

# Paleo Solution - 160

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Robb Wolf: Hey folks! Robb Wolf here. We pressed record. I usually do a countdown on this thing and my garage band waited for about 15 seconds before I started. Episode 161 of Paleo Solution Podcast. Off to a stellar start. Greg, what's going on, man?

Greg Everett: Oh, man. Now, I'm just getting worried.

[Laughter]

Robb Wolf: We've had the internet go down on us twice just trying to get this thing started so we'll see-

Greg Everett: I'm sure it will be great.

Robb Wolf: We'll see how this goes.

Greg Everett: I mean it can't be any worse than any of the other podcast we've managed to record so-

Robb Wolf: That's true.

Greg Everett: I'm not scared.

Robb Wolf: Perfect. So what's new? You're getting ready to go ahead to American Opens?

Greg Everett: Yeah. As soon as we get done recording this, we'll be on a plane to the Palm Springs and-

Robb Wolf: Nice.

Greg Everett: We got 12 people lifting so it's gonna be pretty crazy. It's gonna be fun but I'm gonna be really happy come Monday when it's over.

Robb Wolf: When it's all done.

Greg Everett: Yeah.

Robb Wolf: Nice.

Greg Everett: When I can get back to sleeping and weighing more than 12 lbs.

Robb Wolf: Perfect.

Greg Everett: Yeah.

Robb Wolf: So Bob Takano's book is out.

Greg Everett: It is. It is out officially. So it actually came out yesterday which for those of you listening right now would be like 5 days ago, 6 days ago. So when this comes out, it's- you can go get it from Amazon, you can go get it from us and it's pretty awesome so you should definitely go buy it.

Robb Wolf: I'll make sure to put a link to that in the show notes.

Greg Everett: Will do.

Robb Wolf: So that folks can grab that. Show sponsors as always, Evolve Foods. Go to [evolvefoods.com](http://evolvefoods.com). Put in the discount code Wolf Pack 2 and you will save 10% on your purchase and then also if you own a Crossfit gym or similar service-based business, you've gotta check out [frontdeskHQ.com](http://frontdeskHQ.com). You can save time and money. Frontdesk's new point of sale mobile app automates your payments, helps you schedule appointments, you can take class attendance, manage digital documents, record photos, video, key metrics of your clients all from your mobile device. It is bad ass. It is [frontdeskHQ.com](http://frontdeskHQ.com) and they still are sponsoring the show even after last week so amazing.

[Laughter]

Greg Everett: That sounds pretty incredible. If I ran a gym I would definitely use that.

Robb Wolf: You know, if I ran a gym, I might use it, too.

[Laughter]

Greg Everett: Fortunately I don't worry about that stuff anymore.

Robb Wolf: No. We just let the gym run itself and seems to do better that way

Greg Everett: Yes. Exactly. The less I interfere, the better it goes, it seems.

Robb Wolf: Exactly.

Greg Everett: Well, it just seems like that from my perspective. Maybe it's still going downhill and I just don't pay enough attention to know.

Robb Wolf: Oh, it's fine. It's fine.

Greg Everett: I'm sure it'll be good. All right. Well, anything going on over there?

Robb Wolf: Not too much. Working on the book. Had a really interesting, huge, crazy, media ping which I can't go into a ton of details but if it pans out the way it looks like it could pan out, it could be enormous for the whole Paleo sphere kinda gig so I'll keep folks posted on that and if it goes ASAP then, I'll just cry about it later, so-

Greg Everett: Did they ask you on the Good Morning Sacramento show?

[Laughter]

Robb Wolf: It could possibly be bigger than that.

Greg Everett: Oh, men! All right. Let's talk about low dose naltrexone.

Robb Wolf: Let's do it.

Greg Everett: Kath says, "I heard you speaking about low dose naltrexone on one of the podcasts but it wasn't clear about why the person was taking it. I go on and off of it for MS. I have been great with my disease for 3 years ever since changing my diet. I do sometimes as insurance take LDN which I assume means low dose naltrexone but lately haven't bothered. What are your thoughts?"

Robb Wolf: It's really interesting like in the alternative cancer treatment scene and apparently also in the autoimmune treatment scene low dose naltrexone. It's really interesting. This was not on my radar until about 2 years ago but naltrexone is actually involved in the opiate pathways and so it's an agonist to normal opiate receptor kinda reuptake and so what it does is it transiently elevates opiate levels and this seems to have a really interesting- I don't know if you'd call it a hormetic effect on the immune system but it causes this kind of pulsatile change in the immune system profile and they've been using this-

There's a pretty interesting study where they use low dose naltrexone in prostate cancer, I believe, a variety of cancers and then also they're using

it in autoimmune diseases. So it's interesting to me. Usually in cancer therapy, we're looking at trying to ramp up the immune response; in autoimmune disease we're trying to like mitigate or ramp down the immune response but the low dose naltrexone seems to be almost like adaptogenic in a way like if you need more immune response it does add; if you need less, it seems to do that.

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It's not super well regarded in the bulk of the mainstream. It's definitely kind of a fringe treatment but it's out there and the mechanism seems pretty solid and more and more practitioner seem to be using it so I guess just kinda keep your eyes on it but there's definitely mechanisms that makes sense with use of the low dose naltrexone for at least autoimmune disease and cancer.

Greg Everett: Cool.

Robb Wolf: Now we get to talk about a big old belly.

Greg Everett: Yes. Kiesa, well, I would think it was Keisha but there's no H so maybe it's Kieza- Kiesa- I'm sorry. Whatever your name is.

[Laughter]

Robb Wolf: Hi, whoever this 32 year old female is.

Greg Everett: "I'm a 32 year old female. Name unknown. I started eating Paleo in January of 2011. I've participated in 4 challenges since then and when I'm not on a challenge, I eat about 90% Paleo, sugar being the biggest cheat. I've really tried to stay away from gluten and rarely eat it. I joined Crossfit in January of 2012 and I also train for marathons as well as outrigger canoe Paddling. A few years ago before my first Paleo challenge, my abdomen started becoming distended after eating and I had the feeling of being bloated. And often I would wake up in the morning with a distended abdomen.

This has continued fairly consistently for the past few years. My stomach looks like I am pregnant and is very firm as if a balloon has been blown up inside my lower abdomen. Rarely do I see what my stomach looks like without distension. I have excessive burping especially when I run. When I drink water and continue running, I burp a lot. I went to my doctor--"

What's that?

Robb Wolf: Seems like seizing the running would be great.

Greg Everett: Don't ever drink water and run and you'll be fine.

Robb Wolf: Yeah.

Greg Everett: "I went to my doctor and he told me to exercise more and eat more fiber. I took his advice on the fiber but not on the exercising as I was already exercising 5-6 days a week. The fiber had no effect on my stomach but gave me gas. I returned to the doctor. He did a blood test to test my thyroid levels for celiac disease and parasites. After they came back normal, he sent me to a gastroenterologist. The gastroenterologist said that I had heartburn and put me on medication and which again did nothing.

After failed attempts with medical doctors, I did my own research and tried a few things including going off birth control, drinking unfiltered apple cider vinegar - that was incredible- before eating, taking hydrochloric acid tablets, body cleanses, probiotics, digestive enzymes. None of these had an effect on my abdomen. I tried each one in isolation for a duration of a month. I would like to know if there's something I am missing that is causing my abdominal distension. If you have any suggestions, I would greatly appreciate them. Thank you."

Robb Wolf: Greg and I studied this one extensively and we came to the conclusion that Kiesa probably has an alien in her abdomen.

Greg Everett: I mean, she seems to have exhausted every other possibility so-

Robb Wolf: The deal with the parasite test - God, there's a huge variety of things, without seeing specific test and seeing how comprehensive this is that that would just be one area to look at - small intestinal bacterial overgrowth, some sort of wacky gut bug, the hypochloridia thing. You mentioned that you took the tablets, you know, the Hydrochloric acid tablets but not necessarily specific protocol on all that but there's obviously something going on there and she mentioned that she doesn't typically eat gluten-

Just important to remember with that that you only need like one exposure every 2-3 weeks and you can really keep things kinda chungered up in the down below so I would try to track down a functional medicine doc like there's Doctor Kalish in the Bay area. There're some other folks that really go deep on the gut pathology type

stuff. I think he just needs somebody who is in the functional medicine scene, really, really geeked out on digestive issues and you just gotta go a little deeper on all that stuff. That's all I've got. I feel kind of flaccid in that response but that's all I've got.

I mean without more information and- it'd just be harder to give you a much more direction on that. I think that you just have to keep doing a little bit more digging on all that. And one thought also that is rattling around on this, if you are exercising too much which the 5-6 days a week kinda thing like if there's a lot of decent volume and intensity there, you can down regulate your gut's production of secretory IgA which is a critical first line defence in gut health. And so if you're overdoing training that could absolutely impact your digestion, too. Just a thought.

Greg Everett:  
**[0:10:04]**

Interesting. Okay. Well, good luck to you on figuring that out.

Brook says, "We have a local Paleo group on Facebook where we share recipes, debate topics, post local sales, and ask questions in general about the Paleo lifestyle and the whole 30. We do a 30-day challenge groups and we have been doing this for about 3 months so we are fairly new in our research. We listen to several different podcasts and review books and articles. One of our members found an article on Good Housekeeping that states 'What you drizzle on your bowl of greens maybe just as important as what's in it. A recent Purdue University study found that dressings maybe with canola oil are best at helping your body absorb the healthy compounds like lutein and lycopene found in vegetables.'

I know that everything we have researched has told us canola oil was bad and usually if we come across something like this, I always tell our friends to refer to the book and my answer this time was just plain GMO but I was wondering what your thoughts were on this; how they could have come to this conclusion and how to help our group understand it better since it was a quote study based on a reputable institution. Thanks so much for all the information you provide. You have helped our group tremendously."

And then the ever industrious Squatchy has found a link to that study and included it.

Robb Wolf:

Yeah, yeah. Thanks to Squatchy doing a kick-ass job as always but he actually went out and tracked down that silly study so I could actually look at it. So in this study they compared canola oil with coconut oil and

comparing the amount of carotenoids absorbed by those 2 oils. And all that they said was that there was a trend towards increased absorption of these carotenoids in the canola oil samples relative to the coconut oil samples which I've never really used coconut oil as a salad dressing anyway but-

Greg Everett: So I'm saying is what a bizarre comparison.

Robb Wolf: Yeah. It's kind of a wacky comparison but there wasn't even statistical significance on this that was just a trend towards significance and this gets blown into canola oil that your best option here which they did not compare against olive oil or anything which the whole study for me thinking about this from an organic chemistry perspective, I wouldn't really anticipate there being enormous difference in one lipid extraction medium versus another that might be a little big based on the chain **[Phonetic] [0:12:21]** of these fats and stuff like that.

But I wouldn't imagine it being it an enormous difference so the purported difference is not even a statistically significant one, the comparison that they were using is something that you wouldn't even normally use as a salad dressing and the canola oil, because of the short chain of both omega 3 and omega 6s just seems kinds problematic for me anyway from an oxidative stress standpoint and just the fact that we could probably find better oil so kind of a bad on Good Housekeeping-bad good housekeeping.

Greg Everett: Yes.

Robb Wolf: Shocker.

Greg Everett: Alright. Troy says, "This article suggests that caveman ate less red meat, more plants. What's your take on this report? And then of course there's a link.

[Cross talk]

Robb Wolf: Yeah, yeah. I read that one. And what they did with this is they put some folks through a protocol where they theoretically track their food which is- this is one of the problems. So these people were not in a metabolic ward study. They were instructed on approximate ratios of foods to eat and then they provided a kind of food diary kinda gig.

And the plan with this was to basically try to figure out what was the carbon nitrogen isotopic intake of these people based on their diet and

radioisotopic analysis can give us some insight into how much protein or how much animal protein or plant protein makes up the diet of a particular critter. This is called trophic level and right out of the gate it's kinda problematic that we're talking about issues like being able to distinguish one trophic level from another is a pretty fine tune thing and when we don't even have like a metabolic word study level where we know exactly what these people are reading and exactly what the amounts are it's just kind of odd that they would have so much detail on the backend of this looking at the radioisotopic signatures of carbon and nitrogen in trying to winnow out from that what the people were eating when on the front end we have a huge potential unknown and this is some of the criticisms of the couple of like human trial Paleo Diet interventions that we've had that they haven't been metabolic ward ,that has been food diary kinda stuff which isn't usually well regarded.

**[0:15:03]**

It's something that you can use to inform some further studies but you can't really hang your hat on it so that's the a piece of it and then so I'm just kinda suspicious of the analysis itself based on the lose parameters that they had on the front end of the study and then on the other side of this like I think we've known for a long time that based on location and seasonality and all those sorts of things that the trophic level how much animal protein that we're gonna have relative to plant-based calories, that's gonna vary based on season and location and all that sort of jive.

And the analysis that has been done globally is that you always see a kind of an optimum foraging strategy story. If people lived in an area where they had access to relatively easy carbohydrates, then they ate more of that. If they lived in an area where the carbohydrates were not at all easy, then they ate a lot more animal protein and I guess that's my take away from the whole thing. It was an interesting study but I think, as a baseline, it just have too much wiggle on the front end of that to really be able to draw too many conclusions.

Greg Everett: Yes. I have not drawn any conclusions from that.

Robb Wolf: I wouldn't recommend it.

Greg Everett: Okay. Weightlifting and learning—my 2 favorite things, except learning. Devon says, "Hi, Robb and Greg. I had a question primarily for Greg, I would think. Out of all the Olympic Weightlifting Certs out there, which one do you think is the most beneficial? I was considering the USA weightlifting course. I have a pretty firm grasp on the lifts through formal

instruction playing collegiate level sports on my own research. I own both of your book and DVD but wanted some pedigree of sorts to make it official. You guys both rock and sorry Robb for not having a question for you.

Anyways, lamenting the fact that I have only one G at the end of my name last night and how great it would be of had 2 because then you and I would be- we would be better related. But, alas!

Robb Wolf: Do it, man. Do it! Do it!

Greg Everett: So, I mean, this question has a bunch of different answers. So first of all, you're asking to me 2 different questions. You say which is the most beneficial and then you say you want some kind of pedigree to make it official. And to me those are 2 different things. So a certification to me is exactly that—it's certifying that you know something or you have some ability. It's not a learning experience. I've been doing weightlifting seminars for a number of years now and they've always been seminars; there'd never been certifications because one, I didn't feel comfortable certifying people after a 2-day course in which I have no chance to actually evaluate their ability to teach the lifts.

So I would say that if you're looking primarily for a learning experience about the lifts, then of course, I'm gonna tell you my seminar is the best one out there. If I didn't think it was the best one out there, I would be doing it differently. If you want an actual certification that is universally recognized and respected, the USA Weightlifting one is the obvious choice.

Now, the thing is there's a lot of people out there- right now USA Weightlifting has a really bad reputation. There's a lot of people bitching and moaning about how poorly run it is and how the education stuff is out of date and this and that but you gotta understand that the people saying that just happen to be the most vocal ones.

There's plenty of people out there who thinks it's fine. I'm kind of in the middle. I think the main problem is that there's a lot of inconsistency among instructors for that level one course and basically depending on who ends up doing that certification, you're gonna have a better or worse experience but again the point is not to get an education here. It's to get a piece of paper that says USA Weightlifting which is the national governing body for the sport of weightlifting in the US has anointed you level one certified. That's all it is.

And if that sets you up to pursue further certification from USA Weightlifting you can end up getting a level 2 cert, a senior coach level which basically says that you've taken that course but also you've produced, I think, it is 2 senior national championship level athletes or 3 or 4 junior school age level or national championship level athletes. So it's after that level one you actually have to start producing athletes or doing something of record to achieve those newer levels so whereas with these other certifications just kinda like you attend maybe there's some kind of evaluation but generally not and the ones that are are probably not exactly stringent, I would say.

**[0:20:13]**

So again decide exactly what you want to do. If you want to learn, come to my seminar. If you want to get certified and have people recognize that certification, get the USA Weightlifting certification definitely.

Robb Wolf: Or do both.

Greg Everett: Or do both. That would work also. Okay. "Fat—doesn't it burn well?"

[Laughter]

Casper says, "Robb and Greg, thanks for a great podcast. I have listened to it since episode one and from knowing nothing about nutrition, it has often been hard to understand what you were talking about.

[Laughter]

[Cross talk]

And sometimes still is, (smiley face with an exclamation point under it). But I keep listening and because of you and other reasons, too, though, I am now studying sport and science at university in Denmark. My question is simple. When reading about how macronutrients are being burned or used by the body, I often read in books that if you have a very low level of glucose coming into the cells, like if somebody had diabetes 1 or I guess if you are on a very low carb diet, too, then cells will increase the use of fat as a fuel instead. And then, they write, this can lead to an incomplete combustion of fat and can lead to a production of the acid like ketone bodies which can lead to ketoacidosis.

My question is more about what is this incomplete combustion? How is it incomplete? And how would some glucose into the cells make the

combustion any different and then thereby making the combustion complete. I just haven't been able to find that answer yet. I hope you can help me since I'm getting very frustrated about this incomplete fat burning. Keep up the good work. P.S. Sorry for any mistakes in my English or if my questions are unclear." Totally clear.

Robb Wolf: Dude his English is better than mine.

Greg Everett: Yeah.

[Laughter]

Robb Wolf: So in Physiology, Biochemistry, there's a saying that fat burns in a flame of carbohydrate and so when we're looking at it like the immigration-

Greg Everett: How profound.

Robb Wolf: Is it very profound? You're like "So that makes apple pie perfect," so-

Greg Everett: Yes.

Robb Wolf: So normally or I won't say normally but the way that things can happen is that glucose goes through glycolysis, gets plugged into the kreb cycle and the point at which the 2 carbon unit plugs into the kreb cycle with the carbohydrate, it creates a situation that we call being a quasi-catalytic like it's able to keep this kreb cycle spinning and until you get to Biochem then this is probably gonna somewhat worthless but we'll speed through it anyway but-

So you can plug protein substrates into that the backbone of amino acid- you can plug beta oxidation of fats where they carve out 2 carbon units of lipids and plug into this and this is one of the arguments that you would actually burn fat more effectively under just calorie restriction but with carbohydrate there but the other part of this is that when we deplete carbohydrate that catalytic activity that carbohydrates can kinda lend to the kreb cycle kinda goes away.

And so we are left with the situation in which the breakdown of fats create an over abundance of the acetyl CoA and this funnels, these carbon units into different pathways which then ends up producing acetone, acetoacetate, beta hydroxybutyrate. Beta hydroxybutyrate being the primary item that we're using in the whole ketogenic process to fuel muscle cells and nerve cells and all that sort of stuff.

So it's graphically - Oh, you know what, actually, Peter Attia at the Eating Academy - eatingacademy.com - he just did a really nice part 1 of kinda what is ketosis, what are its metabolic considerations and then in part 2, he's gonna look at some performance considerations but that actually goes through the normal metabolic process of having both glucose and lipids to be used in the metabolic furnace.

And then also what happens when we are glucose deficient and you start running preferentially on fats and then ketones but it's- yeah, I mean, until you actually take those courses and kinda wiggle your way through those metabolic pathways then it's a little bit of a nebulous process but just think about if we have adequate carbohydrate then that carbohydrate is able to basically kinda burn the fats in a complete fashion in that you keep that carbon backbone from the fats through the kreb cycle until it's completely discharged via CO2 and we produce substrates to go into the electron transport chain but without that, then we're not able to completely spin that dial and so we create some other metabolic products which can then get plugged back in TCA cycle beta hydroxybutyrate being the primary item there.

**[0:25:24]**

Greg Everett: All right. Hope that made sense, Casper.

Robb Wolf: Zingo. Didn't make any sense to me, so-

Greg Everett: It's okay. It sounded fancy. Perfect. Okay. Cancer as a Metabolic Disease. Josh says, "Hi Robb. I saw a tweet of yours a couple of week back about Dr. Thomas Seyfried and how his work seems to show that cancer maybe a metabolic disease due to impaired mitochondrial health. I have since done some reading of Dr. Seyfried's work and also listen to his interview on the Jimmy Morris Show.

I'm a little confused and have 2 questions; one, Dr. Seyfried seems to think that unrestricted ketogenic diets would be dangerous and that they should be only done under calorie restriction. Do you think it dangerous to be on a long term ketogenic diet without necessarily restricting calories? 2, do you think it is a good idea to do an extended 7 day fast once a year as per Dr. Seyfried's recommendations? Hope this makes to the podcast. Thanks for all the great information.

Robb Wolf: So as to question 1, what Dr. Seyfried is talking about here is basically just getting a therapeutic effect for cancer treatment and I don't think his, statement there is just on ketosis in general but specifically to cancer

treatment and unfortunately it looks like at least in humans, not only do we need to be in ketosis but we need to be in calorie restriction to be able to get this kinda hormetic effect that -

I know we've talked about this in previous podcast but cancer is not very metabolically flexible and so if you curtail energy going into cells particularly glucose, they can have kind of a rough time- the cancer cells can have a rough time surviving that situation whereas the normal healthy tissue, it actually kind of enlivens and invigorates normal healthy tissues so that's the benefits ketosis in general and also calorie restriction.

When we were looking at a lot of these things coming out of a mouse models, it looked really intriguing just with like alternate day fast and also ketosis in general but mouse metabolism is different enough from ours that you need to have pretty extended periods of calorie restriction to get the same type of effects and I guess that goes into the second question, "Do I think it would be a good idea to do a 7 day fast once a year as Dr. Seyfried recommends.

I can't really see a downside to it other than it's pretty miserable, your performance is gonna take a hit from that and I mean having literally starved for 8 days doing that I Caveman show, like it's a really, really rough go so your energy level gets real low, you get cold, you can't really think so it could be a really effective anticancer thing to do but it's really, really tough.

If you wanna give it a shot, I guess kick you heels up and go for it but it's a pretty rough go. I think that the transient balance of going in and out of ketosis maybe a little bit of intermittent fasting but again all of that within the context of not being overly stressed, lacking sleep and all the rest of that stuff.

Greg Everett: Ugh. It does sound miserable. All right.

Robb Wolf: I don't think you'd be a happy camper starving for 7 days. I just have an inkling as to that.

Greg Everett: No. Probably not. Okay. Heart rate recovery time. Kyle says, "Hello, Robb and Greg. I'll keep this brief. My wife keeps coming home from intensive Crossfit workouts wondering why her heart rate is still so high 10, 15, or 20 minutes later. She then goes on to wonder just what the heck proper recovery time really is. She might also wonder about other things like how long her metabolism might stay elevated.

In keeping with the dictum Happy Wife, Happy Life, might you be able to give me some type of informative answer I can pass along to her at least in regards to heart rate. Why I asked you 2? Because you are entertaining or most likely give me better information than I would get trying to sort through hits from the Google machine. Not to mention that my wife is more likely to believe the 2 of you than she is me on this particular topic." That is true. Your wife will-

Robb Wolf:

We have everybody's note if that's the case there. One of the indicators of I guess a healthy cardiovascular system and being well-trained is the normalization of heart rate after high level of activity. And so the lack of that occurring can be an indication of too intensive training, a lack of adaptation, adaptation being that either there was too much intensity, there was too much variability or randomness so it's such a different exposure that the individual is kind of chasing one's stress response after another.

**[0:30:20]**

I'm honestly not real well versed on the I don't have a phenomenal endurance coaching background so I don't know what the the exact numbers on that stuff should be but I know that this is one of the like they'll do-

I remember in high school, they would do like the the 60 second walking on a bench, step up, step down and see what your heart rate was and see what it was a minute later and you should see some sort of declination to your heart rate and all that sort of stuff. I think that , one of the challenges again, like I love Crossfit, it's got great stuff but I think for a lot of people, they don't need as much randomization like if were to do more similar workouts for like a block period of time- block periodization- and slowly ramp up the intensity on those things, I think you would actually get a more favourable adaptation.

And if the heart rate is still elevated for 20 minutes after an event, I just can't help but think that we've got too much volume, too much intensity and maybe too much randomization in the input such that your wife's not really adapting to this thing.

Greg Everett:

Well it would probably be indicative too of just generally too high level of stress.

Robb Wolf:

Right, right.

Greg Everett: And so, I mean if you're- she's going nuts on the Crossfits 7 days a week or something like that then that wouldn't be surprising.

Robb Wolf: Yeah, yeah. I mean you get that post exercise cortisol bump and an interesting thing that you could do to kinda track this stuff is to see what her blood glucose is actually before and afterwards and if we're seeing really severely elevated blood glucose levels, we can kind of infer from that that we've got elevated cortisol levels which is gonna release the glucose in the bloodstream and is also gonna keep the heart rate elevated. So those are some things to just think about. Joel Jamieson has the heart rate variability tracking material so you go to [8weeksout.com](http://8weeksout.com) and check out his stuff.

We've had Joel on the website. He talked about the heart rate variability but for- I don't know what- \$50 or \$75 you get his kit and a heart rate monitor and then you can run that through your smart phone and can track both the base level heart rates but also heart rate variability and then that can give you some indication of potential over training.

Greg Everett: Indeed. Okay. Can it really be the last question already?

Robb Wolf: Dude, it's gotta be.

Greg Everett: This has been such an efficient podcast or just really disappointing.

[Cross talk]

Robb Wolf: We get it done, man.

Greg Everett: Yeah.

Robb Wolf: Probably both.

Greg Everett: All right. A-Money says, "Robb, Greg, and Heir Squatch, love the show. Thanks for keeping the manic of mediocrity alive. Long time listener, first time writer.

[Laughter]

Trust me, it's not hard.

"So I'm curious about your feelings regarding the whole pseudo estrogen BPA plastic bottle mess. How significant a concern is this? I probably

don't have the greatest hormonal profile in the world so I'd like to do whatever I can to help it. Basically I just wanna know if you think I should throw away my nalgene bottle and get an aluminium one or what. Quick rundown on my history: I was born on a Monday, hate board games, stubbed my toe real good a few weeks ago, I think it may be broken. Oh, also, I have a BMI and an old Fran time. Thanks for all you guys do."

Wow.

Robb Wolf:

Nice.

[Laughter]

I'm not even sure where to go after that. I think that the estrogenic plasticizers are - I think it's a pretty big deal but I always have that with the caveat that get your sleep, get your food, get some decent exercise, get your stress levels all dealt with.

We've had clients that will be freaked out about like the whole estrogenic element of like a nalgene bottle or whatever but they're still eating shitty food and they refuse to go to bed on time and stuff like that and so I do think that it's a factor but you've got to get these other pieces dealt with and like they need to be dealt with well and then you should definitely look -

We've really made an effort even when we're travelling to not use plastic water bottles and part of that is just the environmental side of that stuff like that shit never really goes away, the recycling programs are pretty limp weeding best at this point so that there's some other kinda elements to that but get the health, get the sleep, get some decent exercise kinda squared away and then we can start looking at do you show these any type of like estrogenic effect, the BioSig from Poliquin is not terrible as a diagnostic kinda tool for kinda checking that stuff out and then there are some great anti-estrogen protocols that you can use using like dimethylmethane, some of these other kinda estrogen blockers or estrogen scavengers we talked about like a little bit of ground flax seed that a while back is being effective in kind of an estrogen detox protocol.

[0:35:28]

So, yeah, I definitely think that there is an issue as far as plasticizers and some of the estrogenic effects. You just try to minimize that stuff. And I tell you, one of the things which I assumed that pretty much anybody listening to this would be hopefully somewhat savvy to this but heating

food like in a microwave in some sort of a flexible plastic container, if you want to really imbue your food with plasticizers and estrogenic compounds, that's a phenomenal way to do it 'cause you have that heat which kinda mobilizes those estrogenic compounds and then they're able to head into the lipid fraction of your food and that is bad news so like get some sort of pyrex, you know, re-heating dish and all that sort of jive and don't cook things in plastic.

Greg Everett: All right.

Robb Wolf: The 7-eleven burrito that's wrapped in like saran wrap-

Greg Everett: That's not good?

Robb Wolf: Horrible. Well, the burrito is delicious but if you wanna have some mumps by the end of the meal, that's a great way to do it as nuking in the plastic.

Greg Everett: Oh, man! All right, fair enough. Well that's it for us today. It's a nice quick one.

Robb Wolf: Dude. Quick and dirty.

Greg Everett: People will probably need a break after the Kiefer one, last episode.

Robb Wolf: Yeah. I don't know what they did. They just want bananas off that.

Greg Everett: Yeah. Probably still some spinning heads.

Robb Wolf: So dude, good luck on the American Open. Well, I guess, when you- when folks listen to this, you will have already navigated that, that whole extravaganzas so good luck on that.

Greg Everett: You would be bound to come home, thankfully.

Robb Wolf: Sweet.

Greg Everett: So yeah, we'll talk all about it next time, I'm sure.

Robb Wolf: Cool! Right on, man!

Greg Everett: All right!

Robb Wolf: Take care, G. We'll talk to you soon.

Greg Everett: Okay. See yah.

Robb Wolf: Bye!

**[0:37:22]** **End of Audio**