

The Paleo Solution

Episode 6

- Andy Deas: Robb, how are you?
- Robb Wolf: Good, dude. I have not been renditioned out of the country yet.
- Andy Deas: That is fantastic news. So I guess that means we're back for -- I think this is Episode 6.
- Robb Wolf: Yeah, yeah. We're actually staying ahead of the curve so that's pretty cool.
- Andy Deas: Yeah. And I think the one thing we wanted to mention this week too, we got a couple of questions. This is on iTunes, it is, and now we have the nice static link on the top right hand corner of robbwolf.com where you can just click on it directly and subscribe via iTunes, thanks to our buddy Craig Zielinski.
- Robb Wolf: Yeah, Craig is a mutton chop genius and he is kicking ass on the back end of the blog. So thanks, Craig.
- Andy Deas: Cool! Well, we got another good group of questions, some of which I think I'm pretty excited about. So why don't we get started with our first question and we'll go from there?
- Robb Wolf: Right on.
- Andy Deas: All right. So we got an email question from Jack. He had been listening to the podcast. Things look great. He had a hypothetical question that came to mind that he thought you might want to tackle. So basically, he says, "Hopefully you're familiar with the strongman competitor by the name of..." I'm going to Super Mario, Robb. How do you really say this guy's name?
- Robb Wolf: Mariusz Pudzianowski.
- Andy Deas: Well done. Anyway, Super Mario, aside from obviously being ridiculously strong, is also unusually lean when compared to most strongmen and powerlifters. He has touched on his diet in an interview and it sounds as though he eats like a 16-year old with too much pocket money.

Two questions: How do you reconcile his results with his diet, given how important diet is purported to be for an athlete? And secondly, could you build Super Mario or how would you build Super Mario using a Paleo approach? Do we think this is even possible?"

Robb Wolf:

This is a fun one. You know, I think in the first podcast I mentioned my old housemate Charles who is just a ridiculously good athlete, the dude, not real huge but he had a double bodyweight bench with virtually no training; could do 10 I think planche push-ups, not pseudo-planche, not split planche so like full planche push-ups, no training, just like straight out of the gate. He was about 4 inches shorter than I am and had a higher vertical. The guy was amazing as an athlete and he was vegetarian, with vegetarian being in kind of quotations in that his main food that he ate was bars and jalapeno poppers with Arizona ice teas from like Raley's.

And we got this guy to clean up his diet such that he ate a little bit of vegetables and he took some whey protein, and he was already really, really impressively muscular, and like he started putting muscle on at a rate that was just freaky like it actually scared him and he ended up going back to more of the jalapeno poppers sort of gig.

And so there are people out there that they pull the genetic lottery on like muscle mass, gains, and leanness, and insulin sensitivity and all that stuff, and so it's just amazing. And so like my roommate Charles and Super Mario here, obviously some really good genetics going on with this, but then also, I don't think there's any doubt that when you start shifting people towards a more quality-driven diet, that they do better.

And then with Mario's situation, there's probably a reasonable assumption that there's some smart anabolic use lurking somewhere in there and that is not taking anything away from the dude. If anything, it's like if he is able to manage anabolic use in conjunction with the rest of his sportive training and all that, whatever. That's the parameters of what his sport is about these days, and so good on him as far as I can tell. You know, if they have some sort of a drug tested thing, then that's a whole other story, but as far as I can tell they don't, so it's kind of like whatever with that.

So if you take some really good genetics and some smart pharmaceutical enhancement, then what we're talking about after that is just simply like tons and tons and tons of food and there's a reality that low-quality food, you can just pack in a lot of caloric content. I think Dave Tate has made some sort of comment along this line that properly supplemented, you

can convert damn near anything into effective muscle mass. And so I think to some degree, that's all the statement there.

And then the second question, could you build him on this approach and maybe an extension of that would do better on a Paleo approach? Welbourn seems to think that the Paleo plus dairy gig is kind of the cat's meow because we reduce inflammation; we have better control of insulin levels; we don't have gut irritation so we're controlling inflammation there. There is a reality that all of these athletes are sustaining both micro and macrotrauma as a consequence of their training. So if we can minimize that, if we can improve their ability to recover, which I don't think there's any doubt that some sort of a Paleo-oriented approach can achieve that, then I think we're going to see better performance, better recovery, less likelihood of injury.

In Super Mario's situation here, if we were talking about say like five meals a day, just whole food, Paleo sources -- I did a couple of recipes for CrossFit Football, like my 1000 calorie curry and a couple of other things, it would be pretty easy to have a baseline of 5000 calories from solid food. And then if we had a gallon of say grass-fed milk, whole milk, then that's another 3500 calories. So, you're talking between 8500, almost 9000 calories from a five-meal-a-day plus a gallon of milk protocol, and that's plenty of food to grow on, plenty of protein, plenty of nutrients.

And so could you do it? Yeah, I think you could totally do it. You do a Paleo plus dairy gig. It would be a real interesting experiment to see if you did come out the back end of that with better performance, less inflammation, just generally feeling better.

None of these real big strongman competitors seem to live all that long. Bill Kazmaier seems to have kind of dodged that bullet and he took a significant amount of mass off of himself and has remained really, really strong, but he took his bodyweight down to a more sustainable level and he seems to be aging pretty well.

Andy Deas:

Yeah. And I think this is one of those things where we can never, never discount the genetic factor. I mean I think we see unbelievable things and kind of that N equals 1. Just because Mario can sustain his level of leanness given that diet, I don't think on average that's what we see.

And it reminds me of -- I think we've talked about this in person, Robb, but a couple of years ago, Sports Illustrated had this cool little graphic on one of their kind of intro pages where they took three professional football players and they photographed them topless basically just from

the waist up and they cut off their heads. So you have three players with varying levels of leanness and then you had three workout regimens and you had to match them up.

And so you ended up, you know, the first person was like this, you know, Adonis-looking physique. It looked like he worked out all day. It turns out that in the off season he never worked out. He lived on candy and coffee and whatever he wanted. And then the other guys, there was kind of like the average fit-looking guy and he ended up having the most rigorous workout regimen. And then the gentleman that sort of had the pudgier kind of offensive lineman physique, his workout regimen was decent considering what he did for a living, but nothing outrageous.

But it always shocked me when you looked at that because it was like, wow, the physique that most people would want to emulate did nothing in the off season, but if most people did nothing, in no way would they look like this guy.

Robb Wolf:

No, totally, and I remember you telling me about that. It was a great reminder and a good example of all that.

Again, talking to Welbourn, he had dudes that they would show up for training camp and Welbourn was very, very disciplined through all of his NFL career and he would show up having trained all off season. He'd take some time off, heal his injuries, get his head back into the whole training regimen, and then hit it; and the other dudes would show up and they literally had sat on the couch all off season, not done a damn thing, and still pose better strength numbers than John would. And they would just be like, "Why do you even bother working out?" and he's like, "Well, I'm not you. We don't have the same parents."

And I remember talking to Eva Twardokens who was very, very disciplined in her off season training and still people would do almost nothing with regards to strength and conditioning and walk on and still would edge her out for like giant slalom gold medal. She won numerous world championships but at the Olympics she ended up getting edged out by people who did not train anywhere as hard as she did in the off season.

Andy Deas:

Yeah.

Robb Wolf:

And, you know, it tells that there's also that thing, and this is getting a little bit off topic from the original question, but most NFL teams, the people who put up the best strength numbers are not the people who

are starters. It's usually the B level folks that end up putting up the best strength numbers and all that.

So there's the division between like on-the-field athletic performance versus like in-the-gym performance is an interesting division there. Something like strongman or even CrossFit where essentially the competition is the gym is maybe kind of a different story there. That's kind of an interesting change on all that.

But yeah, the genetics, pharmaceuticals, all that stuff can really change the game a lot, and that's where looking at these genetic outliers, it's great to take a look at what the elite do but I don't know how often that gives us a real good beat on what we should do day to day for our own training or for the training of our folks or anything, but it's a real interesting thought experiment for sure.

Andy Deas: And then on a lighter note, after doing a little research on the Wikipedia page, it turns out Super Mario is making his MMA debut on December 11th in Poland.

Robb Wolf: I wonder if Polish MMA, if it's illegal to bite the person's jugular and then rip their arms out of the socket and beat them to death with their own arm.

Andy Deas: I mean this is something I need to find on the internet after the fact. Apparently, he is fighting some boxer who this is also his MMA debut, so I'm sure there'll be some type of wonderful train wreck to behold.

Robb Wolf: Yeah. That's going to be good for the highlight reels. So yeah, I'll definitely check that out.

Andy Deas: All right. So next we got a blog question from Ryan. He said the next few months he won't have a home and wanted advice on how to maintain a good diet. Quality protein is hardest to come by since he cannot cook it himself. He wants to know if you recommend things like Beef Sticks from U.S. Wellness. He knows that Ralph's carries a low-salt deli meat that can suffice at times, but living off it would be rough. Thoughts on canned salmon or chicken from Trader Joe's?

Also then thoughts on carbs obviously. Fruit is easy but he wants to do most of his carbs from veggies. So what are our thoughts on what is the best and easiest to eat raw? And then also same thing on fats. What's our thoughts on drinking a few tablespoons of olive oil so that he doesn't

have to do all nuts and can he do some more avocados and coconut oil and things.

Robb Wolf:

This is -- gosh, you could tackle this a couple of different ways. He doesn't mention like just how homeless he is. Is he like couch surfing with somebody and he has access to a refrigerator? That kind of changes things, but let's just say like the dude is like living out of like a West Foley van and he has almost no access to anything. Big ice chest that he can store his food in. I think the canned salmon, canned fish sort of deal is a real good option. The rotisserie chickens are a really good option. And again, like you can store all that stuff in the ice chest. The jerky stuff seems like an okay option, any of the U.S. Wellness meats. Trader Joe's has a pretty good jerky. It's not grass-fed but it's gluten-free. That seems like a pretty good option.

Fats, I've just been on like a coconut tart of late and a half a can of coconut milk shot down is pretty damn yummy. Like Mat Lalonde said the light stuff is actually okay for like shooting down as a drink. The full fat stuff is a little bit hard to do that. You could always cook with it too. But there again, I'm not sure what his cooking situation is like.

I know Barry Sears doesn't like carrots but out of the whole vegetable category, like for portable and low-glycemic loads, super high nutrient density, like organic carrots I just love. I've got a five-pound bag of them down in the fridge at my house. They're stable at room temperature, stable temperature in the ice chest. Not real big carbohydrate density again. And if you can stomach a shot of olive oil, sure, go for it. I don't see any problem with that. I usually have problems and want to like barf the stuff back up, but I think that's about it.

You know, so much of the time I've spent on the road, like I've literally eaten or lived pretty damn near to that where I maybe have a hotel refrigerator and we're staying somewhere for like four or five days. And each time I eat out, I'm taking the risk of getting a wheat exposure or gluten exposure and so I try to just track down whatever food I can and just eat in the hotel room for the most part. And so I live pretty similar to this that significant stretches of my life, and it works fine. It's not the best thing in the world but it works out okay.

Andy Deas:

Yeah. And I love the U.S. Wellness Meats jerky. I know they released a new version of their jerky that doesn't need to be stored in the refrigerator all the time. It's much drier. I think they recommend you can only really hold it at room temperature for two to three weeks. So I know that's not a perfect solution, but for me personally, I don't know what it

is about that Trader Joe's stuff. Maybe it's the agave nectar. I just don't feel good after I eat it.

Robb Wolf: Okay, cool!

Andy Deas: But I could be N equals 1. I could be an outlier on that, Robb.

Robb Wolf: Yeah. Hopefully, with Paleo Brands, we're going to have our own grass-fed just jerky line here pretty soon and we're going to try to also have a fish jerky like a salmon or some similar type of fish like that. We have a bunch of requests for that. So hopefully, that's something that we'll have sooner as opposed to later.

Andy Deas: And then I always have to throw in my plug for like canned sardines.

Robb Wolf: Oh, yeah, you know, I forgot that. BELA-Olhão Portuguese sardines are amazing. They come in a variety of flavors. We usually just do the plain lightly smoked in olive oil but they have like a lemon undertone, they have some chili undertones. Those are amazing, really, really good.

Andy Deas: Cool! All right. Good stuff for Ryan.

Next question, which I really like, email question from Karl. He mentioned he just finished listening to the second podcast and we had talked about the blood test to measure the ratio of Omega-3 to Omega-6 fats. We've been mentioned in passing in the past but haven't seen anyone talking about biomarkers specifically and recommendations of which tests we should have and why. He wants to know if you can give some thoughts on your favorite biomarker tests and why we like them.

Robb Wolf: Sure. So that Omega-3/Omega-6 test, usually what folks are looking at with that is EPA/arachidonic acid profile. It's a red blood cell profile looking at the ratio of EPA versus arachidonic acid, and so what that's giving us a picture of is how much Omega-3 versus Omega-6 typically that we're rolling within our body.

And Sears actually has some good metrics on that in the Omega Rx zone off the top of my head. I forgot what that ratio is supposed to play out too, but there are some theoretical guidelines that grow out of that. Cordain has had some commentary on that also and it's all based off of what our theoretical fatty acid profile would have been out of ancestral diet.

And so that EPA/arachidonic acid profile test is interesting. It's pretty telling about a lot of things like systemic inflammation from a very big macro level because all of those Omega-3/Omega-6's are going to flow downstream into either pro or anti-inflammatory eicosanoid products, so prostaglandins, leukotrienes, cytokines, all that sort of stuff are going to be the downstream consequences of EPA, DHA, and arachidonic acid. So it's giving you an upstream measure of where that inflammation is.

Downstream, what we can look at are some things like C-reactive protein. It goes by CRP on a basic blood panel or C-reactive protein. Apolipoprotein A, which interestingly is decreased by certain types of saturated fats like stearic acid, a couple of other inflammatory markers just basically tracking white blood cell count, because a little uptick in white blood cell count over time is indicative of a systemic inflammation problem.

Conversely, if you end up dropping, you have systemic inflammation, in particular, any type of like irritation in the gums or in the gut, like you remove grains from your diet and the gut heals, you start having better dental hygiene and your mouth heals, you'll see a little drop in your white blood cell count. Usually, you'll also see the numbers on C-reactive protein drop because C-reactive protein is an indicator of immune cell activity and kind of inflammation spilling over from that.

From there, there's a ton of different biomarkers you can track. Advanced glycation end products like A1C test shows how much sugar is sticking to the body's proteins. Man, off the top of my head, I could think of a bunch of different biomarkers and a lot of get them really, really obscure. We could do a follow-up show and kind of get in a little deeper on that, but I honestly don't know how much any of that stuff really does anybody any favors.

On a macro level, if you are eating this kind of basic Paleo-esque approach, your training is smart and smart being that you don't get the dog piss beat out of you too often, and you sleep a reasonable amount, your biomarkers are going to be within good operating parameters. If you want to cook through some money, revalidating the fact that you look, feel, and perform well, I guess you could.

But God, in some ways, I just hesitate giving people a bunch of information on biomarkers that really just reconfirms what they already know, which is that they look, feel, and perform well. And I would really prefer people kind of hang their hat on improved athletic performance,

better work capacity, quality of sleep, lean body mass, all those things that are pretty straight up and easy to quantify.

Andy Deas:

Well, let's kind of maybe flip the question. Outside of the standard blood work that you would get traditionally, when you go to the doctor for your annual physical, would there be any one of those tests that you would say, "You know what, if you wanted to add one or two other tests just to validate some of the things that are happening under the hood, what would those be?"

Robb Wolf:

Okay, that's a good one and an easy one. You know, you're going to start off with the basic blood panel, and on that basic blood panel the stuff that we're going to look at would be obviously cholesterol, HDL and LDL cholesterol. We're also going to be looking at triglycerides. The triglycerides are really important to me because triglycerides are an indicator of systemic inflammation, and indirectly, because they show what our insulin sensitivity is.

If you have high triglycerides then you have poor insulin sensitivity. So when we start people on a dietary change and an exercise change, usually, we see potentially high triglycerides at the beginning, then they change their nutrition, change their training, and then a month later, the triglycerides have dropped. And so it tells us almost without a doubt that their insulin sensitivity is improved.

The add-ons from that that we might look at are LDL particle size; and LDL is theoretically the bad cholesterol. But there's varying types of LDL cholesterol. There's small, dense, highly oxidizable LDL particles. There's large, puffy, non-oxidizable cholesterol. And so the LDL particle size will tell us what type of population of LDLs we have. That's a cheap, easy add-on. I mentioned C-reactive protein earlier. That's an easy add-on. That's a good indicator of systemic inflammation.

And from a cheap, easy-to-do standpoint, that's a good spot to start. It should only be maybe about \$30 to \$50 of add-ons for those tests; and frequently, because of the way that folks' insurance is set up, it's unfortunate that it's a fairly expensive barrier of entry to go get blood work unless you have like a really good insurance set up where you can just walk into your doctor, have a co-pay for the doctor that doesn't cost you all that much, ask for the blood work, and then have a small co-pay or no co-pay for the blood work.

Otherwise, like for me, because I have a health savings account, I actually like pay for my medical care directly, which is just kind of a whacky

concept similar to like going and buying food directly and some sort of food insurance, but that's a whole other topic. But for me to go ask for blood work, I have to go to a doctor, get a script from the doctor, I have to pay my \$50 to \$75 doctor fee, then I have the lab fee plus whatever add-ons, so it's about a \$250 gig for me to go get a basic round of blood work, and that's because I choose to roll with a health savings account and just basically pay for all my values. You know, whatever I want to do, I basically just pay for it out of that health savings account.

I did some veterinary pathology work where I ran the instrumentation in a pathology lab for a veterinary clinic, and it was interesting in that setting in that whole similar round of blood work for an animal would be about 50 bucks and that's kind of the real cost of what it should cost to go to a doctor, get some blood work ran and analyzed. And that's also getting off topic, but this is also why to some degree just I don't know how valuable it is tracking down all this blood work. Because the way that things are set up right now, people usually end up necessitating some sort of out-of-pocket cost on it, but it could be a deal breaker for me. But if they want to do it, by all means, go for it.

Andy Deas:

Yeah, and I think for some folks, it can be helpful. I had a situation with a family friend who switched to a Paleo diet, lost a lot of weight, felt a lot better, kept the weight off, but unbeknownst to us periodically cheating a fair amount and eating a ton of additional carbohydrates. And then when he redid the blood work six months later, although he generally felt pretty good and kept the weight off, then he started to see that shift back to some of the higher numbers that we don't want in somebody's biomarkers. And so in that case, it was kind of a reinforcement for him. "Oh, well, although I feel okay and I haven't really put much of the weight back on, perhaps I'm having a little too much fun and may need to tighten things back up."

Robb Wolf:

Yeah. And, you know, so even within that though, like something like a Poliquin Biosignature sort of gig or just simply an umbilicus measurement like that fat deposition at the waistline does not lie, and that's true whether we're talking about sleep disturbances or cheating on your carbohydrate intake like you will immediately start storing fat at the waistline. And so whether we're talking simple measuring tape test, keeping track of that, or a more sophisticated caliper method like what Poliquin does on the Biosignature gig, that will tell you immediately what the heck is going on.

And, you know, Scotty Hagnes, in talking to him, he knows when his folks have been out drinking the night before. They'll come in and their growth

hormones sites are suppressed from two days previously being out doing a bender drinking and stuff like that. So, there are some other lower-tech but very, very effective ways of knowing what's going on under the hood.

Andy Deas: Cool! That's good stuff.

All right, next question. I'm very excited to hear your thoughts on this, Robb. Email question from Steve. He read the book "The China Study" and "I'm curious about your take on their findings and how this fits into the Paleolithic diet."

Robb Wolf: Oh, gees. This thing came up, you know, The China Study. T. Colin Campbell who is a professor at Duke University I think, I forgot, Duke or Cornell. I forgot where he is at. A well-known researcher, very well regarded; the dude is older than Moses like he's been researching for ages; and he is vegan. His research in The China Study, the basic take-home out of The China Study was that protein causes cancer was his like, you know, if you were to put it into an elevator pitch, you know, one word, one sentence sort of gig.

And so this thing would pop up all the time. People would say, "Well, what about The China Study? What about T. Colin Campbell's research and everything?" And so to kind of put this thing to rest, I wanted to do a debate between Campbell and Loren Cordain; and originally, they were going to do this debate at a, gosh, the Soma deal. What's the thing that happens in Boulder each year? Maybe it was Boulderfest? There's Boulderfest. What's the other thing that goes on that's like a big like nutrition and fitness?

Andy Deas: Oh, yeah. It just happened. I know we've talked about this. Some of the Berardi guys were there.

Robb Wolf: Yeah, yeah. So it was like that. It was something like that. I forgot the name of it but it was like Boulderfest. It was definitely this gig that like Berardi was at and everything.

But anyway, Campbell and Cordain were supposed to debate like the role of protein in degenerative diseases, and somehow that thing fell through. And so originally, what I wanted Cordain to do was just to write a review of The China Study, and he said, "Well, you know, a more interesting thing than just a one-sided review I think would be an actual debate between myself and T. Colin Campbell." And so I was like, "Okay. That's cool."

And so this was when I was still a partial owner in the Performance Menu and I bounced this idea off of Greg Everett. “What do you think about funding this debate between these two guys and then we’ll just make this thing available on the internet so that folks can make their own decision on this? Here’s Campbell’s position on like protein and animal products in the diet and its role in degenerative disease. Here’s Cordain’s piece on that.”

And the format was going to be each of these guys would make their case then they would have a counterpoint to each other, and then a counterpoint to the counterpoint. And we put this whole thing together. It’s called the Protein Debate. You can get it off of the Performance Menu website. Maybe in the show notes we can include a direct link to that protein debate.

But I thought it was amazing and it was pretty obvious looking at the level of work that went into the two efforts. Campbell pretty much approached it as a payday and Cordain took it on as a labor of love and blood for it. And we paid each of them what was for us at that time a pretty good chunk of money but which was for Cordain kind of a pittance considering what his speaking fee is for a day, and so he was very, very kind, very generous doing this. Campbell was too. I mean he is a well-known dude and commands a good day rate on his speaking. And so, you know, not to knock that guy overly, but the level of investment is obvious when you look at the citations and just all of that stuff.

But the basic take-home from Cordain was like there’s absolutely no substantiation for these claims in The China Study that protein causes cancer. When you look at Campbell’s original research, they were feeding mice. The exclusive source of protein in their diet was casein. These were adult mice. They were eating a 10% or 15% protein diet, I forgot which one it was, and the exclusive source of that protein was casein. And then also, a very, very high carbohydrate from the standard kind of like NIH-007 mouse chow which is this like super high carb kind of chow that they have.

And so what do you have out of that situation? You have a comparatively high-carb diet. The protein that you have is from a dairy source. So what do we have going on there? We have like insulin spiking from the carbs, insulin spiking from the dairy. Dairy is also a potent growth promoter of epithelial growth factors, insulin-like growth factor, growth hormone release. It downregulates sex hormone binding protein, which actually makes more androgens available, you know, estrogen and testosterone.

All of that stuff leads into growth promotion. It's essentially uncontrolled growth promotion. Uncontrolled growth sounds a whole lot like cancer. So the study that Campbell did was not representative of a wild type mouse diet at all; but yet, the extrapolation from this was that, "Oh, high protein intake and increased protein intake ends up leading to cancer."

And so this was their theoretical model they used in a lab setting. Their empirical findings were derived from essentially questionnaires of rural Chinese who were eating a transitional diet as these areas became more industrialized, and the observational data seem to indicate that as they ate more protein, more animal products, as they became more affluent, that they started suffering more diseases of affluence. But the thing is they never gained control for things like carbohydrate or smoking or any of this other stuff. They just kind of lumped all this crap together.

So Cordain took all of these points apart piece by piece by piece in the protein debate. At the end of the whole protein debate, Campbell finally, I think out of frustration, just says, "Well, what can we really learn from evolution with its regards to biology and health?" And he basically just dismissed the whole branch of evolutionary biology as being at all helpful with understanding biology and health.

Andy Deas: Pseudo-science, Robb.

Robb Wolf: Oh, it's all pseudo-science. It's all pseudo-science, baby. So that's kind of the long drawn-out story of where I'm at with The China Study and how we've endeavored to address that whole issue by getting the two top people in the world in one kind of pro-vegan, one pro-Paleo obviously, and have them debate this thing and then just let people read it and draw their own conclusions from it.

Andy Deas: Cool! Good answer. I was excited for that question.

Robb Wolf: Cool! It probably put everybody to sleep, but that's the full story on it.

Andy Deas: All right. Next we got an email question from Jason. He is a trainer in Orlando and was interested on hearing some of your thoughts on Paleo. Do a lot of clients usually have a hard time adjusting to the diet for monetary reasons? We all know that sometimes eating naturally can be a bit pricey. Are there any online sources or stores with good buys that you would suggest?

Robb Wolf: This thing frustrates me a little bit because when I hear the monetary thing on the food side, when we got the gym going, when we started

NorCal Strength and Conditioning, CrossFit NorCal years ago, we lived on a shoestring getting that thing going, and I mean like a shoestring; and I shopped at Costco; I shopped at like FoodMaxx; I bought heads of cabbage for like, you know, 19 cents a pound; I bought the bulk onions, bulk carrots, meat in big flats and all that; and we lived real cheap but we ate pretty damn well because we made intelligent food choices.

And it's real frustrating when I hear this monetary excuse and frequently, it will come out of like the college crowd or something like that, but then these people are out drinking two or three nights a week; and I just got to call bullshit on it more often than not. Maybe this is me being cranky but if your priorities are straight then the money is there for the stuff, and if somebody legitimately has like a horrible situation where they're barely like making ends meet then my apologies and I guess I'm not talking to that person. Maybe you need to get a 50-pound bag of beans and rice and just battle for survival, but I don't see that situation being an issue, particularly if it's actual clients walking through your door. Like if they're contemplating like paying for a gym membership, then usually there's some sort of discretionary income there.

So I don't see the money thing really being that big of an issue if they're actually committed to doing this. And it's hard to imagine a better investment that you can make in your health, like I just can't see that not doing anything but giving you the best return on your investment that you could possibly get, stuff like Costco, the big mega food chains.

In Chico, we have like two of these big food carriers. One is WinCo, one is FoodMaxx. WinCo, the vegetable quality sucks. It's horrible. FoodMaxx, it's great. There's a real big Hispanic and Southeast Asian population that shops there so we get all kinds of stuff like coconuts and coconut milk and squash and like all kinds of stuff that you don't see at the more kind of whities, conventional WinCo store. So even within the mega food places, you just kind of need to shop around and figure out which one has better quality, which one has better prices.

If you wanted to buy some stuff online, like what's the coconut place that sells like the big tubs of coconut?

Andy Deas: Tropical Traditions.

Robb Wolf: Tropical Traditions, yeah. Like you could buy like a giant 5-gallon tub of coconut chips from those guys and the whole tub ends up costing like \$22 or something like that, like ridiculously cheap. Whereas if you were to buy that thing, the same amount of coconut chips in 1-pound bags, it

would be like \$300 or something. So there's some different stuff you can do like that. You could buy 1-gallon containers of olive oil.

And I just found, I told Andy before the show started, this place Cash & Carry in Chico. You can buy really inexpensive coconut milk. I just found a 1-gallon can of coconut milk for \$5.25. I don't know that the coconut milk would last long enough to buy that, pick up a can, like I eat a lot of it but I don't know that it would last that long. But there's just a lot of creative things that you could do. You just kind of have to stick your mind to it and figure out what those things are.

Andy Deas: Yeah. And this is one of those things too, like back with the meat and the grass-fed beef or whatever, you know, looking at farmers close to your area. When I lived in Arizona, we would buy half of a cow or whatever. It would cost a big initial cash outlay but then when you subtract it down to figure out how much we're spending per pound, it was really pretty reasonable. Yeah, there were some cuts of meat in there that I had to figure out what to do with 'cause I don't normally get the parts of the neck and things at the store, but there's a lot of good nutrition in there. I just had to figure out how the hell to cook it.

Robb Wolf: Right, totally, yeah. And in our gym at CrossFit NorCal, we have CSA boxes where people buy local CSA boxes and they share the vegetables around. People are going in on grass-fed meat purchases so like you get a half cow or a quarter cow or whatever.

And so there's stuff like that too that if you organize that and do a little bit of co-op buying really leverages your money and you can get a lot more power out of what you're doing. And that would be a cool thing to try to organize in the affiliates, just putting in on people's radar that you could organize something in-house in an affiliate doing co-op buying and stuff like that. I think that would be really powerful.

Andy Deas: Yeah. And this I think goes back to your thing too about your initial shopping guide you put out because you're shocked that people don't know how to cook. I find with some folks, they're spending a lot of money but they're buying meats and things but they're all prepackaged, some of these sausages and things that are costing a lot per pound or per serving, which if they would just buy plain meats, learn how to cook and prepare them, they would save a sure lot of money.

Robb Wolf: Oh, totally, completely.

Andy Deas: So anyway, cool! Good question.

Robb Wolf: Yeah, it really is. I mean we get kind of long-toothed on some real technical kind of out there stuff, but this practical implementation is obviously where it all starts and stops. It's like how do you fundamentally get people feeding and watering themselves well? So it's a really good question but there are some elements of this similarly, and you touched on it just now.

People say things like, "I'm bored" or whatever. It's bullshit. People need to get in the kitchen. They need to track down recipes. They need to experiment. They need a cabinet full of spices and they need to just try all of those spices and they're going to mess up some meals, and some of them are going to go in the garbage and other ones are going to be great, and that's the way it is. And like you said, that's also where all of this is going to be a lot more cost-effective too.

Andy Deas: Perfect! All right. Next we got a blog question from Chris. "We are working to increase accountability, awareness, and knowledge about Paleo and Zone at One World." I assume that's CrossFit One World. "What are some ways to help people get started and consistent with better eating, weekly meetings, Paleo/Zone challenge, etc.?"

Robb Wolf: This is a great one and this was something that I talked about a bunch at the now infamous Black Box Summit. We've gone through this evolution at our gym where we initially did almost nothing for our clients. We just said, "Hey, check out CrossFit Journal 21. Go to the Paleo Diet website." And so it was very hands-off. We got not surprisingly horrible results from our clients. It was very hit and miss. Hardly anybody really got on board.

Then we got in and tried really pushing a more weighed and measured approach to things but the confusing thing with that was that people were eating a bunch of foods that still were not really good for them, and like the compliance was horrible, results were not that good; and then because I've got a background in all this autoimmunity celiac type stuff, seeing people eat grains, legumes, and dairy, I was still seeing a bunch of like inflammation and autoimmune type problems that were not being addressed by a lack of food quality emphasis.

So then we started really pushing the whole Paleo thing, and this happened in conjunction with when we started doing an on-ramp class. So we made a move towards quality in our training and quality in our food, and these two things dovetailed together. I put together the shopping and food guide and 30-day food log in which people would log

what they were eating, and we had a very basic eat this, this, and this. It was almost like pull one from column A, one from column B, one from column C, and put together like protein, veggies, fat, and this is how you build meals.

And we started introducing that even before day one of on-ramp. We would email the shopping and food guide and the 30-day food log to people before they even showed up for our on-ramp class, before they even started one-on-one training; and we hit them with a low-tech, easy-to-implement way of eating. We didn't say Paleo. We didn't say Zone. We didn't say neuroendocrine response. No bullshit like that. It was just simply to see the success that you can reap out of this program.

We emphasized lean proteins, loads of vegetables, some fruit, good fats, nuts and seeds, blah, blah, blah, the whole meat and vegetables, nuts and seeds, some fruit, a little starch, no sugar, but it's very non-technical, very, very easy to embrace, and we hit people before they even came in the door. And there was an expectation that they were going to be successful and we gave examples of other people who had been successful, blood lipid changes, before and after photos, different things like that.

And so from day one we established a culture of success that people started emulating and then we got really damn good results on this. So we just don't let any grass grow under people's feet with them being in the program and not participating in some sort of nutrition gig. Now granted we've got varying levels of buy-in within the gym and different people take it more or less serious, but a lot of people take it very, very serious in the gym.

Other affiliates that have done these Paleo challenges see a significant uptick in the number of people doing the Paleo challenges, and then also, the results that they get and then not surprisingly they also see an uptick in their clientele number. Because when people start getting better results, they're walking billboards and they look better and they feel better, and people notice that and then they want to participate in it. People like seeing success and they want to get involved with it.

So we hit people right on day one, before even day one with some accountability, with the shopping and food guide, the 30-day food log, all that sort of stuff. Then through the course of our on-ramp curriculum, every single day we discuss their food, we look at the food log, and we try to give them guidance on how they can improve what they're doing, and it's very, very effective.

Then incrementally, over the course of a year, we will drop in things like a Paleo challenge to bring people back together to get them refocused on their nutrition. Because people will be tight for a couple of months, then they'll start sliding out, and so we'll put together something like a Paleo challenge and that will kind of unify everybody together.

I think the next one that we're going to do, we're going to have like a cash buy-in where everybody who participates, they put in 20 bucks in the kitty, take before photos, let it run 7 or 8 weeks, after photos, evaluate people on that, and then I think first place gets the bulk of the money, second place gets a little bit, third place no money, but all of the people end up getting some free group class memberships out of that, and I think that stuff's great.

Weekly meetings, once-a-month nutrition talks, like once a month we have a nutrition talk that I usually head up in our gym. Every affiliate should be doing something like that. Like all that stuff is good, but again, people are so reticent to systematize their businesses, but if you have some systems in place and it dovetails in with your training, dovetails in with your business practices, you start offering a much better product, and it's ironic that that's such a controversial and potentially job-ending topic, but it's just kind of the facts. And the people who have implemented this stuff have seen really good, fantastic results in that regard.

Andy Deas:

Yeah. And I think this is one where those before and after pictures and then folks come in to our gym depending on what their goals are, but a lot of them frankly are interested in body composition shifts. You take out a group of the pictures from the folks last year from the Paleo challenge, you know, stunning results. And if they were even halfway interested to begin with, they're like, "Wow! I want to see changes like that in my physique. Where do I sign up?"

Robb Wolf:

Right. And, you know, the thing is that there's a sense out there, and in this CrossFit world, this is beyond that, that if you just beat the dog piss out of people that that will undo bad nutrition, and it's not true. Shitty diet will cock-block fat loss almost right straight out of the gate. And if you take your coaching practice seriously, then you need to hold your folks accountable and try to get them eating the best quality food that they can and that's just all there is to it.

And it wraps around again, if you want to be successful in your coaching and you want to get the best results for your folks and you want to save

lives and reverse autoimmune disease and help get people out of type 2 diabetes, then this is the direction you got to go. You got to take some sort of a qualitative shift towards you're their food to be able to effect these changes, and no amount of just bludgeoning people with exercise is going to undo that.

Andy Deas:

Well said. All right, blog question from John. "Robb, could you touch a little more on the proportions of food for strength focused nutrition? In the last topic of Episode 4 you and Andy spoke about higher than Zone protein, low carb and eating enough to be satisfied plus a little more. Unfortunately, I tend to get myself in trouble when I don't set goals. So, what would starting proportions look like?

I got the one gram of protein per pound of lean mass or bodyweight. I'll have to play with that. What is considered low carb for this approach? Still around 50 grams daily? How much fat? Are we talking something like '42 Ways to Skin the Zone', three fat blocks for each deleted carb block and/or 'Athletes Zone'? Please discuss."

Robb Wolf:

You know, this is -- in talking to Poliquin when I went to the Biosignature seminar with Scotty over a year ago, a year and a half ago, Poliquin's approach is to basically get people eating a gram of protein per pound of body mass. Now, for somebody who is overweight, that's like holy cats, that may be a ton of protein. But the reality is like these people are usually deficient in various amino acids like carnitine that shuttle fat into the mitochondria.

Protein is very, very satiating. It's almost like a challenge. We had a couple of folks that were over 300 pounds and simply getting them to try to get 300 grams of protein from whole food, like there was nothing left for them to eat shitty food with. Like it cleaned up their food rather well and there's a thermic effect that John Berardi has talked about with this protein intake. There's a lot of good stuff behind all that from a body composition shift sort of gig. So whether we're talking a strength athlete or a weight loss individual, that gram of protein per pound of bodyweight I think is a nice place to be.

That said, I was talking to James Fitzgerald again at the Black Box gig and he had a really good point on all this, which was that it's not all so simply the amount of protein you take in. It's the amount of protein you digest and absorb. And there were a ton of people out there, they're hypochloritic, they have low stomach acid, and so they need to take sometimes ungodly amounts of protein to be able to get any type of scale shift with regards to mass gain or something like that.

So this is where doing something like a zinc tally test, and if folks don't know what that is, it's where you do a zinc solution, you give it to the person, they take like a quarter of an ounce of it and taste it. If they don't taste anything out of that zinc solution, then it's a pretty good bet they're massively deficient in zinc and then we start supplementing them with zinc. A ZMA type deal before bed is good. And then we also do some sort of hydrochloric acid supplement like the NOW Foods Super Enzymes that I always recommend, and we only do those with protein-containing meals but all meals should contain protein so you can do it at all meals effectively.

But what this is is a digestive enzyme with hydrochloric acid that will help you start both digesting protein and absorbing your minerals. If you're mineral deficient, zinc and magnesium deficient, then you will tend not to produce stomach acid. Stress can influence that. Stress can come from life stresses, exercise, overextension, lack of sleep. A load of different vectors can impact your digestion.

So on the one hand, we're saying take in a gram of protein per pound of bodyweight, but at the same time, if you're optimizing your digestion, you may not need quite that much. So this is a whole other big topic that needs to get fleshed out another day. We could probably do a one-hour show just on this topic and just kind of scratching the surface. But fundamentally, what we're talking about is about a gram of protein per pound of bodyweight and hopefully making sure that our digestive process is solid, and this is probably stuff that we'll talk about more as we go down the road.

Then from there, we build in, instead of, unlike the Zone where we just assume that there's some sort of carbohydrate set point that we want to stick in there, I am fueling carbohydrate based on what the athlete's or the individual's needs are. If they are a purely strength type athlete, Olympic lifter, sprinter, something like that, they have very, very little carbohydrate need at all, and so we're probably talking less than 50, less than 75 grams of carbohydrate coming from ideally non-starchy vegetable sources. What we're doing with this is that we're hedging our bets against any type of acid-base issues. So we're taking in plenty of low-carbohydrate load vegetables. That's going to stick us in the net alkaline state.

Now, from there we've got our gram of protein per pound of bodyweight; our minimum or maybe our maximum would be a better way to look at it; carbohydrate prescription mainly from a ton of low

carbohydrate density vegetable matter; then we're filling in the rest of our caloric needs around fat intake.

Where you would go with that is if you want to lose body fat, then you're probably somewhere between like 15 and 17 calories per pound of bodyweight. If you want to maintain, you're somewhere between like 18 and 19 calories per pound of bodyweight. If you're wanting to gain muscle mass, trying to gain mass overall, then you're probably somewhere between like 20 and 21 calories per pound of bodyweight. This is something I got from Welbourn.

This is going to vary a little bit like a bigger athlete is going to actually require fewer calories per pound of bodyweight 'cause they have greater volume relative to their surface area. They just actually like bend heat to the universe less efficiently than a smaller athlete. So, smaller athletes may actually need to have a relatively higher caloric intake per pound of bodyweight. But this is a very, very easy way that you can construct either a fat loss, maintenance or weight gain prescription built around this basic gram of protein per pound of bodyweight, as much vegetable matter as you can get within your carbohydrate prescription, and then filling in the remainder of all of that caloric need with smart fats -- olive oil, coconut oil, all that sort of jive.

Andy Deas:

Yeah. And I think this is one where from talking to Scotty Hagnes at CrossFit Portland, following the Poliquin seminar, he has seen very good results with that one gram per pound of bodyweight especially with females too. I know in talking to him he thought that a lot of his females were not consuming enough protein. Getting them closer to that one gram per pound of bodyweight, you know, seemed to induce lots of positive improvement in the gym, body comp, etc.

Robb Wolf:

Yeah. And, you know, we have a ton of good examples of exactly that. Two of them that come to mind, and I've kind of like beat the drum on this, but Jolie Gentry, who was a great high-performing CrossFitter, did CrossFit Games 1, CrossFit Games 2, both of those as a Zone athlete, 10 blocks of protein, about 10 blocks of carbs, and then about 33 blocks of fat so like a 3x fat sort of deal, mixed diet, a little bit of bread, a little bit of oatmeal, different stuff like that, came to my nutrition gig, ditched weighing and measuring, started eating kind of instinctually, ate to satiety. Most meals were protein, veggies, fat. Post-workout meals were protein and carbs. When we weighed and measured her food, she went from 10 blocks of protein up to 26 blocks of protein, went down from 10 blocks of carbs down to like 6 to 8 blocks of carbs, and then went from 33 blocks of fat to almost 70 blocks of fat.

And so what we see is a more than doubling of her protein intake, a more than doubling of her fat intake, and an almost cutting in half of her carbohydrate intake, and the results where she got bigger, stronger, faster, and PR'd on every single metric you could find -- metabolic conditioning, maximum strength, Olympic lifting, everything. And this was a simple shift in which she ended up eating more protein, she ended up shifting her food quality, she noted remarkably decreased systemic inflammation just like joint aches and better recovery and all that.

Laura DeMarco, same deal, 18-year-long vegetarian then she became a Zone vegetarian; saw a significant improvement in her performance because she went from like all carbs, no protein, no fat to a balanced macronutrient deal via the Zone but still with vegetarian sources; then she went Paleo; and in a month of unweighed, unmeasured Paleo went from 275 in her deadlift to 325 in her deadlift. And this after training for like 18 years, an elite training age athlete, somebody who has trained for a long time and you would think has really kind of reached the genetic ceiling. She saw a 50-pound increase in her deadlift in essentially a month, and then again PR'd on every metabolic conditioning workout that she was doing.

And that stuff is just stunningly convincing to me. It's like the question then comes up when do you weigh and measure? When you cease to make good progress and then you weigh and measure and figure out where you're at and try to use that to help you make an educated choice about where you go next. If you've got a simple, unobtrusive protocol that produces elite level result, why complicate that with another bit of neurosis or stress documenting all that?

Now, that said, if you're a very detail-oriented type person, James Fitzgerald keeps metrics on like everything, by all means, weigh and measure everything. Keep track of it. The more data, the better. But what we're seeing is that that's not a requisite for elite level performance.

Andy Deas: Good. Good question.

Robb Wolf: Yeah, a real good fit question there.

Andy Deas: I like that one. And for some folks, you will hopefully never weigh and measure.

Robb Wolf: Yeah. I mean our team, Affiliate Cup team, nobody on that weighed or measured. Glen Cordoza, amazing performance, IFC lightweight

champion in MMA, hasn't weighed and measured. And the thing is, you know, he has produced almost a 300-pound clean and jerk, a 275-pound clean and jerk, a 225 snatch, a 480 Fight Gone Bad, and amazing in-the-gym numbers; but we trained him to be a fighter, not a CrossFitter, not an in-the-gym athlete, but yet he puts up great numbers, I think probably top 5, top 2% numbers in the gym, and he just continues to make upward progress with the basic Paleo approach.

And so I do not see a need to get in and start weighing and measuring his food yet because he has had no diminution in his progress. It just keeps going and going and going. So I don't, as a coach, see a need to tweak that. We're able to take him from 178 pounds to 155 pounds. His weight cuts for his fights. He does that easily. So I just don't see the need yet to get in and mess with that.

Someday we will. Someday we'll end up logjamming probably at some point. We might weigh and measure and see if we can get some more juice out of it, or we'll just realize that we've kind of reached very near a genetic ceiling and this is as far as we're going to go and now it's about maintenance like the progress is going to be infinitesimal or very, very incremental but we're not going to impact his life in a negative way by sticking a bunch of numerological constraints on what he's eating.

Andy Deas:

Sure. All right. Next question, I like this one as well, blog question from Steve. "Does hormesis have a role in diet? Is hormesis possibly an argument for including non-Paleo foods like wheat, legumes, potatoes, dairy in our diets occasionally? Does the stress of ingesting some type of gluten or other anti-nutrients from these sources stimulate any kind of favorable response?" So I'll probably stop there first, Robb. I'll let you define hormesis for the folks that don't know what that is.

Robb Wolf:

Hormesis is this interesting biological process where an exposure to an irritant or stress on day one immunizes an individual to a similar or greater stress on day two or day three or day five or whatever. This has been really well established with various types of toxins, with radiation exposure, some different things like that, and there's an understanding that things like exercise is a hormetic stressor. Exercise today of an appropriate dose immunizes you against an exercise stress of greater magnitude on a subsequent day, and this is to some degree where we start seeing a lot of the philosophies of super compensation and whatnot. It's borne out of this hormetic kind of process.

So that's what hormesis is. There's no doubt diet plays a role in hormesis. This is also some of what happens in caloric restriction and in intermittent fasting.

Interestingly, there's also a hormetic effect of simply eating a meal. When you eat a meal, there is an inflammatory response and this is regardless of what the composition of the meal is and this is actually something that we're going to be looking at in the future with regards to some of the label claims of like the molecularly baked goods that Barry Sears has, but that's another show entirely. But yeah, there is a hormetic effect that is based around food.

Now, the question is is there an argument? Is there some sort of a benefit of consuming irritating foods like grains, legumes, and dairy? Is there some sort of a beneficial adaptation? I would generally say no unless --

Somebody in the military who I've had this email quite frequently, the individual is a 3 on, 1 off CrossFitter, Paleo, weighed, measured Zone, very detail oriented, dot the I's, cross the T's. This individual has been eating this way for six months. They get deployed. They eat an MRE and then the individual has the trots for a week. And they're like, "What the heck happened?" And what happened is the individual's gut, the GI tract has healed and then it has responded to that gluten the way it should. It's an irritant and it essentially gives them what's indistinguishable from food poisoning, and the GI tract is trying to move all that stuff out.

Now, these individuals would probably benefit, someone who is facing deployment or like a special operations community individual who could be here today, deployed tomorrow, they should probably keep a piece of toast or a cookie or something like that in the mix all the time to keep their guts kind of low level irritated because they can't really afford to have the trots and be in deployment.

Short of that though, in my opinion there's no beneficial adaptation to exposing yourself to these foods in a desire to have some sort of adaptation. Think about this way. Is there an argument for a hormetic effect of going and rolling in poison oak or poison ivy to get a rash on your body? I can't think of any but this is indistinguishable from what the kind of gluten response, the lectin response is in your gut. It causes inflammation, it causes damage, it causes an immune response, it causes swelling. I can't wrap my mind around any situation in which that would be a benefit other than the deployed or facing deployment military

individual who can't really afford to have some sort of a GI problem while in theater. That's the only thing that I could think of.

Andy Deas: You just compared poison ivy to eating gluten.

Robb Wolf: Yeah. And, you know, when I was doing the nutrition certs and in the future when I'm doing my own seminars, this is something that I think makes this a little more understandable for people. The poison oak and poison ivy, the irritant in that is a long-chain fat that goes through the skin and then it has glycoproteins on it that irritate the hell out of the immune system. And the rash that results from poison oak and poison ivy is actually a response of the immune system. It's not the oil itself that's causing the problem. It's the immune response.

Same deal with like mosquito bites. The saliva of the mosquito, that irritates the immune system then you get a bunch of inflammatory cytokines that are released and a big red welt. This is very, very, very similar to the immune response that happens in the gut when we're exposed to gluten and other lectins, when we get an irritated leaky gut sort of scenario.

So people can kind of wrap their minds around this concept of like poison oak, poison ivy, get a rash, irritation. There's something in the poison oak or poison ivy that is irritating that causes it. It still is kind of a leap of faith for people to understand that a staple food has stuff in it that is similar in its action on our body to the irritants in poison oak or poison ivy, but that's in fact the case.

Andy Deas: Nice! Well played.

Robb Wolf: Yeah.

Andy Deas: Well, Robb, I think we're at an hour and 5 minutes so I think we're going to call it good enough for Episode 6 unless you have anything else you would like to share.

Robb Wolf: No, no. That sounds good to me.

Andy Deas: Awesome! Well, with that Robb, thank you very much and that ends Episode 6, Paleolithic Solution. We'll talk to you next week.

Robb Wolf: Right on. Thanks, Andy.

Andy Deas: All right. See you.