

# Paleo Solution - 183

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Robb Wolf: Howdy. Yet again, slow connection kicks-off. Episode 183 the Paleo Solution podcast. It's sunny and warm in Reno.

Greg, what's going on your neck at the woods?

Greg Everett: Also sunny and warm here.

Robb Wolf: Nice.

Greg Everett: And it's not Reno, so we win.

Robb Wolf: And it's not Reno.

No, no. I argue. Although as you pointed out gravel does not burn but that aside, we have good stuff going on here.

Dude, what's new and exciting, so you had to build a fence over the weekend and had zero down time and generally feel like the ass into the cat now. Is that the story?

Greg Everett: I remodelled the fence. We had a fence between our backyard and kind of our side yard which is this big area. So our house was built in the 50's originally so we actually have like a descent sized yard. But this fence was just kind of this odd thing that they put in there, so I chopped the thing in half to like 3 feet high and kinda refaced it and now it looks pretty bitching but that also meant that I didn't sit down for 1 second this weekend.

Robb Wolf: And for Olympic lifters, I hear that's kind of bad stuff, so..

Greg Everett: It's just bad for human beings, generally.

[Laughter]

Robb Wolf: For crossfit scheme hopeful though, that could be great you would just need to do burpees and sumo deadlift high pulls on the minute throughout the entire 48-hour period.

Greg Everett: Fence construction is way too functional to fit into the games. Functional fitness without the function.

Robb Wolf: So what else is new? What do folks need to know?

Greg Everett: Folks need to know that the performancemenu.com is super sweet. The current issue is 100. It is free so you can go right the performancemenu.com. Get that thing, read it all, love it and then subscribe. And for the rest of this month, each week we're doing a giveaway, just a drawing among all the current subscribers. So, if you subscribe today you're still eligible for the next 2 drawings to win some books, dvds, posters, t-shirts, whatever. And then the final week, we're doing a drawing among premium subscribers only and you can win a 500 dollar gift card to the Catalyst Athletic Store.

Robb Wolf: Holy smokes men, right on.

Greg Everett: Oh, you know what else, what else is new is we have our affiliate system back up and running.

Robb Wolf: I was gonna mention that. I was gonna mention that, so people who have blogs, websites, YouTube, whatever they can sign up as a pmenu affiliates, slap your link in there and make cash a lot there right?

Greg Everett: Yeah. You're making 20% so on a regular subscription that \$6 per on a premium subscription, you're making \$20 for one subscription. I mean that's just ridiculous.

Robb Wolf: So, let's say somebody is blogging on olympic lifting.

Greg Everett: It against my better judgement.

Robb Wolf: I'm kind of shocked men, like I never rated that type of back alley deal back in the old days. So somebody is writing a blog post and they want a reference an article that you've been done, they just embed that article in there, drive people to performance menu not only will folks be getting the information that they need but folks will also earn some cash-eesh to spend in a various variety of ways. So, it's fantastic.

Greg Everett: Various variety of ways, yes.

[Laughter]

Robb Wolf: Awesome. Well that's a good lead in for our show sponsors. We've got the performance menu which I think Greg and I have muddled our way through that about as effectively as we can. We've got [frontdeskhq.com](http://frontdeskhq.com). Now, folks get a little bit confuse, [frontdeskhq.com](http://frontdeskhq.com) is the website but Frontdesk is actually the name of the business, just as a point of clarification.

But this is a fantastic business management software. You can take point of sale, you can track inventory. It's just the bee's knees. It does everything. We use it at NorCal. I think Nicki is actually doing a phone call with Greg and Amy at Catalyst today to get you guys cranking on this thing. All the cool kids are using this. But seriously, it's a fantastic...

Greg Everett: Honestly, I'm pissed that we're not using it yet.

Robb Wolf: Yeah.

Greg Everett: You know the reason why we haven't got on it, coz we've been so busy and haven't been around to do it.

Robb Wolf: Right.

Greg Everett: Right.

Robb Wolf: It's just super simple, the interface is super simple. You don't need to go to a special school or university offering to figure out how to use this thing.

**[0:05:03]**

Greg Everett: Whatever could you be talking about?

Robb Wolf: Yeah, exactly. I mean anything from dog walking to hair cutting, automobile repair, if you need a front end back end interface client interface. The whole thing can be run either mobile or on a standard desktop but it's pretty cool and they have a ton of new features rolling out all the time. So check out [frontdeskhq.com](http://frontdeskhq.com).

If you missed the podcast episode with my gorgeous wife, Nicki Bioletti, that was maybe 3 or 4 podcasts back. That one and the Dr. Parsley podcast have received the highest downloads that we've had in a long long time and also a lot of commentary that those are the best podcast that we've had in a long time. So, check those out if you run any type of a small service based business.

Dude actually, I keep saying small like when you have a gym of 500 or 600 people, I don't necessarily consider that a small business anymore. Although, I guess you're under 50 employees which is still what they can consider small. But it's not small in my mind because I don't have all that complex of a mind. So, check out frontdesk.

Wellfood.com... Well Foods is the new incarnation of Paleo brands and Evolve Foods. John Welbourn, Kate Welbourn are kinda spear heading that effort. We have some really cool products rolling out with that scene. Also, Well Foods has an affiliate programs so you could be making money left, right and center on all of the offerings around here.

Our final podcast sponsor, I have no idea how you would make money off of it. You would mainly be giving money to these people because this is the Bunny Ranch, bunnyranch.com. It's a brothel. They have porn. Use your good judgement if and when you navigate to the website but Dennis Hof and the gorgeous gals at the bunny ranch were kind enough to sponsor the podcast and I think that's just bad ass, so check out bunnyranch.com.

Greg, what do we have today?

Greg Everett: We have questions.

Robb Wolf: These are good ones. Squatchy put together a good one. I think this could be a spicy little meatball.

[Laughter]

Greg Everett: Okay, meatball number 1, Metformin and insulin sensitivity.

Robb Wolf: You didn't even wanna talk. Get me the f out of here as quickly as possible.

Greg Everett: Oh, boy. Okay, Jobeth says, Robb thanks to all your free information on a Paleo lifestyle. I have now largely mitigated my PCOS symptoms, the only thing left is about 15 to 20 pounds which is only once been previously defeated with a metformin intervention to return again after this continuation of meds. You long ago, had favourable thoughts on metformin, but I have more recently suggested that forcing insulin sensitivity, maybe defeating an important protective mechanism. Unfortunately, I haven't been able to piece together your expressed concerns in a cohesive manner.

Neither has Robb.

Robb Wolf: Yeah, neither have I.

Greg Everett: Could you elaborate further on the potential concerns and mechanisms associated with forced insulin sensitization particularly metformin but perhaps cinnamon is relevant as well in both pregnant and non-pregnant persons.

We can't even specify women?

Where metformin is used in PCOS treatment, continuation is often encouraged during pregnancy. And I know that insulin and blood sugar issues during pregnancy are somewhat idiosyncratic. Despite having normal insulin levels, around 80 fasting blood sugar with spikes to 120 to 130 with the paleo diet, and normal hormones, testosterone, progesterone, estrogen, FSH, LH, metformin is the only thing that has helped me lean out.

My only negative indicator of an insulin issue was a 5.3 A1C. I can't imagine why met works for weight loss without strong indicators of insulin insensitivity and I wonder if this is my only hope for achieving the body composition I desire acknowledging met's drawbacks. I greatly appreciate your insights.

Robb Wolf: Okay. So, one thing really quick just because again my brain is simple and it's hard for me to hang on to multiple items here. Chris Kresser wrote a great I think maybe a 2 part kind of a discussion of A1C and the limitations of A1C as a blood test in folks that are eating kind of on a lower carbs side of things. A1C, typically shows us a historical cross section of like a month to 3 months of blood glucose levels with the idea that glucose is secreting on to our body's protein so that a given specified rate and that the red blood cells are being cleared at a specific rate. And so this thing should be a really valuable diagnostic tool.

The challenge is that when people are eating lower carb, red blood cells actually live much longer. Which that should be kind of interesting in telling just in and of itself that if we're maintaining regular insulin levels. We're not burning through a red blood cells. But that's just one thing, so your A1C can actually look higher than what it really is, and because the red blood cells are living longer than normal. And so because they live longer, then they're going to accrue more advanced glycation in

products. So just use the A1C with a little bit of those thoughts in the back of your noodle.

**[0:10:13]**

So the concern for me about using metformin and this is a completely theoretical on my part. I have no data to support this idea at all. It's actually just a little bit of a nervous nelly hand wringing kind of story but when we look at the kind of evolutionarily conserved features of what insulin resistance is, particularly in an overfed state what's happening is that when we're funneling lots of calories through the metabolic pathways, through the mitochondria, we create reactive oxygen species.

The body can adapt to this, it's actually in punctuated doses of hormedic stressor and that's a good thing. As is some fasting is kind of a good thing every once in awhile, but when we're chronically overfed, one of the primary adaptations is becoming insulin resistant so instead of pumping more nutrients through the mitochondria creating more reactive oxygen species overwhelming are endogenous anti-oxidant kind of systems we're sticking these calories into adipose tissue which is largely inert instead of imagine like if you had like a wood burning stove and the stove only could handle so much throughput before we started having problems instead of just pumping more through that stove and creating some sort of collateral damage like a chimney fire or something like that we're just stacking the wood waiting for a time when we're not pumping so much wood through then we can actually use some of the storage if that's at all a helpful analogy.

But what metformin does is it increases our insulin sensitivity both in the adiposites and in the muscles and so my nervousness is that we could be taking individuals that are overeating that are experiencing this increased inflammatory kind of response from the overeating situation, the mitochondrial stress and the normal body response to which would be insulin resistance in storing body fat which is good and adaptive up to a point, what if we are cutting that off by artificially sensitizing our insulin receptors allowing more nutrients into the cells that then need to effectively be burned, that need to be pumped through the mitochondria?

So this kind of a guess. I don't know that this is a fact. I have not actually taken the time to see if there's any type of indications with this. If some of the smarty pants wanna look around out there some Google searches could be metformin mitochondrial stress, metformin anti-oxidants status. But again, this is gonna be dependent on people who are overeating.

So I just don't know what the full story of that is. It's just kind of a guess and I guess I threw it out there is a little bit of a mitigative kind of element because I've been so excited about metformin because it tackles a bunch of different problems that we see in a metabolically broken. It enhances the liver's ability to not be negatively affected by lipopolysaccharide which is a consequence of a small intestinal bacterial over growth or gut permeability. It also helps deal with gut permeability and it also helps deal with insulin resistance.

So it's a nifty drug. It's pretty safe. I think that people can get a really really remarkable benefit from even low dose metformin consumption; particularly people who are shift work I think could benefit greatly from this. So, that's kinda the back story on all this stuff. It interesting to me that you are definitely seeing some sort of significant body composition change with the metformin and this is one of those interesting examples where you know, we have some camps out there that are saying body composition is only calories.

Calories are the only thing that matter and then we have another camp that's saying, insulin and hormones are the only thing that matter. And clearly, there's an interface here and it's borderline, I'm gonna say it. People can just suck my toe, it's borderline retarded to paint this really overly simplistic picture. You know I've done it in the past, so I stick myself right from the damage camp but you know at the end of the day whenever we consume food or even if we don't consume food, we change our hormones and the way that our hormones change will affect the way that we partition nutrients.

So it's a very yin and yang kinda deal like we need to understand both the caloric input element and the hormonal kinda milieu element to this thing. But it's interesting that if an individual takes metformin, they lean out. Then clearly we do have some sort of a hormonal disregulation that's occurring here. If the person is lifting some weights and doing some walking maybe doing a little sprinting, they're otherwise eating moderate carb kind of Paleo approach, it's not so low carb that we are seeing some metabolic insulin resistance because we're heading into kind of ketosis kind a state.

**[0:15:38]**

Then there's something else there and this is where our pool of pharmacopeia can be really helpful particularly with a drug like metformin that is actually pretty benign but also helpful in a various

variety of ways and as a background with that, where was it that we have that? Did I write the various variety of way, but this was a performance menu article?

Greg Everett: I don't remember. It was some kind of promotional thing.

Robb Wolf: Okay. Okay.

Greg Everett: I think.

Robb Wolf: Or maybe we read it somewhere and somebody said a various variety of ways or something like that. And so that's, that whole gig. But I think that it's really interesting.

One of the things that I've done when I've been doing some of the metformin research is kind of poking around the body building and fitness blogs like the fitness competitor blogs and just doing some poking around and what's interesting to me is that metformin is not typically one of the drugs of choice in physique competitors' arsenal. Thyroid is, insulin is, testosterone growth hormone, all these things.

But metformin is not and I think that part of the reason for that is that metformin is none selective and that it increases insulin sensitivity both in the fat mass and in the muscle mass. And so I think for the vast majority of people, metformin is probably not a real potent agent of body composition shift you know like favourable body composition shift. B

But in an individual that does have some sort of a metabolic situation where they are legitimately insulin resistant it looks like we some people that experience an interesting improvement in body composition. So, it's another one of these situations where there's a lot of factors, there's a lot of moving part it's important to understand all the mechanisms and then get in and experiment.

So all of that stuff said, I guess what was the gal, Jobeth's question, if these things seems to be working for you, and you feel good with the metformin and you seem to lean out a little bit, I would play around with that. And maybe you could get some Orac or not Orac but some superoxide dismutase.

Basically if you could get some blood work just trying to establish what your anti oxidant status is, maybe monitor liver function and stuff like that.



I don't know what type of a mitochondrial stress? Blood test, we could do maybe we could put some thought into that. But those are just kind of my concerns but it sounds like you're getting a really favourable change. And so long as you are not using the metformin so that you can overeat more food, then I think you're probably good to go. It seems like it would probably be a pretty safe thing to use the minimum dose that you get a therapeutic effect out of that.

But it's really interesting situation and again metformin is intriguing to me and kind of validating of this whole kind of Paleo revolutionary biology approach because the way that metformin is working, is attacking a multitude of issues in a very synergistic way and it's the same synergy that when we are metabolically broken, we have all these things occurring - insulin resistance, liver dysfunction doo-doo, lipopolysaccharide and intestinal barrier dysregulation.

Greg Everett: Yeah. Woo-hoo.

All that stuff you said was exactly what I would have said if I had answered that question.

Robb Wolf: And then you could have probably answered it in like 30 seconds instead of my meandering attempts at something good, so..

Greg Everett: It doesn't take me a full of 30 seconds to say "I don't know."

[Laughter]

Robb Wolf: Maybe that's what we should just shift more that direction.

Greg Everett: Nah. Okay. Ox bile question. I haven't heard one of these in a long time.

Katie says I have read up on your suggestions for those of us without a gall bladder should take ox bile supplements to aid in digestion. Back in 2004, I also had the gastric bypass surgery. I'm wondering how that comes into play with the ox bile. I started 100% paleo food, not exercise yet about 6 weeks ago. I'm taking 2 ox bile pills with each meal and have no relief.

With my intestines being re-routed so no stomach acids either, I'm not sure I will feel that "warming sensation" you talked about. I'm not sure if upping the dose is safe. Would love your thoughts, suggestions, help. I'm down 16 pounds, 80'sh more to lose. And seeing great improvements in

blood sugar, blood pressure, fibromyalgia and Hashimoto's issues, the digestion is worst.

[0:20:20]

Robb Wolf: Gosh.

Greg Everett: Was an ox bile really only for fat digestion?

Robb Wolf: Yeah, it's just for fat digestion and for folks that have had a gall bladder removal then it is can devilishly hard to get essential fats, fat soluble vitamins, all that sort of stuff. And then when you throw in a gastric bypass... the interesting thing about the gastric bypass is that the literature is pretty clear that it is almost impossible to eat a whole food diet and meet basic nutritional requirements. You've got to take some sort of a nutritional supplement to meet basic like vitamin and mineral requirements.

So the gastric bypass is just a double edged sword. It seems to help people in some circumstances. There's a lot of morbidity and mortality associated with the surgery itself and then on the back end of it, we have some challenges like when you say that the digestion is worst I'm guessing that we're talking about probably like a hydrochloric acid production and maybe some gas and some bloating.

What you may need to do and this is the irony like they do the gastric bypass to try to limit the amount of food that you eat but then what you are force to do to try to improve your digestion is highly highly process your food and so like making soups and stews and curries, pureeing that stuff, chewing the food very well. You could definitely talk to your doctor about using some sort of a betaine hydrochloride product.

Now Foods super enzymes is a pretty good product. Paleologics adaptagest is a good product that has both the betaine hydrochloride and the ox bile in it. But you definitely need to work with your doc on that. When you start getting into the gastric bypass surgery realm like there are a lot of moving parts with that, a lot of potential problems. S

So I would oddly enough limit fruits and vegetables, stick more with easily digestible food, cook those foods well. Think more soup, stews, curries, pureeing to help with the digestion. The ox bile should be good to go kind of regardless. All that it's doing is enhancing your innate ability to absorb fats.

And then from there, I think it's trying to make your digestion as strong and make it as easy on yourself to digest the food that you can and again like working with your doc or finding functional medicine doc or somebody in the Paleo Physicians' Network that knows what they're doing with this stuff and working with that individual, I think could be really helpful. But those are kind of the considerations here.

So the ox bile shouldn't really be a concern but it's definitely not going to help on the more northern element of the digestion that's related to stomach acid production.

Greg Everett: Okay. Let's see here. Trace minerals for detox. Michael says, Robb, have you had any experience with Body Bio's approach to supplementing trace minerals based on taste test of each mineral. I recall Poliquin discussing zinc tally test has a relative zinc deficiency index but this was the first I've seen for more comprehensive approach. Here's a link to the test kit and product and video explanation.

Robb Wolf: Yeah, the zinc needed like the tally tests are really interesting in going by taste although Greg, both you and Gareth Smith, I think kind of gut into the deep end of the pool with this because you feel like you overdid the zinc and you just never tasted the zinc. Right?

Greg Everett: Oh yeah. I never once have any response other than feeling like the absolute complete shit with overdoing it on zinc.

Robb Wolf: Right. Right. So, here again I think that. So the theory with this stuff is that you take something like zinc or like molybdenum or whatever the thing is that you're theoretically checking to see if you were adequate or deficient in and you take an aqueous solution of one of the salt of these metals or these minerals. And if you have adequate levels then it's going to taste like... when you take this stuff and hold it under your tongue it's gonna taste like you're chewing on a crump bumper kind of gig. So you spit it out and like okay I'm good.

But there's not much in the literature that talks about this as any type of like a validated situation where like people are run. They takes some blood worked, they run them through a tally test and there are correlations between tissue or serum levels of how responsive people are to these things.

So I mean it's very observational which again because of some of the evidence based medicine writing that I've been doing there's a ton of stuff out there that works that just hasn't been studied. So the fact that

there's not material on it doesn't mean that it doesn't work but it also doesn't mean that it does work.

And then if this stuff does work, there is the potential here that I've seen in a couple of people now that it doesn't work for everybody. So you could be supplementing with zinc or some sort of another metal that is important for health but you don't want to overdo it and if you are not responsive to it, if that tally test doesn't work then you could potentially overdo that item.

**[0:25:55]**

So, it's interesting but I think that there are still a few moving parts to it that are a little bit concerning. You just want to be a little bit aware that there is a precedent for people overdoing the tally test. And so I would just be a little bit careful about how you tackle this. And maybe something to shoot to these folks and say so there have been an examples of folks that have overdone this. So how do you address it? Like how do you make sure that somebody is not going to overdo this?

Greg Everett: Oki doki. All right.

Robb Wolf: And finally a training question.

Greg Everett: Greasing the groove. Tyler says, Hey Robb and Greg, first off your podcasts are gospel. I'm at episode 140 and have listened to everyone from 70 and up, front to back.

I have a few questions about "greasing the groove" style of training. I just recently listen to a question regarding lifting everyday but at a low volume. For example, choosing big compound lifts such as cleans and bench presses and performing 2 sets of five of these types of lifts and performing this work out every day with no need for rest days. I believe the goal of this training was to steadily and slowly increase strength without any major soreness or overall fatigue.

Question 1. Did I understand this correctly that little volume worked but done every day is a legitimate training schedule? Question 2. Aside from a recovery week every 3<sup>rd</sup> or 4<sup>th</sup> week, is a program design like this is safe and reliable for providing good strength gage? Question 3. If the question 1 is true, then what is a good upper limit to shoot for this amount of training that can be done each day to minimize elevated cortisol if this would even be an issue?

I'm currently interested in this style of training because I'm a severe gymaholic and feel the need to lift everyday even if it's in small amounts. My main goal is to gain strength relative body weight to generally just feel great day in day out. Lastly, I'm 20 years old, 6 feet, 155 pounds with a lean build.

Dude, if you're 6 feet, 155, you don't need to specify that you're lean.

[Cross Talk]

Robb Wolf: I would say so.

Greg and I would call it gone.

Greg Everett: Yeah. And eat a paleo diet of mostly meats, veggies and safe starches, yams, sweet potatoes, bananas, etc. Just to give you an idea of how I might recover from heavy lifting. Hope this gets on the podcast so you guys can do what you do best and school the listeners on all your paleo and strength training know-how! Thanks a ton and looking forward to episode 1,040!

Oh, god.

Robb Wolf: Good god, I'm not.

Greg Everett: The thought of that just made me shit my pants.

Robb Wolf: Seriously. Unless we just do some fancy accounting like opening a new check book and we're like, okay, we're on episode 1,000 now, so..

Greg Everett: Okay.

Robb Wolf: So his description of like the grease to groove, power to the people thing seems pretty accurate. I mean the way that Pavel laid that out. There's some kind of undulating periodization with it, where you push the weight up and then dial it back and not really that much of a focus on deload because of the low volume. I would say it's effective, but I mean tons of things are effective I have a tendency to like this you know train highly, frequently but because I've been doing more jujitsu, I've gone down to 1 day or even two... 1 to 2 days a week, I'll do a press, upper body pull, and some sort of a lower body movement like a dead lift or back squat or walking lunge or something.

And interestingly enough, I just tested some maxes the other day and I've been only training for 1 or 2 days a week and the strength has gone up a lot, and so I'm doing some jits. So I'm getting some good conditioning from that and that's kinda like almost like a high rep body building kinda deal because the amount of work that I do in there. But then I really curtailed my volume and have just kept the intensity kinda high.

And I did great on that and so I think Louie Simmons and a ton of other people have said, "Everything works, nothing works forever" so I think that this is a way to kinda slice and dice thing but it's not the only way. And sometimes for the super skinny gym-aholic you're actually kinda well served to do, 2 maybe 3 days a week do some heavy lifting, do some big eating and stick some meat on your bones.

Greg, what are your thoughts on that?

**[0:30:13]**

Greg Everett:

The first thing that stands out is two sets of five. If this is what you're looking to do I would not be doing fives. I'd probably be doing singles, doubles, and triples because I think you'll get more out of the frequent lifting if you stick with those low reps and the higher weight because it's more of a neurological based improvement.

So you should get a better response with that without as much as a muscular damage which is creating the soreness which is kind of stiffening you up and making you not want to train everyday and kind of taking a little more out of you so if you can keep the reps down the total volume. Now it's not just the total volume. It's the reps too and yeah Robb already kind of addressed question two about a recovery every third or fourth week.

You probably don't really need to do it like that because you're not... I mean with a more traditional program you're really beating the shit out of your self for three weeks or so and you've got to back off to bounce back and whether it's entirely or partly depending on where you are in the cycle but with this stuff you shouldn't ever get buried that far. So you shouldn't have to back off too much.

I would play it more about your day to day. Do I feel good today or I'm going to push the weight up? If I feel like shit I want to keep it really low and do three doubles or whatever you're doing here and in question three what's a good upper limit this is totally going to depend on you. You could probably do quite a bit at six feet 155.

Robb Wolf: And 20 years old.

Greg Everett: You could probably just go to town on this stuff. So again I would kind of play it by year or play it by leg as we say here. Start with... well you just mentioned bench and cleans... I mean if you are going to bench I guess that's cool but maybe press, push press, clean, dead lift, squat, that sort of thing, just rotate day to day maybe two exercises and pretty much just see how you feel.

Take good notes and keep ramping it up to the point where you feel like you are feeling good everyday when you're come to the gym or mostly everyday or you're still going to have days where you don't feel great and you seem to be making progress and then don't go beyond that. Did you just mention this minimum effective dose? That's kind of a good way to think of it you don't want to go nuts right out of the gate.

There's no point because then you're just going to have going nuts for the rest of your life. It's like cocaine or heroin you know what I mean? If you start small you have to kind of ramp up but you don't start with three grams a night because then fuck man, that's going to be an expensive training habit.

Robb Wolf: Until you die.

Greg Everett: Well yeah but what does that have to do with anything?

Robb Wolf: That's true enough.

Greg Everett: Okay. Making gains with a busy schedule. Larry says hi Greg and Robb, as a weightlifter/paleo diet-er/internet nerd, I am a big fan of the work you both put out. My question is about how to adjust training and diet when recovery is not optimal.

I am a year into weightlifting. I train 4 times per week and my best lifts in competition are 104 and 131 at 87 bodyweight. I have been making steady gains over the year until now. I am in my third year of medical school and just started interning at the hospital.

Yeah you're done.

I used to get 8 hours of sleep but now I am forced to get by with 5-6 hours. I am missing more reps now and my strength does not seem to be increasing. Obviously my education is my priority, but if there are

changes that I can make to my training or diet that would allow me to continue making progress as a weightlifter I would love to hear them. Should I decrease my training volume and frequency? I am eating paleo but I am not counting my calories and macros. I just eat until I am full.

I look forward to hearing both of your suggestions.

Well I found your problem. Where is it here? Education is my priority. You got it all backwards. Weight lifting should be your priority. I mean it's just med school. Ack. Anyone could go to med school. Not everyone could be a great weight lifter.

Robb Wolf: Yeah you can skip the appendectomy day and be fine. I mean how often does an appendicitis pop up?

Greg Everett: Seriously. You'll have assistants and staff in the OR. It's not a big deal.

Robb Wolf: Yeah.

Greg Everett: All kidding aside yeah you are going to have to dial back your training and kind of dial back your expectations too. It's not even justified to six hours of sleep but I've never been to med school but I get the sense that it's pretty freaking stressful and so you are just going to be beat down all the time and so adding the training on top of that is a lot to deal with so I would have a very loose kind of idea of what you want to do in training and remain really flexible...

**[0:35:13]**

I mean that more mentally than physically. Be willing to adjust your training based on how you feel day to day and on the days that you happen to feel kind of saucy then you push it and you go heavy. On the days that you just feel like shit you don't beat your head against the wall and try to make these lifts that you just are not going to make that day. If you're missing more lifts than you're making there's obviously a problem there in your expectations and so I would probably see you say four times a week.

You can probably keep training four times a week but you might only have two of those that you expect to kind of go heavier in and the other two are more kind of movement based where you're snatching and clean and jerking or some variations thereof but you're keeping it a little lighter. You're working on speed or technique, things like that so that you



do have a little more left on the tank for those heavier days and you have some in the tank for actually remembering things and not killing people.

Robb Wolf:

You know the only other thing that I would maybe throw in there is particularly after we had Doc Parsley on and we think about the mechanism of recovery as it relates to sleep, those are reality that during this period of time you're just flat not going to be recovering. You're just not. From the mental fatigue, from the learning, from physical activity, depending on where you are on the need for sleep scale and how old you are and how much additional time like you need to study a lot of you're one of these people that can show up to class and pretty much absorb and you're done.

So there's a lot of moving parts there but if you're at a spot where you're legitimately getting five to six hours of sleep a night you're just not really going to recover. So for me I might even recommend a more conservative approach to this which should be maybe two days a week of training and then as much as you can getting outside walk, de stress, stretch, do a yoga class or something.

You've got to block a time that's going to suck, that you're athleticism is not going to be stellar. Again unless you're just one of these people that can just show up and you absorb all the material and you're top of the food chain on all that but if you're just kind of an average schlep like myself Greg could have probably done both med school and got his pilot's license at the same time but I couldn't have done that but I think you probably just for sanity and health and all the rest of it might even want to go a little bit more conservative and a lot of down time.

To the degree you can have down time and down time being like doing some lifting, getting out in the sun, doing some very unstructured activity and Dan John has an interesting perspective on this which is when you are living in a very losy goosey period of your life then you should probably have some highly structured training to button things up and provide some structure in your life.

When you are living in an uber structured period of your life then your training maybe shouldn't be as structured. It should be more kind of play based and just fun and you're not so PR oriented and stuff like that and so you might think about opening some stuff up on the training side and making it more like walking, maybe a little body building here and there and stuff like so that it's just low stress, you go instinctually by how you're feeling and always always keeping in mind that your recovery is going to be impacted for a long long time.

Greg Everett: Yep I concur.

Robb Wolf: So yeah.

Greg Everett: Okay. Oh good politics. Current politics limiting paleo what to do?

We're already talking about nutrition. Maybe next week we can talk about abortion. Geez.

Robb Wolf: Yeah we can cover all of this.

Greg Everett: Alex says hi Robb. I am entering grad school this year for health administration. There is a lot of talk about how physicians and researchers can help the spread of paleo through resources such as the Paleo Physicians Network. What do you see as the role of administrators in public health? In particular, this applies to those that did not start out in medicine who do not have a strong medical background.

Clearly the politics and money-making opportunities for certain areas of the food industry are a serious issue and limiting factor. On the broad scale, this aspect seems to be typically outside the reach of clinicians. I know the answer to this question can and will be lengthy, so what is just the next step that administrators in public health, either those who are experienced or those just entering such as myself, can take to continue the spread of paleo?

I have made this career choice mainly due to the positive impact that you and the rest of the ancestral health community have had on me since coming across all of this one year ago. Thanks for everything.

**[0:40:08]**

Robb Wolf: Oh man instead of it being a long answer it may be a short answer like I don't... This is so situation specific like I don't know exactly what an individual could do in a hospital administration story. I get literally and Squatchy could probably give me an exact number but I probably get 100 to 200 emails a week from people who ask "I want to help, Paleo changed my life, what do I do? Do I become a doctor? Do I become a trainer? Do I go into policy? What do I do?"

And I just don't know because I don't know a person's skill sets. I don't know what they're really deep lying passion is and then you know within the administration story it's been really interesting with the risk

assessment program. I don't know why. It's Reno, Nevada. We're supposed to be a throwback which it still kind of is. You just need to drive around certain areas of downtown and you're like holy smokes.

But the reality is that we have the mayor, the chief of police, the chief of fire, the old guard medical community, some elements of the medical school and basically all of the city council 100% behind this program and virtually not the medical school specifically but chief of police, chief of fire, the mayor, a bunch of the city council, a bunch of the medical scene here are all eating paleo, they understand low carbohydrate, they understand the benefit. We've got really good buy in and so you could really get something done with that.

So my approach though has been mainly the focus on the market side of this like the Paleo Physicians Network, like the certification that's going to roll out where we certify coaches and trainers, allied health care providers, doctors, researchers in how to do this stuff and everything from the lipidology to the autoimmunity protocols, the full evolutionary medicine kind of picture because I am completely suspicious of not invested in "the system" because we just inevitably hit these kinds of glass ceilings or these log jams or we make some progress but then we end up just fighting these fights.

And so part of what we're up to right now is we're in a grant writing process trying to get some money from the government from a DoD type source to look at this stuff specifically in some more military oriented kind of situation. It's kind of oblique but I have to be oblique because we're still in a process of doing all these stuff.

And some of the members of our special health team are really fired up about this because they really still are very bright eyed and bushy tailed about academics and about if you could get a grant then that's legitimate and we need legitimization and all that and as big a prick as he is Greg Glassman taught me a lot of stuff which one of those things is if you make something successful and make it big then you can basically right around with the giant finger in the air and be like fuck you to all these people who are telling you you can't do it.

And so I'm just not all that fired up about investing in much in the administrative scene because we just end up hitting log jams like where and when we get somebody like a hospital administrator or somebody in the government that's interested in what we're doing god that's awesome and those people should have their name put on a plaque and

thank you for giving this a shot and actually thinking about trying to make the god damn system better.

But we had some folks that are... we had a big discussion with the Nevada Department of Health and we have some people who are high up in that scene but not high enough up that they can actually ram rod policy through the system.

So we had some great discussion with these folks. We showed them all the data, we showed them the return on investment. They took this and kind of went shopping around to their uppy yups and the uppy yups are like "Yeah. This doesn't really make any sense. It completely flies in the face of the food pyramid information. We're not buying off on this at all."

And so some of the internal workings or I guess the my plate now or whatever it was but it didn't sniff like what the government is recommending. So they're like "Yeah. We can't do anything with this," and it's not a matter of they can't. They just chose not to. It's something new. They would have to think about it. They would have to learn. They would actually have to do something to earn their pay check instead of just writing out the governmental dole so they don't do anything.

**[0:44:52]**

And you know also to some degree there's another piece to this too which is if somebody in a governmental position or a high ranking position hospital or whatever if they say "Hey folks we've been doing this wrong. We need to change things." Then inevitably part of the backlash that occurs is like well why were we doing it wrong and whose head needs to roll because of doing it wrong which is kind of fucked up.

It's like "Well okay we were doing it wrong. Let's just do it right and move on. Okay the joke's on us. We did it wrong. We killed a bunch of people by giving them statins and doing cabbages on them and stuff like that when we could have just given them a low carb diet and they would have been fine. Jokes on us."

So there's a bunch of cover your ass activity that occurs in these organizations. So there's so much inertia. There's so much cover your ass. There's so much laziness. I just... and I don't want to sound negative because I'm not. I'm actually more positive and optimistic about this stuff than I've ever been but it's mainly because I think we've got a platform that the return on investment story.

There was such a great piece out of the Globe in London newspaper where they were talking about obesity is a huge predictor of dementia, Parkinson's and Alzheimer's which we've known this for a long time but this is becoming very very clear in the mainstream media and in academia at large.

And so if we with a risk assessment program can really establish or validate that this paleo evolutionary medicine approach can reverse metabolic arrangement and its associations with obesity and type two diabetes and we know that that is a precursor to dementia then when we are calculating our return on investment story it's not 33 to 1. It's more like 100 to 1 or 200 to 1 because it's a multi bag story.

We're not just addressing cardiovascular disease and type two diabetes. We're also addressing dementia, Parkinson's and Alzheimer's. Oh and by the way that also applies to reproductive issues. Oh and it also applies to a host of different cancers - breast, colon, prostate, astrocyte brain tumors glioblastomas.

So we've got a really really firm footing but I'm still pretty unimpressed with what's going to happen in these stodgy organizations. So maybe something... so all of that stuff said you try to affect the change that you can change but I also get tons and tons and tons of emails from people who are in this middle management positions or they work for the State Fire Department or a hospital or whatever and they're like "I'm trying to help. I'm trying to change but there's all this inertia. What do I do?"

And I don't know what you do. I don't know. Maybe we need to start doing self immolation and setting our selves on fire outside of these hospitals to get somebody to take notice. I don't know and so that's why I've just completely focused my efforts on this free market approach to this and try to build...

If we get a system where we've got a couple of thousand gyms, a couple of thousand clinics, a couple of million people doing this thing and then we create a health insurance company that's built based around health savings accounts and personal accountability and all that stuff then we're going to have something that's going to destroy everything else out there. There's no way that they'll be able to compete and that's my plan. That's why I'm hardly blogging or not online all that much because I'm just killing myself trying to get all that shit going.

So Greg is that about as wandering and oblique as we could possibly get? What are your thoughts on that? I don't know what else to say. I wish I

could give everybody a job description and a plan for how we could rally everybody into this in an effective way but I just don't know right now.

People have to sniff around and figure out what their strengths and weaknesses are and try to position themselves in such a way that they can effect some positive change whether that's blogging or running a gym or going to medical school or going to a PA program or whatever it is and then be willing to come in and circle the wagons when that time comes and create this alternate system because we're not going to get buy in from the mainstream system even when that whole thing implodes due to economic pressure.

What that implosion may do is create a really amazing opportunity for us to come in and sweep up the broken pieces and put it back together in this long term sustainable way but nobody's going to fucking let go of their power and their control right now. There's too much to be lost including just face and status.

Greg Everett:

Yeah I really have no idea. I think I'm a bit more cynical than you are when it comes to that stuff. So people probably don't want to hear my answer.

**[0:49:57]**

Robb Wolf:

Well I'm cynical on the established side of it. I'm very very optimistic on what we've been able to do in this market driven alternate track kind of scenario and cross fit's a great example of this stuff. It's been wildly successful. It provides a lot of what people need. It's unfortunate that there's been so much push back about just trying to create some higher standards of programming and the nutrition and all the rest of that but at the end of the day who fucking cares with that?

We're still servicing all the gyms anyway whether we're inside or outside. So that ended up not mattering at all and that's the irony even with that just as on the side. Glassman didn't even learn his own lesson which was the good information is going to find it's way its way through and so he tried to silence kick out which is ironic because there was a bunch of fear related with us creating an alternative brand and so you kick the people out. What he should have done is offered you and I a 1% interest in crossfit.com and fucking get us in but whatever. That's his mistake not ours.

But all that said there's a great model with things like cross fit where if you are providing a service and providing something that's legit and very

very helpful and maybe you don't have all the answers but at the end of the day the clinical implementation of it helps people far more than it hurts them then you're going to get something done. You're going to get some really amazing buy in or at least you have the opportunity. You could obviously shift the bed on the whole thing but I think that there's a great opportunity there.

Greg Everett:

Indeed.

Robb Wolf:

So I guess that was a long answer.

Greg Everett:

Yeah I was going to say that was the longest short answer I've ever heard.

Robb Wolf:

Yes. Yes.

Greg Everett:

Well this one will be a short one since you already covered it in great detail.

Robb Wolf:

This one will definitely be a short one.

Greg Everett:

Ben says I love the podcast; keep on rockin'. Check this out: and it's a YouTube link I assume to the TED Talk. It's a seemingly scientific argument debunking a paleolithic dietary lifestyle, 20+ minutes of archeological discussion that in my opinion completely misses the point. It seems like the speaker didn't do any research beyond looking up images of paleo books for the Power Point. Please agree, briefly explain, and move on to a more interesting question. I hope my man-crush on you two is palpable.

Robb Wolf:

Oh it is incredibly palpable. We appreciate it. I did a really pretty long thorough analysis of the talk like time point by time point and then I also did a completely mad raving podcast on the topic as well. So that thing's been covered in stereo basically to two different varieties on it. So go back, check those out. Debunking the paleo diet is the name of the YouTube piece.

Given the fact that I'm not deluged by Twitter and Facebook questions asking me if I've seen this thing now then I think that we've kind of gotten the word out on that finally.

Greg Everett:

Yes. Okay.

Robb Wolf:

And the next one is kind of the same deal. It deals with the red meat dealio.

Greg Everett: Manuel says hi. I love red meat. As much as possible, I eat grass-fed beef instead of grain fed. I know that there have been many arguments against consuming red meat as the saturated fat and cholesterol may contribute to heart problems, so they say. And I also know that you guys and others have responded to the arguments against red meat with good points in support of red meat.

But there's a brand new study in the New York Times implicating gut bacteria with carnitine obtained from eating red meat to the risk of getting heart disease. Can you guys comment on this? And should we then be cautious about eating red meat now based on this new research? Here's the link.

Robb hit it.

Robb Wolf: So Stephan Guinea, Chris Masterjohn both did a really good analysis of it. The interesting thing with this... so I'm just going to refer folks out to them. They did a great job on this. This deals with the TMAO molecule and that supposedly being related to atherosclerotic plaque propagation. The interesting thing with this is that this research came out, the researchers did the media circuit.

They went everywhere. They were on Science Friday, on MPR. They were playing this thing up as the gospel and then even people who are pretty anti meat went in and looked at the research and they're like you can't draw these conclusions from what you've stated here at all and it was really severely criticized in the methodology.

It's an interesting work but the conclusions entered from it were completely erroneous and then it's really interesting what we discovered because some of the people on the editorial board for the paper there was actually...

So the basics of it is that there was a claim that consuming meat and then it also extended a different paper claiming the same thing with egg yolks said that if you consumed these foods that were rich in carnitine that the carnitine would convert to TMAO and TMAO was somehow associated with the increased atherosclerotic plaque formation.

**[0:55:10]**

But what was really interesting was that fish because of some of the molecules that are already present in fish fish ended up producing like a



five six times greater TMAO production than red meat didn't but they didn't published that because fish even though the borderline vegetarian scene they're always like "Well fish is better for you."

But if they're trying to create a case that TMAO was bad but yet fish produces more TMAO then fish should be even worse than red meat which clearly the whole thing is a joke and they went in with an idea in mind already that red meat is... they said it in the paper that red meat is known to be an atherosclerotic plaque former and associated with cancer and all this stuff and none of this stuff is true.

The worst thing that I could implement on red meat is that it's an iron source and that possibly in some oxidatively stressed individuals which means that they're probably eating shitty and have high stress and all the rest of the stuff that some red meat may not be super beneficial amidst an already sick broken diet but it's because of the iron content. It's not because of cholesterol or saturated fat or any of the other things that have never born out by the science at all.

That's the story with that and I might as well throw this one out there. I'm doing a blog post on it pretty soon but there was an honors research thesis College of Education and Human Ecology Department of Health and Exercise Science Ohio State University: a paleolithic diet associated with unfavourable changes to blood lipids in healthy subjects.

So this thing's making the rounds and it's kind of funny. I'm not religious but I feel like Moses sometimes where it's like you're leading the Israelites through the fucking desert and I'm like "I'm going to step out for a minute for a smoke and there's a bush that I need to go hang out with and don't do anything squirly. I'll be back in a month."

And so you go away and come back and everybody's like worshipping a gilded cattle and stuff like that so I feel kind of similar with this where everybody looks, feels and performs better. Their blood lipids are improved, everything's great and then every single paper that comes down to track, everybody's like should I become vegetarian and it's like yes you should.

You have such little fate in your own personal experience you should definitely become vegetarian. So this paper is interesting and I'm going through in detail point by point but basically what happens in this paper is that normal blood lipids, the blood lipids that are trapped go from normal to normal. That's it. And then they hang a statement that it's

unfavourable changes and the fact that there are actually some very favourable changes that occur.

So I see this and I'm not sure what the story was with this. It's very cool that there's some research being done specifically on the paleo diet but it's interesting what the interpretation was. It's also interesting what was not tracked in it.

So that's just on the side so that people can calm down and not deluge me with emails about this paper. So there you go.

Greg Everett: Yeah good luck.

Robb Wolf: We will tackle it soon.

Greg Everett: Good luck with that.

Robb Wolf: But you know just on the side also at some point this paper may be the final one that I do. This needs to get handed off to the next generation to all the bright eyed bushy tailed like the kid that's in med school and O lifting and everything. I'm just sick of doing that stuff. Somebody else needs to do that and please step up.

You guys, the second generation, third generation of people doing this stuff every single day that I spend debunking the debunkers I'm not getting the shit done that needs to be done so that we actually have the system so that we can tell those people to go fuck themselves. You don't need to worry about this stuff.

So it's incredibly time intensive and I understand that we have loads of new people entering this thing like Paleo is doubling is like a Google search term like every two or three weeks. It's hotter than hot. That's great. That's fantastic but help a brother out. You folks out there, start blogging and maybe some of you folks with the specific science background or if you want to do an analysis and post it on robbwolf.com or on the performancemenu or whatever god love you. I will pay you for it.

**[0:59:48]**

I just need somebody else to do some of that stuff and do it well because I'm just both sick of it and that 30 hours that I spend... When I did the debunking the Paleo diet piece that was 22 hours of work that I did on that because the irony is Alan Aragon has this piece that he put around

with the NSCA and it's pretty good. There's actually some decent points in it but then the stuff that he throws out there is so spurious, there's so much ridiculous crap in it and I was talking to Mat Lalonde about it.

I'm like "Do you want to get together and do a rebuttal of this thing?" And we were looking at it and it would be 80 hours of work to rebuke this thing in an effective way and so it's so much easier to come in and do a relatively brief sniper attack on something and then split but then the rebuke takes forever and it's like do we really want to spend 80 hours of work dealing with that or would 80 hours of work be better spent finalizing the nutrition cert and actually getting that thing birthed which clearly it's that.

But you know we've had a bunch of questions about the Alan Aragon piece and so part of what we're going to do with the nutrition cert is we're going to address some of these things like the Aragon piece like some other pieces and we're just going to weave the analysis of these pieces into the overall curriculum.

So like this Harvard red meat paper we'll discuss it, we'll bring it onboard and then we're going to provide some kind of curriculum points through the certification. We're actually going to use these papers as kind of teaching points. So that's some of what we've got going on there because at some point we've got to start replicating our efforts. We can't just every single day just tackle these things point by point because otherwise we'll never ever get anything done.

Greg Everett: Indeed. Okay.

Robb Wolf: We're on our last one.

Greg Everett: Speaking of getting things done.

Robb Wolf: People are really getting their nickels worth on this one. We were short last time and long this time but that'll be okay.

Greg Everett: Yes. Okay. Scott says hey guys. I just started listening to the podcast and they're great. I'll make my question a quick one. You may have covered this elsewhere already but could either of you suggest a website or database that a layman like myself can use to research information regarding nutritional studies? I'm a nursing student interested in learning more about the science behind Paleo outside of the published books that are on the market.

Robb Wolf: Well I mean in the back on each one of these published books are somewhere between hundreds and thousands of peer reviewed research points. So this one's a little bit of a stomper. To me I'm not even sure what to say and I don't want to sound like a dick.

Greg Everett: But my question is why does it have to be outside those books? Like you said if they're all cited with hundreds or thousands of and I don't understand what the aversion to them is.

Robb Wolf: Yeah well I think that there's a point that's being missed here is that all of these books cite tons and tons and tons of studies and that seems like just a basic piece. Like if you see, you go through chapter one of the book and whether they in line referenced the citation like a scientific paper or whether they do it like my book and just put all the citations at the end of the chapter it's a great point to start just first paper referenced, open it up, read it and see if the information there supports what's actually claimed in the book.

That's a great way to start learning how to navigate through that. I'm working on a project where somebody is compiling all of the... it can't be all but as comprehensive a look at Paleo related research if possible and providing an overview of all these material and the guys motoring through on that he's a biostatistician and so this thing looks like it will be kind of a legit kind of one stop shop resource but there are tons and tons of websites.

Loren Cordain's site has a ton of peer reviewed research just going to... I mean speaking of Alan Aragon. He does all kinds of lit review type stuff. Go check that stuff out. I don't know. There's not really a one stop shop because all kinds of different people have different takes on this, the material whether it's vegan or paleo, Lyle McDonald has a ton of peer review, lit review type stuff.

So there are a lot of folks out there. I think you just have to fish around and there's never going to be a one stop other in pub med and then it boils down to understanding what type of search terms do you want to do.

So not to be a dick but I mean some of this is just the skull sweat necessary with doing something. The beauty of a book whether it's an ebook or a print book is if it has references in there then theoretically somebody has spent a significant amount of time fishing around the primary literature and has consolidated in some sort of an organized fashion so you actually have a really concise picture of at least some

chunk of things dealing with gut health or vitamin D or whatever the topic is. So that seems like a great place to start. I don't know.

**[1:05:09]**

Greg Everett: Yeah. Okay. Shall we do it?

Robb Wolf: Is that it? Is that everything? I think we did it. I'm done.

Greg Everett: I'm done. I'm ready.

Robb Wolf: Sweet. So we are going to have Nate Miyaki here soon. Apologies to folks that have wanted to see Nate on here. I've just been super busy. Like I told folks my mom went to the hospital. She's doing better in a long term rehab facility but lots of drama associated with that and also working on a couple of other projects I have going on and Greg's been reasonably busy rebuilding his whole website, launching all kinds of projects like a documentary film and that sort of jive but we will have Nate on.

We'll have some other folks on. We'll circle back around and have Doc Parsley on here in a couple of months again. So thanks for listening. What else is cooking Greg? Any final thoughts that folks need to know about?

Greg Everett: Nop.

Robb Wolf: Okay. And then actually Nicki is pinging me right now texting me saying "I need Greg. I'm on a set up phone." So I guess we're done.

Greg Everett: Yeah. Cool man.

Robb Wolf: All right dude. Thanks for everything, will talk to you soon.

Greg Everett: See ya.

Robb Wolf: Okay bye.

**[1:06:21]**

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