

Paleo Solution - 412

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Robb: Welcome back to another edition of the Paleo Solution podcast. We had a bit of a standoff here because Nicki was saying, "I need to figure out what to say when you ask me, 'What's new, wife?'" And so I'm just turning it all on its head and I'm not going to ask you.

Nicki: Because nothing is new.

Robb: Nobody cares. I don't care.

Nicki: It's called the rinse, lather, repeat. Wake up, breakfast, kids to school, to the office.

Robb: That doesn't sound very spiritual or self-actualized.

Nicki: No, it doesn't. Jiu-jitsu.

Robb: You worked some half guard yesterday.

Nicki: I did.

Robb: You like half guard better than full guard?

Nicki: I do.

Robb: What else? Nothing else?

Nicki: Gosh, it's gorgeous here in Reno this time of year, warm days, sunny.

Robb: Cool mornings.

Nicki: Cool mornings, yeah. Just perfect. Nice fall. That's all I got.

Robb: Okay. That's okay.

Nicki: I'm not a chatty one. You didn't marry me because I was chatty, right?

Robb: No, no. I think it was somebody the other day was like, "Okay, Robb, who's hotter? Anna or Elsa?" I'm like, "Clearly, Elsa." And they're like, "What?" I'm like, "Yeah. The whole ice princess thing. That's my wife."

Nicki: Okay.

Robb: Nicki really would -- Other than Nicki is like chronically cold all the time--

Nicki: I'm not chronically cold.

Robb: You have a tendency towards chilliness, shall we say.

Nicki: I just like to be warm.

Robb: You definitely like to be warm.

Nicki: I'm a sun baby.

Robb: Something like that. Why do we live in the high desert instead of the--

Nicki: It's sunny a lot.

Robb: Okay. All right. Folks didn't tune in for this. What do we have here first on the docket? Valter Longo?

Nicki: Let's see. We have a question from Wayne on Valter Longo's longevity diet.

Robb: Wow, you did the--

Nicki: I did it. I learn.

Robb: Nice.

Nicki: So, Wayne says: Robb, what's your take on Longo's view that protein should be limited because it raises IGF-1? He says that none of the populations that have the largest percentages of centenarians consume much protein. I understand that IGF-1 has a beneficial anabolic effect but high levels have been linked to cancer and other chronic diseases. Can you give us your views on this?

Robb: Man, this one's just a whole massive topic to unpack. Everything in biology has tradeoffs, without a doubt. I think that if we know anything then just basically over consuming food in general is probably problematic. This is our modern problem of hyperpalatable foods and just generally overeating. This is part of what's so damn hard to unpack this stuff, is that most of the places that you see

centenarians, they're not eating processed food across the board. And so that's a whole interesting piece to this.

If they're not eating processed food and even the traditionally prepared foods can be quite delicious and tasty and everything, they just tend not to be in that hyperpalatable eat, bet you can't eat just one Lays potato chip, Doritos Roulette type of deal. Definitely we see one of the great challenges, I guess, with aging is, again, maybe these two spectrums.

You don't see people reach really advanced age if they're significantly overweight. That doesn't happen. But what's possibly the primary concern of people who are aging is sarcopenia and eventually unable to move and having all kinds of degenerations associated with that. Art De Vany had always thrown out this number that once you lost about 40% of your basal muscle mass--

Nicki: Your lean body mass.

Robb: Your lean body mass. You're dead. There's this dueling banjos with that. In my opinion, I think that Longo is overly concerned about this. I don't think that they're providing the kind of thoughts around punctuated equilibrium.

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If you lift weights -- and this extends also the mTOR. We could take IGF and sub that out and put mTOR in here which is another one of these proteins related boogeyman issues. If you lift weight, if you're active and you are not eating six meals a day every day, I don't know that any of that stuff really matters. Is it really comparable?

The effort necessary to be an NFL lineman or to be a pro bodybuilder, there's probably some shortening of the longevity curve with some stuff like that. And I'm going to get the primary author of this paper that I've loved for years but it looks at the fact that caloric restriction does not extend lifespan in all species. He makes the case that it probably won't in humans. The case that is made in there is the most onerous, nasty caloric restriction like a 40% below satiety level initiated in youth so that you're hypogonadic, cold, no sex drive, low muscle mass, that it might buy you about five to seven years of additional life, which would be miserable.

Again, you have to enact this stuff early in life to really get the benefits versus if we lift some weights, get some sun on our skin, take a sauna, don't overeat, which I mean the don't overeat thing is it's trite to say that. It's challenging to actually implement that. But like a higher protein intake and maybe two meals a

day or two meals a day this day, three meals a day the next day, doing some exercise.

There's so much upside around all that stuff that -- I don't know. If you don't die of cancer, which the theory here is increased protein intake accelerates cancer. It does not. If you develop cancer then overfeeding can definitely be a primer. But interesting stuff that was round filed from T. Colin Campbell's China study work, when they were feeding these mice varying degrees of protein, what was round filed and not discussed was that the higher protein intake animals actually -- and what they were also doing was feeding these animals a mutagenic substance aflatoxin.

They were trying to induce cancer in conjunction with eating protein. What was ignored in this is that the animals eating more protein took longer to develop cancer and then once they develop cancer, the cancer tended to be more aggressive. What's happening there potentially, and the mechanisms make a lot of sense, is this generally higher protein intake improves your antioxidant defenses. It improves glutathione and superoxide dismutase. It enhances detox pathways.

Again, there are tradeoffs on all this stuff. Again, I guess, that's a long wandery thing. This is where sometimes stuff like this, like doing a specific video piece on this is good because I can really--

Nicki: That might be really helpful, yeah.

Robb: -- lay my thoughts out in the whole thing and keep some track of it. I guess, the long and short of it is that I'm really underwhelmed by the boogeyman of eating too much protein if it's not in the context of just eating an overall westernized refined diet and the individual is overweight and insulin resistant.

Nicki: And inflamed.

Robb: And inflamed and gut dysbiosis and all the rest of that stuff. There's just a lot of moving parts. I see lots of people, for ages, it was insulin. "Oh my god, insulin is the worst thing in the world." Clearly, from person to person, this is where the personalized nutrition come in. One person eats 50 grams of rice and they have a very modest glucose response and insulin response. And another person eats 50 grams of rice and they have all terrible glucose and insulin response.

Yes, insulin matters but it varies from person to person. And I think if we just generally figure out a way where we've got a little bit of time restricted feeding again, we do some resistance training, we do a little bit of cardio, we get some

sun on our skin, we do some sauna, those are the things that are absolutely -- we have really solid data--

Nicki: We laugh.

Robb: We laugh. Yeah. Those are the things that we know for fucking sure extend life and also just the quality of that life is really good. We can take that stuff to the bank. And this other stuff, god, going into your late 50s, early 60s and being sarcopenic and skinny and already looking frail, that just doesn't seem like a good idea to me at all.

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The flipside of that is going into your 50s or 60s and being significantly overweight and facing orthopedic issues and all kind of other stuff. That's not a really good deal either. But this is the benefit of this ancestral eating pattern. It's generally satiating. It's generally folks color within the lines reasonably well, reasonably easy to eat this way and maintain a decent body composition and everything, and good nutrient density.

Yeah. That's the longest answer in the world. But it's really complex stuff and there's definitely pluses and minuses and people have religious convictions around, "You got to suppress IGF-1." Particularly you go out into vegan land, you have to suppress IGF-1 at all costs. Those people look like dog shit oftentimes. I don't know. I don't know. That's the best I've got on this. I'm really wandering around that so we'll go to any -- Any talks there with--

Nicki: I do think one of your video treatments would be super helpful. It can be really detailed and point people to some articles and papers and whatnot.

Robb: Cool. Yeah. And just to wrap that up, one of the big problems late in life like heart failure is associated with a concrete loss of IGF-1 signaling. That's one of the problems in congestive heart failure. It's a really complex mechanism. But this is, again, where you want the right balance. You don't want too much. You don't want too little. You probably don't want shit turned on constantly all the time. You want some variability to it.

But people are so quick to just run out to these extremes and they don't think about the periodicity that's baked into biology. This is where I just so give a hat tip to people like Art De Vany. He just saw through all this stuff. Using that evolutionary template, and I'll do a little plug, Austrian economics background and power loss and natural distributions, he made some intuitive leaps that were 30 almost 40 years ahead of where everybody else is. And yet a reticence to throw his lot in with these singular governors of health. It's like, yeah, insulin is

important and this is important but it's not a matter of trying to stamp this stuff down to the absolute lowest levels. That ends up causing problems on the flipside of things.

Nicki: And what we think we know today might be completely opposite of what we know in 20 years or 30 years and so stamping it out might seem like a good idea now but then what--

Robb: Yeah. This is kind of the Taubesian -- we really are waxing eloquent on this thing, but like the Taubesian insulin hypothesis, yeah, we want to maintain insulin within I would argue like normal ancestral levels which is very different than even what mainstream medicine is talking about. But that's not necessarily like an all butter diet absent protein because you're even worried about the insulin stimulation from protein being consumed.

It's a completely fucking different deal. And this is how far out in the weeds that some people have taken this stuff. And again, Art -- it's hard to grab these singular individuals because I think Art is probably just like genetically out in that bell curve deal. But for hanging out with an 80-year old dude and he's just now getting some salt and pepper effects in his hair and the dude still carries good muscle mass and he's super sharp and everything, I want to age like that.

And I see some people that are really selling the super low protein intake both on the vegan and the keto side. I want to age like those people. And again, this may be a bit of selection bias, only time will tell whether or not where the truth is with that for my own aging experience but--

Nicki: How old is Dr. McDougall now? Is he in his 80s?

Robb: No. He's late 60s or maybe early--

Nicki: Because Art De Vany looks way, way better.

Robb: Way better. And if we just have a fight to the death, it's just--

Nicki: I'd put my money on De Vany.

Robb: Yeah, totally. Yeah.

Nicki: Okay. I think we can call that, that question.

Robb: Yeah. We beat that one up pretty good. But I will circle back around and actually do a video treatment on it with some slides because there's just a lot of different

moving parts and it's nice to be able to point out the pluses and minuses and the biological tradeoffs going on there.

Nicki: Okay. Our next question is from Eric and it's on the topic of OMAD, one meal a day. Hi, Robb. Just wondering what your opinion of eating one meal a day is and is it beneficial to still eat keto while doing it?

Robb: Man, I guess, it's one of these things where if it's convenient for you and you have good biomarkers and good health and good performance then, I guess, it's okay.

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Generally, you're going to -- Peter Attia was, in theory, eating a ketogenic ratio diet and then shifted to eating only one meal a day. But for him to even hit that minimal protein intake, the reality was that he was going in and out of ketosis because he had to eat so much food at that singular meal so he called it intermittent fasting with intermittent ketosis. You can do some poking around on that.

There's just no two ways around it. You're going to eat so much protein in a single meal that it's going to bump you out of ketosis which may or may not matter in the grand scheme of things. Again, we've talked a ton about that stuff. People get overly wrapped around the actual being around specifically--

Nicki: Depends on what your goal is. Is it your goal to be in ketosis for a therapeutic reason or are you trying to lose body fat or what are you trying to do with this?

Robb: Yeah. I'll shift gears a little bit and Luis Villasenor, the co-founder of Ketogains, he was on the OMAD deal and doing keto ratio macros for two, maybe three, years and motoring along good, like strong good body composition. But he did some work with Menno Hanselmans and Menno recommended keep the rough amount of food that you're doing but actually eat a breakfast, wait a little while, lift some weights and then do a post workout meal and then have a very light dinner, which ironically is exactly what Art De Vany is recommending of ages. Again, as an Art De Vany, fan club deal.

But Luis started doing that. Now, Luis already carried a ton of muscle mass. He's a very advanced lifter. And if I'm not mistaken, in a year and a half, he's added seven kilos, almost 14 pounds of muscle, by doing that. So, when you dig in and look at the comparative benefits of some intermittent fasting versus just not overeating -- and again, with the caveat. I feel like I totally am broken record. It's hard not to overeat in our modern food environment. This is where some time restricted feeding and stuff like that can be beneficial.

Just as a baseline, if you're eating a nutrient dense diet and you're not overeating then you did 80-90% of the work. I think that there's a little bit of upside to be concerned, maybe a significant amount of upside like considering circadian biology. There's, I think, a credible argument for eating more of your calories earlier in the day, which actually OMAD typically doesn't cater to that because people tend to eat later in the day.

Nicki: They do it in dinner.

Robb: And there had been some folks that report some really whacky dyslipidemia and some reactive hyper and then hypoglycemia so they get very high and then very low blood sugar levels. I don't know. If it's working for you then great but I don't think that over the course of time we're going to see the one meal a day just showing massive upside to--

Nicki: Relative to just--

Robb: Relative to two meals a day or even three meals a day. Yeah. Two meals and a snack, something like that.

Nicki: Okay. Our next question is regarding sunscreen. Dewey says: What are your thoughts on sunscreen? What drawbacks are there to using it? What's the risk of skin cancer if you progressively build up sun exposure and don't burn?

Robb: Man, that last question is really for the -- yes, the last bit of a question. That's the really the crux of this. I did provide a link which will be in the show notes. The name of the article is Risks and Benefits of Sun Exposure. It's over at PubMed. The thing with this really is -- and I've got to give a hat tip of Michael and Mary Eades with their book Protein Power Lifeplan released back in 2001.

They did a whole chapter called Sunshine Superman and they talked about this stuff at length and photoperiods. Book was so far ahead of its time. It's really stood the test of time. But they made this case that the emerging data at that point was that safe reasonable sun exposure absent sunburn would reduce all cancer rates significantly more than what it would raise the potential melanoma or skin cancer.

And there are some very well done studies that look at this stuff. The real trick here is, again, that thing of avoid sunburn, do safe reasonable increasing exposure. Every time I post something like this like when I post it on Facebook every time, the fucking gingers come out of the woodwork and they're like, "My kids burned."

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And then they're like vampires. If you're a ginger, your kids are gingers then it may be 30 seconds on day one of safe exposure. And it may be that they top out at three minutes and then the hats go on and then the long sleeve shirts go. The way that we roll with this, if we're at a very high sun reflective environment like the ocean or the snow or something like that, you go to the lake, then we will use a little bit of sunscreen on the girls' faces. It tends to be more the zinc oxide stuff which is an opaque barrier versus trying to degrade one form of UV versus the other form of UV.

But largely what we do is we let them get some sun exposure and then we shift to hats and shirts like rash guards and that's the way that we've ridden this thing. I will throw out a couple other thoughts. One, if you're generally eating an anti-inflammatory diet, some sort of Paleo, keto, something another, I would really make a pretty stout case that you burn less easily, less frequently.

And I will say that the ginger parents that pop up in my Facebook page, I know for a fact that they're feeding themselves and their kids shit because I've followed their timeline and they're not eating well and they're still bitching about burning all the time. It's one of those things where if you're eating a pro-inflammatory diet and then you get another inflammatory insult, you're going to get more inflammation.

This is some of the stuff that's problematic. I think I've mentioned some products like Sundots and also astaxanthin and then zeaxanthin which can be very helpful in mitigating specifically that sunburn effect but it doesn't appear to interrupt a lot of the other secosteroid cascades and vitamin D production and sun exposure, the benefits, like increased vitamin D levels are a piece but I would maybe call it 10% of the benefit.

Circadian entrainment, the enhanced immune function, because of those modulations of the immune system from opiate release and stuff like that, it's very similar to low dose Naltrexone, I suspect. The benefits just go on and on and on. Not wanting to hang myself because I actually got out and had some sun. That's a big benefit from a longevity perspective.

The question was about sunscreen. If you use a sunscreen I would use it more like the zinc oxide type stuff and then beyond that I would go more like hats and shirts and get a full block, eat an anti-inflammatory diet, definitely try to do safe reasonable ramp up on sun exposure. One big question that I have is, let's say, you live in a reasonably -- you live in Toronto or Seattle or something like that and you're going to go to Hawaii or Mexico. Does it make sense to go to a tanning booth and buy a series of ten visits and on day one you do 30 seconds

and then on day two you do 45 seconds? You literally do 15-second incremental increase on that.

Everything that I've ever read with regards to tanning booth exposure is that it definitely -- it appears to increase skin cancer risk. But I don't know if they've every really looked at dose response deal.

Nicki: And just people going in there and doing the full five minutes straight out of the gate.

Robb: Yeah. The thing that I've always said is we're shooting for a therapeutic exposure, not trying to turn yourself into a leather handbag. I don't know that there's ever -- when I'd looked at that stuff very closely, I haven't ever seen someone trying to delineate whether or not people were doing a micro dose of this stuff.

The point being like is there an upside to doing that like 30 seconds day one, 45 seconds day two and building up over the course of a seven day period, so that you've got a little bit of base occurring and then you go to Mexico or Hawaii and use the Sundots and blah, blah, blah. You're really mitigating your downside with all that stuff. My gut sense is that makes sense but I really don't know and we don't have the data to support it. That's one of those things that I keep poking around and wondering about.

Nicki: All right. Our next question is from Patrick on pulling and eccentric exercise only. Hi, Robb and Nicki, first, I just wanted to say thank you for everything that you wrote and said over the years. You and others like Mark Sisson helped me lose over 100 pounds and keeping it off since 2013.

Robb: That's awesome.

Nicki: That's awesome. My question: Is there any counter indication of doing only pulling exercise or eccentric. I suffered rotator cuff injuries a couple of years ago and no matter how careful I am every time I try to do a heavy push exercise, even not so heavy, the pain comes back. My only goal at this point is to maintain as much lean body mass as I can so I can grow old and farm coconuts with my great, great grandkids.

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Robb: Good plan. Let's buy a lot next to each other. A couple of things. I'm assuming, because Patrick mentioned eccentric, which is the lowering phase, I'm guessing that, say, if he does a push-up or a bench press, that he can handle the lowering part, he just can't handle--

Nicki: The pressing out.

Robb: The pressing out part. So, a couple of thoughts with that. One, he should probably check out kinstretch, almost guaranteed we're doing some stuff with that and it's ridiculous. We did a hip sequence two days ago and I still feel like Mikhail Baryshnikov took over my hips. It's pretty amazing. I would definitely look into kinstretch. From there, if the options are -- One other thought. In doing some work with Coach Summer of Gymnastics Buddies, I would really look closely at isometric colds in planks, hand stands, dips and just build time in those lockout positions and see what that does for the overall pain issue.

If all that you can do, let's say you tick all these boxes and you do the kinstretch, you do all this stuff and there's just no getting back to a point where you can do the raising portion, then I could easily see you using some of the hammer strength machines or different things like that where you could use your legs to raise the mechanical bench press.

There's some things where you sit down, you're sitting upright and then you put your feet on the lever that pushes the handles out for you. So you can use that to raise the load for you. You do the eccentric. Use your legs to raise the load again. Just in that, you have to find the machine that works for that or conversely say like a push-up position or ring push-up or a dip or something like that. You hop up in the extended position. You lower doing the eccentric. You pull your knees up under you. Use your full body to straighten your arms and then you go back through it and you figure out ways of doing eccentric only movements.

So, I would play with all of those things. I suspect that with some kinstretch or with some other physiotherapy thrown in there that we could regain that ability to press but I would check out the kinstretch, definitely aggressively work those, try to build time in these lockout positions like push-up or plank position both on the ground and on rings because that instability, the rings is kind of interesting, a dip position, and if you can, kick up into a hand stand and pull a hand stand. Just start working the pressing positions but in that full lockout mode.

Nicki: Okay. Let's see. I think this is our last question for today.

Robb: And funny enough, it's the longest question but going to be the shortest answer, ironically.

Nicki: Okay. So, this question is from Angel and it has to do with water retention during the luteal phase. Hi, Robb and Nicki. I love the Q&A episodes. I find them very informative. I just started reading *Wired to Eat* and it's such an enjoyable read.

Your sense of humor keeps me engaged unlike many other nutrition books that I read like textbooks.

Robb: Nicki had had people at seminars, they'll walk up and they're like--

Nicki: Robb is so funny. You must be just in stitches all the time. We're laughing.

Robb: She's like, "Yeah, he's an idiot but--"

Nicki: No. I lack the irony genes so this is--

Robb: About 90% of my humor just goes right over her head. I think I mentioned this, not to diverge this too far, but there was, when she was pregnant with Zoe, literally maybe two, three weeks after we knew you were pregnant, she started laughing at shit I was saying and she wanted to watch airplane and some movies that I think are funny.

Nicki: Slapstick that I normally hate. I normally don't like slapstick.

Robb: And she just laughed and laughed and laughed and then Zoe was born and three days later it was gone. This is basically how she schnookered me into having a second kid. She played my ego and she's like, "I'll think you're funny for nine months again." And then it didn't work. Anyway, back to the question.

Nicki: Okay. Back to angel. Let's see. She says: A little about me. I just turned 40, 5'4", 133 pounds and metabolically healthy. My goal is to lower my body fat percentage to 20%. I'm currently at 24%. I started with the keto diet over a year ago and initially was able to lose weight but I find it quite difficult to adhere to and the sugar carb restriction triggered many binge eating episodes that I never experienced before keto.

Now, I've relaxed on the carb restrictions by allowing myself to eat fruits and starchy vegetables and my cravings are more under control, fingers crossed. However, I still face another hurdle in my fat loss journey namely PMS cravings and water retention. I retain so much water during my luteal phase that I can't fit into clothes that are normally loose fitting.

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Logically, I would lower carbs and increase fat to reduce water retention but the problem with that is I also crave sugar, mainly chocolate, and carbs, pretzels. I also find it hard to fast during PMS. I normally do a 16-8 intermittent fast as I feel more hungry. I always gain weight during luteal phase which practically undoes all my previous efforts. Do you have any suggestions on what to do during the

luteal phase? Do we eat more carbs or more fat? Any supplements? Any advice would be greatly appreciated.

Robb: Man, I really think that some blood work both at a couple of different points in your cycle would be really helpful and doing some things like an ASI test or some of these just kind of broad multi point throughout the day hormone profile to just get a sense of what's going on and relative ratios of testosterone to estrogen. It would be really good to know where all of that stuff is. I think that that would be incredibly helpful.

I would use that as a baseline. There may be something hormonally going on. When you've listened to people and work with people for ages, you start getting this, I don't know, it's like machine learning algorithm where like you see this pattern. I'm thinking there might be something going on with the whole eicosinoid pathways and GLA from primrose oil, maybe something that could be beneficial here.

There may be something not quite kicking over properly between the omega three-omega six balance in the body. But again, you have to get in and dig to figure some of that stuff out. I will say that my sense from what angel is saying here is that when she's talking about keto or she's talking about carb restriction, it appears to go in lock step with increasing a lot of fat.

I'm wondering if like using the Ketogains macronutrient calculator, a more protein centric approach, that tends to really help address cravings. The cravings, not always but frequently, emerge because people aren't adequately feeding themselves. They're not providing adequate nutrition at the end of the day. That's the whole protein leverage hypothesis that organisms basically eat to a protein minimum.

I'm just wondering if in this mix, Angel isn't foregoing adequate protein and then defaults to maybe carbier stuff or more fat. I would really get in and use that Ketogains macronutrient calculator. Maybe even bump it to that -- it starts off at like a 0.8 gram per pound of lean body mass. Maybe bump it to one or 1.2., go a little bit on the higher.

Nicki: So many people say that once they started eating more protein their cravings -- Like Adam, we have a testimonial on the blog that we can link to in the show notes. That was one of his biggest things. As soon as he upped his protein, his cravings--

Robb: And just taking this to another layer, we've had a lot of people, good friend of ours that we know up in Seattle that had been eating keto a long time, had a lot of success, and was doing it what I would call right, but it flat lined. And then he

got in and he's been doing carnivore which is eating much more protein, still eating significant amount of fat because it's from fattier cuts. But he's not even necessarily like in ketosis now and he lost more weight and a bunch of other problems resolved.

And so that inadequate protein intake, I mean, Ted Naiman has just made such a strong case around this that you are generally much better off to eat "too much protein" than too little. Yeah, people can overdo even that but in general -- I don't know. Again, I'm getting two spidey sense things from the way she's describing this. One is that there might be something going on hormonally related to the omega three-omega six balance and then the other part is that I think she may be under eating protein.

Again, it would have been so convenient for us if the whole "just eat fat balms, that works so well" because we could have developed a fat balm company and I would have felt comfortable around it. But really, the thing that I'm comfortable feeding people is like well-made jerky and that scene is already pretty well occupied. I just can't tell you, folks, how many times, how many testimonials. It's like, "I was messing with keto, I was messing with this, I kept ratcheting my protein down and my fat up and I just had more and more cravings and I started gaining weight."

And then we just have them use a very reasonable amount, which I did a whole blog post on this. But it's not crazy amounts of protein. It's actually right in line with what Phinney and Volek recommend in their book. The only delta with that is that in this piece that I did, the Ketogains recommendations will start about 10% higher at the bottom and finish about 10% higher at the top as far as total protein intake relative to the Phinney-Volek recommendations.

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And so for a 200-pound person, you're talking about a 20-gram of protein difference per day of the upper end-lower end of the Ketogains recommendations versus the Phinney and Volek recommendations. But again, there's massive overlap. The two bell curves basically overlap massively between the two of them. Yeah, for Angel, those are the areas I would look at.

I would do some blood work and try to get a sense of blood work or if the functional medicine doc is sophisticated with saliva testing, I would dig into that. But I would also really just revisit your protein intake and make sure you're on point with that.

Nicki: Awesome.

Robb: Anything else?

Nicki: I think that's it.

Robb: Check us out, Robb Wolf on YouTube, the Robb Wolf YouTube channel. We're putting out more and more content there. I'm doing a ton of stuff on Instagram, not really pushing it all that much over to Facebook because Facebook is just depressing wasteland of politics and chicanery. I'm doing a lot of stuff over at Instagram. So, @dadsrobbwolf for Instagram. Just do a little search. Robb Wolf, YouTube, and you can check out the YouTube channel. Anything else?

Nicki: And if you guys have questions, submit them on the contact page at robbwolf.com and we'll tackle those in the future episode.

Robb: Cool. Awesome, wife.

Nicki: Awesome.

Robb: Thanks, guys.

Nicki: Thanks, guys.

Robb: We'll talk to you soon.

[0:36:44] End of Audio