff and figure out how completely wrong the hospital-based nutrition protocols are, but that's a whole other gig.

Andy Deas: Next, "Do you think a doctor will falsely diagnose me with celiac so the family will leave me alone? Okay, just kidding! Also I want a "Gluten is Death, Coffee is Life" T-shirt. Where can I order one? I looked on the NorCal website but did not see one."

Robb Wolf: He didn't look close enough. They're on there. They're on the store.

Andy Deas: Oh, there's a store on there?

Robb Wolf: They should be on there. They might be sold out. But I know Shawn reordered them so they should be on. Yeah.

Andy Deas: That's one of those T-shirts that are hot sellers at the gym, but people on the interwebs like them.

Robb Wolf: No. Nobody in the gym would wear one but they've been selling like hotcakes out of the NorCal store. So yeah.

Andy Deas: "Thanks again. You're awesome. And tell Andy, if my music gets to Cali, drinks on me. Skobie Won, pronounced like Obie Won with an SK. And do you mind if I sample your podcast for a song or two in the future? It would be awesome."

Robb Wolf: This one, sure, man. You have full sampling rights on this. Absolutely.

Andy Deas: As long as you send us a copy to play it on the podcast.

Robb Wolf: You've got to send a copy. And maybe that would become our theme song then.

Andy Deas: That would be better than the alternative you have on your post.

Robb Wolf: You know, if we could get some sort of a combo of like Imperial March and the Battlestar Galactica theme music, with some Paleo Solution sampling, that would be amazing.

Andy Deas: With a slogan like "Six listeners can't be wrong."

Robb Wolf: Yeah, "Six listeners cannot be wrong" again and again and again and again.

Andy Deas: Awesome! Question from Chad. "First of all, thank you so much for taking the time to allow us to pick your brain. That being said, I am currently a PE teacher for grades K-4. In my second grade class I have a young girl with brittle bone disease. I am not sure which type, but she is able to walk/run even with the metal rods in her legs. I found a lot of information on the subject but some of these sites involve a lot of politics especially when it comes to nutritional recommendations. What is your take on this disease? Is there any recommendations I can talk to her family about, whether it be nutrition or exercises?"

Robb Wolf: And for Chad, check and see what specific condition she has, and then I mean this basic like gluten-free, dairy-free Paleo diet like heal the gut, all that sort of stuff is amazing for improving nutrient absorption, but I would be really curious to know what specific variety of brittle bone disease she has. Because you can have calcium malabsorption. You can have different problems with the way that the bone volume is laid down. You can have collagen formation in the bone problem.

So really, there's a lot of variability on this and so we could look at the exact mechanisms of what is happening in her specific condition and then play that across the background of a Paleo approach. So if Chad hears this, if you can, track down what her specific condition is and then we could kind of go from there.

Andy Deas: Yes. And also, for those who have not checked out the new robbwolf.com, there's a handy little link in the contact area to send your podcast questions directly to the right place. I don't know why I was just reminded that, Robb, but I'm just going to throw that out there.

Robb Wolf: Cool.

Andy Deas: Cool. "Hi Robb and Andy, I'm a listener from Singapore a.k.a. "the little red dot." Because our country is small it is marked by a little red dot on the world map. Anyway, love your podcast. Love your so-called ramblings. Keep rambling. Ha-ha!

Two questions: (1) Living in Asia, it's very difficult to convince my mum to give up the daily staples like rice and noodles. Her waistline is expanding as she ages and I'm getting worried. One of her arguments for the increasing number of metabolic diseases around the world is that as we are living longer than our ancestors, hence allowing such diseases to surface, unlike in the past when people would have died without having to go through such diseases.

I understand that her argument is flawed to a certain extent, but then again there is some truth to her argument. So my question is, what is your response to her argument, and how can I convince her to go cut down on starches such as rice, noodles and grains?”

Robb Wolf:

You know, this just gets into a big problem. One, trying to convince family of anything is almost, almost a failed endeavor. I think it's worth a try. We had a woman at the most recent Atlanta gig who three weeks before the gig was wheelchair bound due to multiple sclerosis, and then her son begged her to give Paleo a shot so she went gluten-free, dairy-free Paleo. And then when she showed up at the search, she was walking with a walker, which was completely like obviously a huge change. Like she was literally wheelchair bound three weeks before that.

So the stuff will work if you can get people to do it. The unfortunate thing is that usually convincing our family is like the biggest area of failure of any like subsection of people that we're going to try to influence and that just sucks, but it's kind of the way it is.

I don't know. Have you walked up to your mom and say, "Hey, mom. You don't know what you're talking about? Hunter-gatherers didn't gain weight as they aged. We have tons of documented info on this." I mean I don't know. That's the facts, that's the reality, and then you can just buckle this stuff up, which is where I usually like to go with this is that experiential N equals one thing of "Mom, let's not talk theory per se. let's try this for a month. And if I'm wrong, then the worst thing that's going to happen is that you spend not eating some of your more favorite foods. If I'm right, then it's going to improve your health and you're going to look better and feel better." And so that's really where I would start ending the whole thing.

If she's a very cerebral person, then you could track down some of the information from Loren Cordain. I cover this stuff extensively in my book too just talking about the fact that hunter-gatherers absolutely did not gain weight as they aged and they had significant numbers of them live into advanced age and we have both anthropological and archaeological evidence of this stuff. So that's the best I can do on that.

Andy Deas:

All right. "You keep mentioning grass-fed beef and seldom mention other protein sources like pork and chicken. Is there a reason to this? Are pork and chicken inferior than beef? Also, have you heard that it's better to eat meat coming from animals with four legs than animals with two legs? Thanks, guys. Keep up the good work. I'm trying to do my best to spread the word about Paleo lifestyle over here."

Robb Wolf: You know, I usually just mention the grass-fed beef because it's one of the only kind of consistently pastured sources that people can find, but there are pastured pork sources, free range chicken. I mean anything that you can track down like that I think is pretty good to go.

Somebody had a link to -- gosh, what was it, kind of pork production in like gosh, Okinawa, and the guy was kind of referencing -- saying that the pork was high in Omega-6 but then somebody pointed out that all of that is just based on what the critters are being fed and that in certain areas the pork is fed a lot of coconut, and so obviously it's not going to have a lot of Omega-6 from that source.

Basically, you just kind of need to look at what the critters are being fed, and really unequal opportunity with regards to how many legs the critter has and whether or not I will eat it. It could have anywhere between one and four, and possibly an excess of that, and I will probably eat them. So no problems there.

Andy Deas: Maybe even six legs, I'll eat it.

Robb Wolf: Possibly even six, yes, yes. If we had some Chernobyl goats, then I'll give it a shot once.

Andy Deas: All right. Robb, we're getting close, man. We're doing pretty good on time today. I'm impressed, considering you're on the road. This is our first.

Robb Wolf: Hey man, you were anxious. You were anxious about this so I'm trying to streamline my stuff. Andy was anxious today, folks. He was worried that I would meander a lot.

Andy Deas: I've had a lot of caffeine. It's the first day of this week. I haven't had to get up at 5 so my brain is a little amiss right now.

Robb Wolf: So what you're saying is you didn't want your day pissed away with me rambling.

Andy Deas: No comment. Question from Scott: "Robb and Andy, great stuff. I've submitted questions before and then found the answers in my daily trips back through podcasts or comments, so hoping the same will happen to this question." Actually Scott, we're just going to answer this one directly so you'll be good.

Robb Wolf: We'll totally throw them off now. I'll have no idea what's going on.

Andy Deas: "I've read and reread your post on post workout nutrition, the how and why of carbs and fat in the post workout meal. So I've been doing protein powder with 1/3 can coconut milk and water about 20 to 30 minutes post workout. Timeframe because I shower and drive back to work. I read on Urban Gets Diesel (Scientists are Hot post) that Lalonde suggests no fat in the post workout and not eating until an hour after working out."

I'm going to pause for a second, Robb. Did you see the post by Melissa on Whole9 this week about refinding her voice?

Robb Wolf: I did not.

Andy Deas: You need to check it out. Your book with the Robb Wolf tone has encouraged her to return to the genius a little bit more of the Urban Gets Diesel, like Scientists are Hot and Crazy Town, and not be so corporate on their new book.

Robb Wolf: Nice.

Andy Deas: Yeah.

Robb Wolf: Right on.

Andy Deas: Yeah. So I thought that was cool.

Robb Wolf: And like she has -- Melissa should do a book at some point.

Andy Deas: Oh, yeah.

Robb Wolf: She should do a book because she has an amazing witticism about her and communicates this stuff in a very accessible way and with tons of sass and personality which I think just makes it so much more engaging for people. So that's awesome. That's cool. I will check that out. I haven't read anything lately with getting the new website up and all the rest of that. So I will check that out.

Andy Deas: "I am doing a fat loss phase right now to get down to the 10% mark to begin the mass gain. I am 29 years old and hover around 20% body fat according to various scales, and weighed about 245 at last check, although my home scale shows 237 in the morning.

So my question is do I need fat in the post workout meal until I am lean? And should I put the post workout protein source to about an hour after working out? I also do about 25 grams protein 30 minutes prior to working out, and post workout is about 75 grams protein. Protein powder is 100% whey." Who knows? Jesus.

Robb Wolf:

So tackling this like if fat loss is -- just to save Andy from himself here. If fat loss is the primary goal which a dude who is running 245, 20% body fat, I would say yeah, fat loss is like the primary goal here. You don't need any protein pre workout. You don't need any immediate post workout. You don't need additional fat. This is where I would drive the boat with try to get about a gram of protein per pound of body weight and they fall short of that. Just try. From whole food sources only. Some post workout fasting even for like an hour is totally fine, because right now, the focus is fat loss.

And this is another thing out of the Art DeVany playbook which if your workouts are challenging, growth hormone promoting, and that you produce some lactate but not so long or not so nasty that you start getting into that cortisol pathway, which unfortunately I think a lot of the CrossFit stuff can go there, when you start getting out past 7, 8, 10 minutes, it's very different types of frame of reference. That kind of ideal scenario is a brief hard workout that is then followed by a bunch of easy activity. And from right out of Art DeVany's, that original essay he had, release that growth hormone, get the fatty acids mobilized into the bloodstream and then use them as a fuel source.

And Martin Berkhan kind of comments on some of this stuff where he recommends some fasting cardio but that cardio is very, very low level. It's non-glycogen depleting cardio because then if you go too hard and particularly if you have low blood sugar levels then you're going to start converting muscle into glucose. Gluconeogenesis should get cortisol released and all that.

So there's some old kind of bodybuilding-esque type of stuff that works great here, but we can take a little bit of an evolutionary perspective, look at some stuff out of the Art DeVany playbook and all that sort of jive, and I think that that would work great. But the fundamental thing is you don't need any -- for someone in this situation, you absolutely do not negotiate. You don't need post workout nutrition that's in a liquid form. You don't need pre-workout protein, lift heavy, do some smart metabolic conditioning. You'll get leaned out and you'll probably gain some muscle mass in the equation.

And, you know, if you're running 245, 20% body fat, we could get you down around like 218, 215, something like that, and be just a fire-breathing monster. So that would be my goal personally.

Andy Deas: Except that he's 6'5".

Robb Wolf: Oh, he's 6'5". That's right.

Andy Deas: I just remembered that. So we'll get to that, but...

Robb Wolf: Yeah.

Andy Deas: I agree. I mean put down the damn protein powder if you're trying to lean out, please.

Robb Wolf: Yeah. That's doing you no favors at all, not at all.

Andy Deas: Question 2: "I discovered Paleo and CrossFit about a year and a half ago then graduated to Paleo and Starting Strength in December of last year. I've only been seriously squatting and dead lifting for about a year. Prior to that was sporadic bodybuilding style sessions on and off again for the last three to five years. No emphasis on squatting deep or correctly. Have hit PRs in all lifts since then. I didn't play teams sports growing up, just neighborhood stuff. I have about 196 pounds of lean body mass at any given time.

A cousin who just graduated high school weighs about 220 with about 20% body fat and played football since elementary school and is putting up 400 pounds on the squat. He is 6'2"ish. I am 6'5". I am wondering if studies have been done to show the time of muscle memory to growth or explain how I have more muscle than he is but I can't lift as much.

I have worked up to 200 pounds on squat, 230 dead lift, pathetic press numbers. I am not skinny and have held fat around my waist since college. I also have discovered the Mobility WOD to work out some tightness and issues from cubicle life for the last five years.

I guess there is a question in there somewhere. Maybe to put it bluntly, will my numbers improve to match what appears to be good lean body mass numbers and do I just take Starting Strength approach slower until down to 10% range to keep insulin resistance under control. Pseudo-answers are acceptable."

Robb Wolf: Yes.

Andy Deas: Yeah. And here's the thing, man. You're 6'5". I don't know what your leg length is like but I don't know what your cousin's built like being 6'2" but there's all types of things with how your body is built that impacts how much weight you can actually lift.

Robb Wolf: Yeah, yeah, absolutely. Yeah, that leverage deal is huge. Nicki is 2 inches shorter than I am, but when we sit down, she's almost 3 inches taller than I am because Nicki is like all torso, which is great. Like she's a damn good little Olympic lifter but like her dead lifts are abysmal. Like they're terrible in kind of CrossFit Land kind of gig but she can lift like a monster because she can stick her fanny right between her feet when she squats. Perfectly upright torso and so her catch on the snatch and the clean and jerk is fantastic. She is a pretty strong squatter too, not massively so, but the thing is that she looks like Pyrros Dimas with like an Italian hair job or something. So the leverage deal is just huge.

What you need to do in my opinion is definitely like the Starting Strength approach, like a linear strength progression. Add a little bit every day. Let's assume that you've had some coaching in these movements. Part of your deal could be that you have abysmal form. I hope not but that's certainly a potentiality. Find a good coach nearby and go get some assessment on your technique and make sure that you're technically proficient particularly here in the beginning so that we don't lay down years or months to years of bad movement patterns. But yeah, chase that linear strength progression as part of your lean out phase and where you will finish out at the end will be a much better athlete, much more like aesthetically pleasing physique that you will have at the end of this whole process, and just endeavor to get stronger.

I mean the reality is that there are going to be people with probably better leverages for doing that type of stuff; but like I've said, a number of people, if we were to get you into a boxing or kickboxing situation or throwing implements like a shot put, hammer, or discus, you're going to crush that. So the type of leverage you have may not be spectacularly suited for lifting heavy stuff, but they're really, really good for beating the tar out of people or throwing objects along the waist.

Andy Deas: Yeah. And that's not to say you shouldn't lift heavy stuff. It's just realize that there is some self-selection going on, so don't beat yourself up that you have more muscle mass than your cousin and he may be stronger at this point.

Robb Wolf: Yeah, yeah, absolutely.

Andy Deas: All right, Robb, final question from anonymous.

Robb Wolf: Woo-hoo!

Andy Deas: Yeah.

Robb Wolf: Ding, ding, ding, and the winner...

Andy Deas: Yeah. "I began eating Paleo in April. Started out doing really well; losing some body fat and staying strong. However, the last month or so I've really been struggling with eating right, constantly eating non-Paleo food and cheat meals and my appetite is huge. I think I've gained about 10 pounds since then. I've been doing some higher volume endurance training lately as well to get ready for a half ironman in October.

I also think that may have something to do with my increased appetite, but I have also been taking Lexapro since January. I've just been reading about its side effects and weight gain/hunger is one. Do you think the Lexapro could be a factor in my cravings/weight gain? Or do you think the increased endurance workouts? Any help would be appreciated."

Robb Wolf: My gut sense on this is it's just the endurance workouts. Like the Lexapro seems to have about equal number of people who gain versus lose weight when they're on it. So there's like a 5% to 10% of people who seem to gain some weight when they're on Lexapro. 5% to 10% people seem to lose some weight when they're on Lexapro so it can be either an appetite suppressant or a promoter depending on what folks have going on. The SSRI kind of effect just hits people in different ways.

This is kind of reminiscent of a lot of what Gary Taubes talked about in the Good Calories, Bad Calories, which is just basically one of the ongoing conundrums or difficulties that people face when they're doing fat loss or weight loss programs that without some sort of typically carbohydrate restriction or a focus on insulin management, these programs tend to fail over the long haul.

People start exercising and I'm always pushing exercise. But I'm pushing exercise more from a health and a quality of life standpoint than I am from just a specific fat loss standpoint. The caveat with that is that if you have your nutritional docs in a row, then if you get your metabolic rate up and the caloric expenditure up, you can get really good synergistic effect in one spot. Taubes, he has a new book coming up at some point. Who knows? Maybe he will address this distinction.

If we have a combination of both an insulin managed approach, carbohydrate managed approach, lifestyle and nutrition, and then we graft onto that some smart training that enhances our insulin sensitivity, that improves growth hormone production and all that sort of stuff, we should have a pretty good combination for fat loss. So that's the other side of this. So I'm much more inclined to think that this is simply a problem or not necessarily a problem but just simply a side effect of increased work output from the training that's driving the increased hunger.

Andy Deas: So then probably a good approach would be then to potentially play with upping total food volume, starchy carbs via sweet potatoes and yams. Would that make sense, Robb?

Robb Wolf: Sure, sure. And I mean just driving the boat based on recovery. You know what I mean. It's just see what the heck is going on there. Like did he mention -- he's not really gaining any weight or anything.

Andy Deas: He has gained 10 pounds.

Robb Wolf: Oh, he has gained 10 pounds.

Andy Deas: Well, and I also wonder, with some folks we see some of the higher volume endurance stuff tends to sometimes jack with cortisol and even cravings for sugar for sure which can cause people to run up amiss sometimes.

Robb Wolf: Yeah, yeah. So like that was a piece like I was so thinking about that Gary Taubes piece that I wrote. I was kind of not thinking about this. This is one of those things that we see a lot when people start doing more training in general and kind of endurance training specifically is that they will get kind of a cortisol response to that. And so like if the 10 pounds seems to be mainly around the bread basket and if we see a blood pressure increase with that, then I would be really nervous about increased insulin levels, increased cortisol, and whatnot play into that whole scene.

Andy Deas: All right. There you have it. Robb Wolf. Episode 46.

Robb Wolf: Woo-hoo!

Andy Deas: Yeah. Well, thanks, man. Thanks for your time.

Robb Wolf: Thanks, Andy.

Andy Deas: And good luck in NYC at the little John Durant meet-up and we'll talk to you next week.

Robb Wolf: Right on, Andy. Thanks, man.

Andy Deas: All right. See you, dude.

Robb Wolf: Thanks. Bye-bye.