Episode97

Robb Wolf: Hey, folks. Robb Wolf here with Greg Everett, and if you can believe it, we have Dr. Kurt Harris here.

Doc, how are you doing?

Dr. Kurt Harris: I'm doing just great. How are you guys?

Robb Wolf: Good. Good. So both of you guys discovered that Skype has a text messaging function today I guess.

Dr. Kurt Harris: Yes. So if nothing else Greg taught me how to text message with Skype so....

Robb Wolf: Nice.

Greg Everett: No more important skill in life.

Robb Wolf: It's a transferrable job skill. I don't know if folks remember, but we dangled the carrot out there in the interwebs back in February to have Dr. Harris on the podcast, and we had 308 responses in that thread, people asking questions. And then Doc was kind enough to come on and answer a lot of those questions at that time. That's one of the biggest threads that we've ever had on here. So obviously, you're super popular. And then when I tweeted this morning and said that we're going to be doing the podcast, somebody coined you "the honey badger of evolutionary medicine."

Dr. Kurt Harris: Well, that relates to what somebody said somewhere, "I like him. He just doesn't give a shit." And then at the exact same time there was this viral video of -- there's this guy, this flamboyantly gay guy who does these -- he'll take these nature videos, and he does his own voice over not the original voice over, and he'll do honey badger shark, whatever, and they're just -- well, you'd have to listen to him, but they're pretty amusing. And he did one of the honey badger and over and over he kept just saying, "The honey badger, he just doesn't give a shit." And he would just keep saying it.

Robb Wolf: I figured that that's what it was, but I wasn't sure if this was some sort of a highway rest stop toe topping kind of code that was going on my Twitter feed. Okay. I suspected not. I figured it was because you're a

badass blogger even though we haven't seen you on there in a little while. But I didn't think that --

Dr. Kurt Harris: Well, it was actually a self-deprecating thing that I directed at myself, but if the shoe fits, whatever.

Robb Wolf: Nice. Nice. Well, you obviously don't give too much of a shit if you agreed to have your name associated with episode #97 of the Paleo Solution podcast. So we're hugely honored that you're on here.

Doc, give the listeners a little bit of an idea about your background as a physician and how you came into this whole evolutionary biology concept and ancestral diet and then maybe a little bit of an overview how you first landed at this concept, and then you've obviously grown and evolved your ideas a ton since that inception.

Dr. Kurt Harris: Oh, yeah. I've grown my ideas enough that the internet is just divided into the people that hate me for what I used to think and the people that hate me for what I think now. So I've got that balance finely honed. But yeah, the way my background is as a radiologist, actually a neuroradiologist which is the subspecialty of looking at -- the way Emily Deans actually knows neurotransmitters in the brain. My specialty was knowing what the structures look like on pictures, if there's a tumor and something, brain imaging, CT, MRI, a lot of vascular imaging.

So I was a radiologist; the medical doctor that sort of looks at pictures of various body parts and tries to see if there's disease there on the macroscopic scale. That's something that you get your MD, and then you do residency training, and I did fellowship training. I actually have an academic background as an assistant professor for University of Iowa for two years and did a fair amount of research actually, clinical and bench research. I was thesis adviser in the department of biomedical engineering at University of Iowa and worked with Ellen.

So I did basic bench research there and participated in some of that stuff, did clinical research for a couple of years. In academics, a lot of times what happens is you'll have -- there's a process where you review papers and most of my experience with that is usually the senior guys will kind of give the junior guys the actual work to do. So for instance, for the journal's spine, you won't ever find my name as a reviewer, but I would get handed articles by the senior guys, and they'd say "Kurt, review this for the editor."

So I did that for a number of different journals for a couple of years, and I got, I thought, recently good at finding holes in what was wrong with the research. Of course, I've spent some time on the other side of that too having the stuff that I wrote picked apart and told why I didn't know what I was talking about. So I could bore you with the details of my whole life, but basically I'm a doctor; I'm a radiologist, and I have a research background that extended from when I was a medical student through when I was assistant professor which was close to six or seven years. I spent a lot of time reading and writing papers, and that's been a while. But that interest stayed with me the whole time.

Then as I frequently pointed out, I heard of Good Calories, Bad Calories. I had no particular health problems I was anxious to solve, and I wasn't obese or anything. So I heard this book being discussed on the radio, and I read it and that led me to read other things. And it's quite obvious to anybody that's paid attention to my comments in the blogosphere, my views have progressed quite a bit since then and pretty much in the step-wise fashion. It wasn't really all at once. So it's just kind of an evolution.

Robb Wolf: I just have to throw out there, Mat Lalonde who is about as critical a thinker as I've run across anybody; he really loves a lot of your work, both you and Stephan Guyenet. He's felt like a lot of your blog posts with a tiny bit of additional tinkering should have probably been submitted to any one of a number of journals. So you're doing some amazing work when you're pumping that stuff out which obviously you've got a great background in it.

Dr. Kurt Harris: Yeah. I appreciate that. That means a lot to me. The cool thing is that Mat -- I've never spoken or communicated with him at all, and I stumbled across -- I don't know -- somewhere I found he quoted me on something a while ago and then, yeah I didn't know who is this guy? And then I heard him on -- I guess I listened to his Jimmy Moore interview. Wow! This guy thinks just like me. So there's finding somebody that comes at it from a completely different angle like it was actually -- let's face it. I'm not a biochemist, okay. Radiologists aren't biochemists and increasingly my angle is more of reading Paleo, anthropology and archeology.

Mat Lalonde seems to come at it from the more micro detail; he being a real chemist. It's cool to me when you hear somebody that has a completely different background and their kind of big picture look at things is very similar. So yeah, it's mutual. I think a lot of that. I haven't listened -- it would take a long time obviously to listen to all the AHS talks, but Mat's and yours and Lustig's works that I have listened to and they're all excellent. I felt like there's a lot of synergy there.

Robb Wolf: Thank you. Thanks. Yeah, I thought Lustig's was -- there were a ton of really, really good talks, and I think Lustig's was the grand slam homerun of the AHS for sure, in my opinion, so yeah. Oh, cool. We had almost 300 questions for you, so we'll start picking these things apart. And then when you're ready to tap out, we'll just can it, and then maybe we'll get you back on here in a couple of months and revisit this stuff. I'm sure you read Zen and the Art of Motorcycle Maintenance.

Dr. Kurt Harris: Yes. It's funny you should mention that because that was the first book that had any philosophy in it that I read. I was in 9th grade. My dad was an enlisted man in the navy but he's a very, very bright guy, and he actually went to college after he got out of the navy. So my dad was actually in college when I was in 9th grade and brought that book home. I was like, "What is this?" It had its cool illustration on the cover. I read it for the first time in 9th grade, and I think I read it two or three times since. Yeah, that actually got me started thinking about philosophy and philosophy of science at a pretty early age. So that book made an impression too.

Robb Wolf: Well, and consistent with that I'm sure you'll answer all these questions, and then you will spawn two to four questions for every one that you answer. So we'll guarantee end up having folks want you back on here. I'll throw this first one at you. It's kind of a beefy one. This is from Alexa.

She said, "It's cool to have you all getting Dr. Harris on the show. I've been digging his blog. My question on the new post about fats he lists the order of preferences for optimal sources of fats. He lists grass-fed ruminants first and industrial raised ruminants second. I've done organic heavy whipping cream in the past in my coffee and tea and love it. After getting more into Robb's stuff I went back to black.

I recently have added coconut milk in my coffee and tea to get in some extra fat rather than having snacks like nuts or fruits throughout the day. I've been on the hunt for grass-fed cream locally since reading your blog, but I can only find local goat's milk and cow's milk. Neither farm has a timer capacity for cream. So in your opinion, would you opt for organic but grain-fed milk from cows, local raw goat's milk or cow's milk, or stick with the coconut milk?"

Dr. Kurt Harris: Wow! That's a lot. I'm trying to keep track of all the elements of that question there. What were the three choices at the end? It was goat's milk --

Robb Wolf: I think it really boils down to would you recommend really gutting it out and really trying to find grass-fed whole cream, organic whole whipping cream, which I mean you can find that almost anywhere. Any Trader Joe's is going to carry that. And then I think the final one would be nonorganic whipping cream, and then we've got just standard milk at the end of that like organic milk.

Dr. Kurt Harris: Let me answer that the way I answer a lot of those questions. Like in one of my parallel lives that keeps me from blogging about nutrition is I'm a very active investor in -- and this isn't in the blogosphere really that much so don't go look for it. But I advise a lot of people with stuff like that. I will usually answer questions like that by saying I'm uncomfortable telling you what to do, but if you want to, I'll tell you what I do, and you can draw your own inferences.

So what I do is where I think it's important to have -- the organic, I mean to me, doesn't mean a whole lot. I think in terms of vegetable quality, it probably does. I'm not really convinced on the dairy front that it matters that much, and I think that the thing that matters to me is pastured or grass-fed. I get butter which is pretty similar to Kerrygold. I get it from a place in Minnesota that is pastured. Actually, that's sort of organic too.

What I was going to say is the grass-fed beef and lamb that I eat is not certified organic. It could be sort of organic, but it's just a bunch of bureaucracy for the farmers to -- they have to pay extra money to get it certified and all that stuff so to me that, label being organic doesn't mean that much in the dairy realm. What I look for is grass-fed because that's where you're going to have the more optimal in 6 and 3 ratio you're going to have CLA, and yet if they tell you at the same time we're not giving any hormones and that's of some concern to you that's a bonus. But to me just the grass-fed part matters the most.

So it not ought to be not hard to find -- it depends if you're in a metro area or whatnot, but where I live -- so I eat -- all my beef, my ruminant fats, the beef and the lamb they're all grass-fed. They're not necessarily certified organic, but the farmer, I know him personally, he doesn't use any hormones or anything. Then my butter which is a big source of my calories and I eat at least some of it every day; my butter is all completely grass-fed, certified organic.

Then probably the third source of fat for me is cream. My cream is just stuff I buy at the grocery store. So that's what I do. I mean if that's what you want to do, that's fine. But I don't -- the cream is mostly just fat. So your 6 to 3 ratio if you're getting two or three tablespoons of cream a day

as long as everything else is okay, that's never really going to effect it very much. So I don't know if it's worth the effort to go to the nth degree. And increasingly, I don't go to the nth degree on a whole lot of things, and my approach has more and more gone to just avoiding things that are bad and just to try to super optimize the things that are already good.

Robb Wolf: Right. Totally agree. Great stuff. This one is from Rob, with one B. He says -- there are actually three questions here so I'll ping each out to you individually. "If cholesterol does not cause heart disease, what exactly does cause heart disease and heart attacks?" That's like the shortest question with the longest potential answer I could possibly imagine.

Dr. Kurt Harris: Yeah. I diverted from really thinking about that a lot. The whole carbs and insulin thing seems to the current battlefront in the nutritional orgs right now which is something I didn't really have that much of interest in. In the first place, I kind of started out more interested in heart attacks. What does cause heart attacks? Well, dietary cholesterol doesn't. Saturated fat doesn't. There are things that do.

I don't think we know exactly what causes it. I could give some reasoned guesses. The one thing I would say to Rob with a single B is to -- of all the people that I read that is skeptical of the old-fashioned diehard hypothesis and the limited hypothesis; there's one person that every time I read him I think, yeah, that guy is on the right track and that's Chris Masterjohn. So I would encourage just go read Chris Masterjohn. Otherwise I could regurgitate what he says for 15 or 20 minutes, but I with minor variations, could recommend anybody just read Chris' writings on that, and I think that's pretty close to what the truth is going to be.

Chris may not talk exactly that much about specifically what you can do, but I think that there are things that come -- we know there's an association with obesity and metabolic syndrome. Why would that be? Well, because I think that the association there has something to do with eating too much. I'm going to use the dreaded phrase "energy balance." Energy balance meaning taking in more than goes out.

I don't think that's something that happens by accident. You don't accidentally bump into calories and get fat like some people seem to think. But I do think it's driven from the demands side, and it's affected by food quality. What could some of those things be? Well, wheat, fructose and linoleic acid on my blog. Those things have something to do with overeating, something to do with having too much energy going to the system.

A person with too much energy that goes into the system tends to get obese as a defense against that extra energy, that extra energy coming in. That explains why a person can become diabetic without looking obviously obese, the so-called skinny fat. It also explains why a person can be obese because they're getting fat as a defense. They haven't started to have that excess energy status affect their inflammatory state and so on. But it also probably sounds kind of vague when I'm saying it, but I'm saying so what can you do to prevent heart attacks?

Clearly, if you are not eating so much that you are prone to gain weight, and you're at an optimal weight, and you're also not skinny fat, and you don't show signs of insulin resistance, clearly that's going to do a lot to reduce the risk of heart attack. When you see people that are having heart attacks that are skinny, there are a couple of things going on. One is genetics. They're probably not as genetically resistant to whatever it is that causes heart attacks.

And number 2, they're problem skinny fat which is to say if you did a CAT Scan on them and looked at how much obesity they have around their organs, it's probably more than you'd think looking at them. They probably look thin, and they have more fat than you think, more visceral fat than you would think, and those people are going to be more likely to have a heart attack.

Now, this is pretty speculative but there are other people that have got some more thoughts including Stephan Guyenet that I think that seed oils in excess, that are outside of our evolutionary experience, have something to do with both atherosclerosis accelerating and probably also with the likelihood of having a heart attack. And of course, a heart attack is when you have a plaque rupture and you have thrombosis. That happens on top of atherosclerosis.

So it's a two-step process. You can have atherosclerosis that shows up on a CAT Scan or on a coronary ultrasound, and yet not have a heart attack. With cocaine abuse and so forth you could have a heart attack without having atherosclerosis, but that's pretty rare. Usually, it's two steps, but it is two steps. You can't just have atherosclerosis. You got to have something on top of it to have a heart attack.

So what causes heart attacks? Again, I'm pretty sure eating saturated fat per se doesn't cause a heart attack. I think if we're going to point a finger at a fat that might contribute to heart attacks, it might be n-6 or excess linoleic acid. I'm talking even 15% of n-6 versus 2% or 3% or 4% or 5% or

6%. That might have something to do with it. That's based on epidemiology. That's based on thinking about theoretically how that could happen but that is not -- even that's at a stage of a theory really. We can't really say for sure.

The thing I like about reducing n-6, there is just simply absolutely no downside to it. You got a faction out there including I guess Walter Voegtlin who think that eating more n-6 actually prevents heart attack, I think that's a pretty dangerous idea. I think other than some of those opinions, reducing n-6 as much as possible is the one thing that's completely free. I just can't see any downside to it.

Nobody says, "Well, drinking peanut oil, I can't give that up." I understand why it's hard to give up bread and pizza but who says "I can't live without soya oil"? That just doesn't make any sense. So trying to prevent heart attacks, don't do whatever it is that makes you fat or diabetic. That's step one. Step 2 I would think reducing n-6 and what else can you do? I'm not sure there's a whole lot else you can do, trying to keep proper micronutrients in your diet. I'm sure there's something to that. But we don't want to spend the whole interview talking about everything that could be done. But those would be the major things I would think of.

Robb Wolf: And maybe like a lifestyle. When you're talking about energy regulation and whatnot thinking about like a sleep debt, probably some sort of a lifestyle input that could be problematic, vitamin D. Like when we start drilling in there's a ton of stuff.

Dr. Kurt Harris: Yeah, some of those things I agree. Some of those things to me are the givens, and I constantly chastise myself for not saying get enough sleep. But I kind of picture the people that ask questions like, "Should I go for grass-fed goat's milk," I'm assuming that they're already paying attention to things like sleep because without sleep none of these things make any difference.

I can tell you that from personal experience being in a profession where -- well, for a five-year period during my private practice career, I was on call every other night and none of these diets here probably would have made a whole lot of difference. I probably got more benefit out of just not being sleep deprived half of the time than anything else you could do.

I'm totally with you there, Robb. That's something I neglected to talk about right about. Maybe it's because I got my sleep by career changes, and I just assume everybody has got that dialed in. But yeah, I couldn't

agree more, keeping your cortisol levels appropriate and not being exhausted is going to be key, yeah.

Robb Wolf: The obvious piece is funny because when I spent three months outlining my book, did all this writing, banged all this stuff out and then was sitting down looking at the book and then started getting -- it's kind of funny question seem to come in in kind of cyclic fashion, and I started getting a bunch more questions about saturated fat and cholesterol and heart disease and all that sort of stuff.

And in all of my outlining and in all the process of writing the book, I never once addressed cardiovascular disease initially because it was just such an obvious deal. It's like if you eat this way, then you're not going to get cardiovascular disease. It's just a done deal. So I had to sit down and like, okay, so we need to include some treatments of cholesterol and cardiovascular features which I had completely ignored. So I'm right there with you. I can see all that.

So another good question that Rob with one B has, "It seems there are a lot of reports that long, slow distance exercise does not prevent heart attacks. What exercise does the heart want in order to fight heart disease?

Dr. Kurt Harris: I think the key to understanding the whole thing with exercise is just one word and that's hormesis. If we think of things that are hormetic, meaning it's a little bit -- the definition of hormesis is something that's stressful for your body but in a certain amount the stress is not benefiting you, but your body's natural built-in reaction to the stress is something that makes you stronger than you would have been otherwise.

So what are examples of that? Aerobic exercise, so-called aerobic exercise, I think can be a benefit, certainly strength training, CrossFit type stuff. Robb, I'm sure you see people get burned out over training all the time, and I'm sure that in your explanation of why they shouldn't do that explain that the benefit is coming when you heal or recover from the workout; it's not happening during the workout.

Robb Wolf: Right.

Dr. Kurt Harris: So the reason I write posts about how long distance running not only doesn't prevent heart attacks but actually causes myocardial damage is because I think it does. So what amount of exercise is good for you? The answer to that is whatever amount of exercise you can recover from and pay attention to your body's response to it.

I have a couple of friends that are serious athletes, but I've got one friend who is a long distance kayaker, and I asked him that question a long time ago. I said, "How do you tell if you're overtraining?" He said, "It's easy. What's your resting heart rate when you first wake up in the morning?" Well, mine is about 48. And he said if you find you start to find that you've made a change in your exercise routine, and you're waking up in the morning and it's 54, 56, 62, 68, and there's not some other obvious reason for it, you're probably overtraining because that's cortisol, okay. That's cortisol acting via the adrenal access.

If you've got adrenaline increasing that much when you wake up in the morning, that's a sign of overtraining. I'm sure you know a whole bunch of more science of it than I do, your ability to lift weight goes down instead of up. You feel irritable, stressed, tired, whatnot. So trying to put a quantitative number on it is hard.

Again, I'll go to what I said, I can't tell you what to do. I can tell you what I do. I run a 5k every other day pretty much without fail, and no matter what else is going on with my life that's not -- I mean even at age 50 that's not going to be overtraining. I'm going every other day without really doing much of anything that's too strenuous, and a 5k is certainly not too much. I would never argue that that's anything but good. But there's a pretty big difference between training for marathons running 50 miles a week and doing a 5k every other day. I'm sure the inflection point from benefit to harm is probably in there somewhere, and I don't know where it is exactly.

Robb Wolf: Yeah. I'm sure we've got some sort of a U-shaped curve on that where some -- we get a training effect; we get a decrease in heart rate; we get an improvement in cardiovascular function up until a point where we don't. There was a really nice study; it was a huge study where they looked at Olympic athletes, and they just published this maybe two days ago.

It didn't see any increased rates of cardiovascular events in everything ranging from Olympic weightlifters, wrestlers, boxers until we started seeing the really long duration, things like the marathon, triathlon and things like that and then you saw shocking increases in cardiovascular events, atrial fibrillation and stuff like that.

Dr. Kurt Harris: Well, that shows you how out of touch I am and could you send me a link to help me.

Robb Wolf: Absolutely, yes. Yes.

Dr. Kurt Harris: I'd love to see that maybe even plug about it. I've got another study too. I did running -- what did I call it? Running causes heart disease or whatever, part 1 and part 2. There's a part 3 to that that I wrote part of and didn't publish yet, and that was a third study. They have looked at really hard core marathoners and had controls that didn't run marathons. And these were guys instead of it being like the second study I talked about where it was a variety each person had run at least two or three marathons.

Each of them had run like a dozen marathons, and that was really interesting. They had I think half to two-thirds -- it was a very small study. You wouldn't think it would have enough power. I think it was a dozen in one group and a dozen in the other. Of the hard core marathoners, half of them -- now, remember, these are all asymptomatic. Nobody's presented to the doctor with chest pain or had a heart attack. They had a dozen, I think, in the hard core marathon group and either five or six of them had myocardial damage on the cardiac MRI, and of the controls, not a single one did.

So silent myocardial damage happening with marathons. I think it's real -- there's at least three, maybe four studies if you count one that I've only seen in abstract form, that showed this. What's the advice? Is it don't run? No. Just don't run marathons. If that paper you're alluding to now says what I think it's saying, that's pretty much saying the same thing. Do CrossFit a couple of times a week. Don't do it every day. It's pretty much commonsense. Just like if radiation -- one of the things Stephan and I both talk about is how eating -- I mean Stephan published the major clip.

But the reason eating lots of green leafy vegetables and stuff that has antioxidants is good for us is actually because of the oxidative effect that they have in our body, mouths, and antioxidant response. It's not the antioxidants in the food that does it. Does that effect go away if you eat 40 big ass salads a day? I don't know. But the other thing is that we know that hermetic-like exercise, too much of it is bad for you and radiation too much of it is bad for you.

So it would be reasonable to think for anything you think is hormesis, to think there's some level at which -- yeah, it's the U-curve, there's some better than nothing, but that doesn't mean you should just take it to extremes.

Robb Wolf: Right. I wonder how that pains juicing.

Dr. Kurt Harris: Yeah. Juicing or 30 bananas a day, yeah, exactly.

Robb Wolf: Yeesh. Yeah. That's a whole other show stuff. I dig it, the great answer on that. Let's see here. Joe says, "I have a question concerning your last blog post on your blog which was back in February, but I've always been under the impression that the brain could run efficiently on ketones. But in your post on carbohydrates you unequivocally state that glucose is necessary for optimal brain function. Am I mistaken in my belief that you do believe that ketosis is dangerous for brain function? How would you situate ketone bodies in your classification of fuel?"

Dr. Kurt Harris: Well, the thing to know is that the brain requires glucose in an obligate fashion, meaning it's not an option. The brain has to have glucose. Where ketones come in is that of the fraction of energy -- instead of having it be all glucose you can substitute -- I don't know what the number is, 50% or 60% let's say, of the energy requirement can be made up for by ketones. That's an adaptive response to starvation, okay, to the degree that being on a very low carbohydrate diet or constant ketosis all the time. I'm going to take a tangent here that doesn't directly answer the question.

Robb Wolf: We like tangents.

Dr. Kurt Harris: What's that?

Robb Wolf: We love tangents.

Dr. Kurt Harris: Okay. I'll try not to make it too long. We just got done talking about hormesis, okay? This answers the question to what people say, "Why don't you think you should be in ketosis all the time? If ketosis is good for you, why shouldn't you just stay on a ketogenic diet?" Because it's hormesis. It's hormetic. It's hormetic to be in ketosis. It's probably hormetic to do intermittent fasting. It's probably hormetic to have reduced meal frequency or go 16 or 18 hours every day without a meal versus snacking, right? That's probably hormetic.

Taking to extreme it's called Auschwitz. It's call starvation. That's the extreme of not eating. In the same sense, I think ketosis is good for us to do once in a while. It's something that naturally occurred during our evolution. I don't buy the hypothesis. What I'm just saying is periods without food were not that unusual, and so it's logical that that might be good for us. But staying in ketosis all the time is not good for us just because some ketosis is good for us.

Now, back to the question regarding the brain, in order to conserve glucose and why do you want to conserve glucose? We want to conserve glucose because when we're not eating glucose what do we use to turn the glucose? We use protein. We use amino acid. Where do they come from? They come from our muscles, right? So instead of tearing down muscle, your body is thinking, well, there's natural turnover of amino acids even if you're not doing it from its turnover. We want to be able to put amino acids back into the muscle to keep the muscle up rather than divert amino acids right to glucose.

So to the degree that we can take energy from both -- my understanding of it it's been a while you're diverting energy both from amino acids and from fatty acids in order to make ketone bodies, right? So to this degree you cannot use up the amino acids and burn ketone bodies instead you're sparing the glucose. Why do you need to spare the glucose, through the brain. You're actually making the glucose -- the brain has the ability to burn ketones so that it can last longer on the fuel tank of glucose that it's got whatever the source of the glucose is. The glucose we have is going to last longer. That's an adaptive response.

Now, the second part of that is it so happens that neurodegenerative diseases, a whole bunch of them, I would probably refer you to Emily Deans evolution of psychiatry for more detail about this. What happens in a variety of neurodegenerative diseases is function very well in handling energy. We've often called Alzheimer's diabetes of the brain. It seems to be characterized by the inability to handle energy substrates efficiently.

One of the cures for all of these, and it includes Alzheimer's, Huntington's, Parkinson's disease, maybe the variety of Parkinson's dimensions that are not Parkinson's disease, anything where you got neuronal dysfunction can theoretically be helped to the degree that has something to do with not handling energy substrates by substituting ketones for glucose.

So that's why even though I say a normal person should not -- because it's too much hormesis which is bad, a person who has a neurodegenerative disease may, because of the way their brain functions, may function better by substituting ketones for glucose 24/7. So then you're getting into a therapeutic ketogenic diet which to me is the same as saying you're Type II diabetes. You've lost beta cell function. Now you may benefit from being on Dr. Bernstein's diet. That doesn’t mean that everybody should go on Dr. Bernstein's diet. That's how I look at that.

Robb Wolf: I'm glad you tied that around because definitely this is the emergent kind of refinement of all this understanding. I know for me just being in a gym and having come out of a research area that was really focused on lipid metabolism and autoimmunity and cancer, everybody that I was exposed to was insulin resistant Type II diabetics, like just virtually across the board. Even if they weren't diagnosed as Type II diabetics, all that they needed to do was wander in to their doctor and they would be anointed a Type II diabetic.

So everybody that I encountered had the same problem. A low-carb Paleo type diet was the solution. So then they always hammer on surgeons. If you only have a hammer, the whole world looks like a nail. My whole world basically boiled down to low-carb, Ketogenic type diet is the cure for all problems. And then you start getting into a population of people that are doing, say, like CrossFit and some stuff like that, very glycogen demanding activities, and we start getting some hypercorticism and some other problems as a spinoff for that because fundamentally we've got a completely different scenario.

Dr. Kurt Harris: Sure. My own experience with low-carb -- I wouldn't say I was on a ketogenic diet. I was on kind of like Lutz's diet, Life Without Bread. I would say 70 grams or less of carbs, sometimes as low as 30 or 40. I'll tell you I'm not making this up. I had no adverse symptoms at all except for two, okay.

I had a little bit of orthostasis. My blood pressure was a little low. Let's say I'd go to the bookstore after workout while fasting, okay, and I squat down and grab a magazine, and I stand up real fast, for about two seconds I would be a little lightheaded, okay. That was the only symptom I ever had eating a very low-carb diet for two years steady. So I didn't know exactly why that was. I lost weight. I didn't know it was like that before. I didn't think of it much until it went away. The only reason I raised my carb intake, initially, was not because I read some blogger saying I'm going to die or because I had some tachyarrhythmia or because I was gaining weight.

It was actually just the opposite. I had always worked out just a couple of times a week. This kind of maintenance workout that I could talk about where just maybe three times a week I'd run a 5k, then I'd go lift weights, mostly upper body, vanity type, middle aged guy workout, just to kind of keep myself in shape. I had no problem at all doing that with hardly any carbs in the diet.

What did it for me was over a year ago I had a building that needed a whole bunch of work done on it, and now we're talking about work like manual labor, blue-collar work which I am certainly no stranger to. I've been doing that kind of stuff since I was 12 years old. So I go over there, and I don't want to hire anybody.

So basically, for about two weeks I spent about 60 hours a week repairing things, climbing up and down ladders and painting. So I'm working really -- what happened was I just started to drop. My initial weight before I started all this was about 170 pounds on a 5'11" frame, and people said I was skinny back then, but I had a gut. I went down -- over about the course of six months eating low carb I went down to about 149 to 152 pounds, something like that.

What happened when I did this intense manual labor was I just couldn't keep it on. I didn't have enough appetite to keep the weight on, and I was just -- so I dropped I guess -- maybe two weeks I dropped from 152 down to maybe 145. I didn't look good. I mean some people would think in some of the pictures I posted I looked like Auschwitz anyway. But I really didn't look good. I looked older. I lost subcue fat. I thought this is pretty obvious to me. I need more energy. What's the easier way? Do the reverse. Add carbohydrates.

I thought, well, what's a benign carb with -- I can use carbs in my diet. I just ate a big giant bowl or two sometimes of Rice Krispies in the morning and about 70 to 80 grams of carbs and ***[0:41:35] [Audio gap]*** the weight loss, and I gained it back over about the next month or two I would say. At that point, my carb intake was probably, let's say, it had been 7% before. I would estimate it went up to maybe 15%, okay.

So then at that point I noticed, okay, my weight came back exactly to about 152, something like that, and then over the next couple of months I kept eating that way. It came back to about 155. So we're at 15% carbs, okay, remember I started at 170. Where at 15% carbs now, and my weight is 155, and for the first time I noticed this orthostasis went away. Again, it was never anything I would have sought help for or even maybe connected and say, "Oh, it went away. I'm convinced. It's good to have some carbs in the diet especially if you're super active." By that time I had stopped all this intense manual labor but I just kept eating that way.

So then I took the experiment further and I thought, okay, let's see if the macronutrient ratio really is the thing that does it. I'm going to keep eating no wheat; I'm going to keep not eating excess linoleic acid, and I'm going to limit the fructose. I'll eat an orange or whatnot now and then,

but I'm not going to be adding sugar to my diet and still no liquid calories including milk. I haven't drunk milk for three years. I had cream with the coffee but no milk.

So what I did was, and you're probably hearing it first, but I raised my carb intake to 40% to 50% range. Now, that's not really that high. That's not Kitavan level carbs, but when I went to 170 my carb intake was probably only 40%. I was already eating a lot of meats. So the result of the experiment was I went back to a carb intake at or higher than when I started that. Yesterday morning I weighed myself, and I'm 154 pounds.

So 16 pounds of weight loss maintained with a carb fraction with -- okay, this morning the only thing I had to eat, I ate two bananas, and I had a little bit of cream in my coffee. I have rice or potatoes in virtually every meal and I'm guessing 40% to 45% of my calories is carbs. I still eat plenty of -- all the fat I get is still animal fat. All I've done is just back off on some of the butter and cream -- basically, the fat content is the same constituents, but it's gone down, and I've substituted starch for animal fats.

To me that's the lesson is on an evolutionary basis, we are designed to eat either starch or animal fat, and it's a horse a piece. You could toggle the food in your diet the same that your cells can toggle between fatty acids and glucose, and I don't think that's an accident. I think we're designed to eat that way. So there you have it. That was my macronutrient experiment, and that's what put the nail on the coffin for me as far as the carbohydrate hypothesis. I always said I don't think it matters that much, but I had to do it myself before I could say, "Wow! Yeah, you can really maintain your weight loss just eating the whole foods Paleo type or real foods diet."

I don't think the element there that makes most people lose the weight is starch. The element is that a low-carb diet reduces agents of disease, as I call them, and maybe especially reduces the food oracle which is something Steph blogs about and which I'm a believer in at least in terms of it being a way you can lose weight. So another long-winded answer for you there.

Robb Wolf: I dig it, and I'm sure that Greg could probably warm up to the Rice Krispies breakfast pretty quickly. I know a bunch of people are going to want to know what did you eat your Rice Krispies in if not milk?

Dr. Kurt Harris: Oh, yeah. Usually, it's half and half. Yeah, it might be fractionally slightly low on the protein there but, oh, yeah, there's plenty of fat there, lots of

calories. Obviously, an old sprinkle of sugar should on it. It's generic or brand Rice Krispies. There might be two grams of sucrose in a giant bowl. It's mostly just plain old toasted starch from the Rice Krispies, and then the rest of it is half and half.

I'm going to ballpark and say if you use a pretty big bowl, you're probably talking about -- how much? Maybe 50 grams of starch. It's like probably a cup and a half of Rice Krispies, and you're probably looking at 400 calories from the half and half. You could just do whole cream if you're afraid of casein and stuff like that too. That would work. And it's fast. It's fast and quick and dirty.

Robb Wolf: Yeah, it is. Greg, could you warm up to that for breakfast.

Greg Everett: Yeah, although I was kind of hoping he was going to go Revenge of the Nerds style and just pour beer into it. I guess it could work with half and half.

Robb Wolf: Wasn't that what Booger had?

Greg Everett: Yeah. Cheerios with beer I think.

Robb Wolf: I could warm up to that. I'd be pretty excited about that.

Greg Everett: I mean you can get gluten-free beer. It's not a big deal.

Robb Wolf: It's true. It's true. Breakfast of champions for sure. Okay. So ABP says, "Dairy. Wolf and Harris in a cage. Go."

Dr. Kurt Harris: What was that? Dairy?

Robb Wolf: Yeah, dairy. Wolf and Harris in a cage. It's really funny. Mark Sisson was super kind and had me on his site a couple of weeks ago. And there's this funny thing out there because my kind of protocol is remove grains, legumes, dairy, go 30 days, reintroduce. Yeah, you do. And because I set up this 30-day roadblock where I'm like, "Why don't you see if you are really reactive to this stuff and then reintroduce?" because I make that recommendation, apparently I'm the anti-dairy guy.

I think a lot of people end up having problems with it, and I think that a large majority of people end up discovering that they do better without it than with it. They discover that butter and cream is either benign or only minorly irritating. Some people not so. They end up noticing a lot of problems with it. But it's funny there is this perception that I'm just like

the anti-dairy dude across the board when it's really just a thing of -- I make the exact same recommendation with corn, but nobody is up in arms about me saying you should remove corn for 30 days and then reintroduce.

Dr. Kurt Harris: Yeah. Well, Robb, it seems like we're both aware of it. It's nearly impossible to separate describing what we do from describing what we recommend as well. In my case, I'm perceived as the pro-dairy guy because I eat it even though I keep saying over and over your mileage may vary. If it bothers you don't eat it, substitute something else. The same thing with VLC, I'm painted as the VLC guy because for two years I ate VLC, but I don't remember once ever telling something they had to eat VLC.

The first time somebody said, "What do you eat?" The first thing I said is, "This is what I eat, not necessarily what you should eat." It works for me. You have to pay attention to n=1 in terms of if it obviously is bad -- I mean you can't use the n=1 to tell if it's good for you, but you certainly can tell if it's bad. I mean if there's something obviously wrong, you need to suss out what it is in your diet that's causing that.

But one of the hang-ups for me with telling people, "Yeah, go ahead and eliminate the dairy" is before I came around to thinking starches are definitely okay; the question is if you're not going to eat dairy, and you're not going to eat grains, and you're not going to eat legumes, what exactly are you going to eat? It's pretty hard actually to get up to 40% or 50% carbs, to say nothing of 60% or 70%, is basically impossible without so-called safe starches. You just can't do it.

So now I can see how it's much easier to eliminate dairy than I thought what it might be because the easiest thing to do is to say, well, if it's okay to eat Rice Krispies or something made with rice flours, some kind of candied cigarette made with rice flour or if you're going to eat plantains or bananas, basically starchy fruits or sweet potatoes or white potatoes, it becomes pretty easy to take dairy out of the diet then. In fact, I tried it myself ala your recommendation, tried nearly eliminating it for a month, made absolutely no difference one way or the other.

So I'm a person that my dairy consumption is pretty much limited to butter and very small aliquots of cream. I've never really been a milk drinker. The whole theme of dairy causes cancer, causes heart attacks; I still don't buy any of that. I still haven't seen any evidence of it. But I have no difficulty at all with saying as an induction to Paleo way of eating

totally eliminate dairy because as long as you're allowing starches in there and not trying to go low-carb.

I mean you're going to starve yourself if you try to go low carb and no dairy at the same time. You're going to be eating too many poofas or something else is not going to be right. But if you're willing to do it with a decent complement of starchy plant matter, then I would say no problem to it at all. So maybe there's been some convergence there and no cage match is necessary.

Robb Wolf: Well, funny enough we have round 2 of the Harris-Wolf cage battle vegetables. Go. That one was from Meesis.

Dr. Kurt Harris: Okay. Vegetables agnostic, and I don't mean agnostic in the sense people use like when they talk about believing in God. They use agnostic as a nice term for somebody that's actually an atheist but won't admit it. I mean actually agnostic. I don't really know what the optimal level of vegetables is. I know that the people that say we should eat nothing but meat and water are completely insane. I know that I don't think that Dr. McDougal or -- well, what's his name? The disciple of -- I can't even think of the vegan guys. I don't think being a vegan and eating like the gorilla is optimal either. Where is it between?

I think it's best summarized by -- I did that post called William Munny Eats His Vegetables which to me brought it all together and explains why vegetables are good for you not because you have to eat vegetables, but because there's some hormesis in having a variety of plant chemicals in your diet. There probably is some benefit to the fiber, the soluble fiber. But when we say vegetables or fruits and vegetables usually we have this idea in our mind of Mark's big ass salad; it's got a whole big variety in it.

So I assume your question here is what's the final with that? How many colorful vegetables do we need? If we include vegetables to be starchy plant organs, there's usually plenty of soluble fiber in that. So then it would just come down to how many punitively important micronutrients and how much hormesis are you getting from the colorful variety. My own diet really doesn't have a huge amount of colorful variety in it. I mean I probably have a green salad with a whole bunch of colorful stuff in it, maybe three or four times a week.

So again, if you want to do what I do, that's what you could do. But there's no particular reason I eat that way. It has more to do with I don't really like to make salads because I'm lazy, and my wife makes them better than I do. So how often does my wife make a salad pretty much

determines how often I eat salads. It's got little to do with thinking I'm going to die if I don't eat them or that I think plants are all poison. It's just kind of there.

Robb Wolf: Right. It's funny. For a long time, especially when I was much more real low-carb camp, I tried to get a ton of vegetable matter. It had to improved digestion because of not having grains and stuff like that in general, but I still had a little bit of digestive issues and since I've really mitigated the amount of vegetable matter I get, outside again of like I do a lot of yams and sweet potatoes like orange and yellow and purple and all that sort of jive, digestion is better. I don't spend as much time in the kitchen. I don't spend as much time eating, and I'm not as annoyed by my meals like I just get a piece of meat, I get a yam or a sweet potato, I throw some pastured butter on it. Oh, my God! The anti-dairy guy is eating butter. It's easy. It's delicious. I'm like, dude, I could eat this way for 100 years. I have no problem with it. The anxiety around whether or not I'm micronutrient deficient, at this point I just don't care. If I'm going to die next week, I just don't care.

Dr. Kurt Harris: Yeah. And that's one of the things you can kind of if you're into the -- you have to avoid x, x, and x, and you have to be low carb at the same time. That can lead to some funny things like really expensive grocery bills where you have giant sacks of groceries full of really expensive plant matter, and you're worried about getting in the right combination, and what are you going to eat. If you're low carb but you're not eating bread. That's the problem.

If you take the starchy vegetables, the potatoes, out which have a lot of good micronutrients and also have the soluble fiber that might be good for us, yeah, you kind of end up doing some contortions that don't really seem to mimic what a real ancestral diet would have been the way I know about it. Yeah, I'm all in favor of flexibility and variety.

Robb Wolf: I'm looking through the questions here. We're at an hour. Can you hang with us for a little bit longer?

Dr. Kurt Harris: Oh, I can go as long as you can tolerate me.

Robb Wolf: Cool. Greg, are you good for a little bit longer too?

Greg Everett: Yeah, I can tolerate both of you guys for a little while longer.

Robb Wolf: I think Greg just puts us on mute, and then when he sees the signal not coming in on the voice side, he's like, "Okay, and I'm back." So let's see

here. This one I kind of like, from Adam. "Dr. Harris, you've mentioned there isn't as strong evidence against legumes and dairy," we kind of hammered the dairy. Let's talk about legumes a little bit, "versus other Neolithic dangers. Can you discuss that?

Dr. Kurt Harris: Well, I think I'd go back to not having -- I mean I've done quite a bit of digging on dairy, and it's more just I'll read a paper and go, "It doesn't really convince me." I don't have a paper that's a reverse smoking gun that says, "Oh, this is proof. Dairy is okay." I think that's impossible. But nothing I've seen in epidemiology or any of the laboratory science convinces me that dairy as a whole is as big a concern as weight.

Legumes, I would say this. I'm reasonably suspicious of wheat but not as suspicious as I used to be, maybe surprisingly. I try to avoid it because it's easy to avoid, and I don't crave bread. I think it may be that flour is hyper-palatable. Flour has kind of a concentrated bunch of gluten in it. So that if you're not actually celiac, how big an issue is wheat? I would actually -- my hierarchy of nads, I'd probably put it massively excess poofas first, massively excess sugar second -- I don't know. Maybe one is ahead of the other. It depends on how much you're talking about.

And by "massively excess" I think you could probably reasonably eat quite a bit of fruit if it's not watermelon. Fruit that's actually got a 50:50 ratio between glucose and fructose; oranges, stuff like that. Banana is actually more starch than fructose, but it's got some in it. You could eat a reasonable amount of fruit and maybe up to like 50 grams a day of added sugar, and I doubt seriously if that would be bad for you unless you're diabetic.

So I'm not a total Nazi about fructose consumption, but when you're getting -- I literally know people. I know a guy who's addicted to Mountain Dew. I actually sat down and calculated he's getting 35% of his total calories from fructose, not from sugar, from fructose. He drinks so much Mountain Dew. It's like whatever would be one of those 2-liter containers, one and a half of those a day or something. He drinks so much Mountain Dew. He just drinks Mountain Dew all day.

So next in the hierarchy would be wheat, okay. So I've set you up there to say wheat is probably the least important nad per se. White flour may be different. White flour may have effects that help make it hyper-palatable. It's usually combined, obviously, with added sugar even with linoleic acid if you talk about the birthday cake for example. If you go buy a birthday cake, it's literally -- I think Mat Lalonde even made a comment like this.

There are certain junk foods that literally combine all the worst nads in exactly the wrong proportions, and you can eat that way.

So if I think wheat is probably number 3, what does that do with the status of legumes? Well, by inference I must not think legumes is that bad if wheat is no longer number 1 but number 3. I'm talking like whole wheat properly prepared all that. So we need to look at stuff like black beans or pinto beans as long as they're cooked properly, to me the antinutrient issue in those is not that big a deal.

It seemed to me that when we initially -- when I say "we" I mean the Paleo movement that I may or may not be a part of. Dr. Cordain's early books seemed oriented toward saying part of the reason all of the stuff was problematic it was because the starch or carbohydrate content. Well, if we decided that the starch is no longer bad, but starch was okay to begin with, then that removes that. Then we're saying, well, what is it that's really bad about beans? It's the antinutrient.

But as Mat Lalonde alluded to in his AHS talks, you're going to make yourself look foolish if you talk about antinutrients when you realize that sweet potatoes have more than white potatoes when you add them all up. It's just kind of which ones are they? So the antinutrient thing has to be accounted for cooking, and it has to account for the species, and it has to account for the person.

So I haven't gone digging through the literature, but my suspicion level of legumes is low. It's low enough that occasionally when I do a New York strip I'll take a can of overcooked black beans and make a black bean paste, include it all at the top, and it's delicious. I don't think of that as the same as eating bread. I just don't see how. There are too many cultures. There are too many American and cultures in the Americas that practice agriculture where they had not only maize, what we call corn, but beans, starch. And as long as they weren't eating that exclusive to animal products, they seem to do pretty okay with that and probably didn't have a lot of cancer or diabetes or heart attacks.

So it's pretty hard for me to be suspicious of legumes as I have with wheat when the best example we have of wheat is to look at the ancient Egyptians where they didn't have modern processed food, but we know they ate a lot of wheat, maybe even a lot of seed oils, and we have pretty good mummy evidence of atherosclerosis in those people. That's not definitive. What do you think, Robb? Where are you with legumes?

Robb Wolf: Definitely in orders of magnitude less problematic than wheat. For me that one is still -- like a same three the linoleic acid, fructose and kind of gluten-containing items. I call them seitan's excrement or seitan's or something like that. The only people I have seen really problematic with legumes, folks with autoimmune disease like they have overt autoimmune kind of condition going on and a lot of people with GERD, legumes even when they're properly prepared seem to potentially be problematic.

But it's that thing again of eliminate, reintroduce, and like for me I'll have corn two or three times a week, and I could probably eat corn every day and have no problems from it. Beans are a little bit different for me. Like I get some acid reflux from black beans, pinto beans; I don't have a problem really with lentils, but black beans and pinto beans I'll get some acid reflux almost immediately from those guys even if I sprout them, pressure cook them myself.

So for me it's definitely orders of magnitude less bad, and it's just in that same caveat of like, hey, let's just pull it out of the rotation, reintroduce, see how you do. There's some suspicion there, but we really don't know. And then like you've said, it offers enough food variety that if you don't have a problem with it, then just for making life easy and not being complete freak when you're out and about eating with other people, then it just kind of diversifies your options a lot.

Dr. Kurt Harris: For sure. I would point out too that a lot of the times we identify relatively immediate reactions to foods that we're suspicious of. This would include wheat-containing products and legumes. You're probably dealing with fodmap and not gluten. Obviously those are fermentable. I'm not going to ***[1:05:47] [Inaudible]*** acronym.

But basically, stuff that ends up being fermented in your colon if it's contributing to small intestinal bacterial overgrowth, I think that's something that could be very individual and may have something to do with the history of your gut biota. It could be that if you ate black beans for a while you would adapt to it and have no problem and not have any reflux or it could be that maybe your gut biota is altered by the modern lifestyle, and now you can't eat black beans anymore.

So I think that when people say, "Oh, I can't tolerate this wheat-containing thing because it's got gluten in it," well, probably it's the fodmap if you're really having some kind of immediate reaction to it. I know that one issue for me is peaches because they're full of polyols, alcohols. I can eat quite a variety of different fruits without any problem,

but if I peaches especially that's ripe, they'll bug me bad. That's too bad because they're kind of tasty.

Robb Wolf: That's really interesting. We ate at a place, Tune-Up Café in Santa Fe just a couple of days ago, and the guy had some amazing pork spare ribs. He said, "Yeah, it's gluten-free." The barbecue sauce that was actually a peach reduction, and it was amazing but it felt a ton, like what I would normally characterize as kind of a -- not exactly but similar to a gluten cross-reaction, and it was almost immediate.

When I get a gluten exposure, I get kind of some neurological symptom, some weird vision. I mean I'm pretty reactive to the gluten stuff. But it was kind of similar, and I was telling Nicki, I'm like, “It feels a little bit like that but it's not it.” And the dude swore that the whole thing was gluten-free because typically they're really good about that, and I wasn’t aware of the polyols in the peaches. And if you do a reduction, you're just concentrating the heck out of that stuff.

Dr. Kurt Harris: Yeah, and not to mention getting some fructose to it too. I would remind people that it's normal. Nobody has fructose malabsorption when you're talking about fruit -- well, even frankenfruit that we have now. We just can't eat fruit fast enough to overwhelm your digestive system with fructose. I agree with Westig on that.

I'm not saying you should eat 30 bananas a day or live on fruit. I don't think you would need fruits to survive or to live or you’ll get cancer if you don’t eat fruit. But fruit is pretty benign. I don’t think that you can cause yourself that much harm with most fruit. But when you take an abstract, the sucrose out of it, which is what you're doing with cane sugar, if you take a giant bolus -- I'm trying to remember the exact statistic.

I don’t want to misquote it. But I think a bolus of 75 grams of -- is it fructose or sucrose? I think it's 75 grams or more of fructose -- yeah, 75 grams of sucrose, 50% of the normal asymptomatic population will have a positive hydrogen blood test if you give it to them. That means that's malabsorption. So it's normal to malabsorb fructose, and that is going to go to the colon, could cause CIBO, could cause abnormal growth of the commensal organism that we know as -- the one that everybody has in their gut that's associated with --

Robb Wolf: H. pyloria and all that?

Dr. Kurt Harris: I think I want to say giardia, but it's h. pyloria, yeah. So h. pyloria is supposed to be a commensal organism, and it probably overgrows when

you have hydrogen bubbling backwards in the gut from the abnormal fermentation that's going on with just a small bout. It's probably a gut biota that might make you susceptible.

But I would just add that eating too much fructose at once, like drinking Coca Cola fast, could cause the same kind of symptoms as eating something that's got fodmaps because F is fructose -- or no, F is fermentable, and among the fodmaps is fructose itself if you get a high enough dose. That's true in like I say 50% of the normal population. Fructose malabsorption is not the analog of the thing with lactose. It's normal to malabsorb fructose if you eat too much at once.

Robb Wolf: Interesting. This one is a little bit more -- it's not so foody. This is from Dr. Pierce. He says, "Dr. Harris, thanks for taking the questions for the upcoming podcast; although recently introduced your blog, I'm a big fan. My question concerns talking to other healthcare providers. These providers are very educated but despite all the evidence I can provide, they still deny that there is any merit to the philosophy and science of Paleo nutrition. Do you have any advice on how to talk to other doctors, PTs, et cetera without being offensive especially when it concerns patient care?"

Dr. Kurt Harris: Not really. This just becomes a function of age. Your desire and willingness to fight and beat your head against the wall just diminishes, I think, the older you get. And I try not to call it cynicism, but maybe it's a little bit of -- maybe it's just exhaustion not cynicism. It's just not productive to try to convince people that don't want to be convinced. I think most of these dietary things we're talking about are things that can be handled without even interacting with your physician about it.

I'm a physician, okay, and my success with convincing other physicians to pay attention to any of this has been very, very limited. I'm talking about people that I know personally where I say, "Hey, read this book. Tell me what you think." They're too busy trying to make money with Medicare paying them $9 per office visit. The vagaries of just dealing with the healthcare system and practicing medicine are just too much. The only thing that allowed me to be able to have the time to even get absorbed in this -- to be totally honest the genesis of this for me was a failing business.

I had an imaging center that went gangbusters for the first three years that I had it, and then it slowed down to the point that I could sit in my office and read papers and sometimes blog. That's the God's truth of how I came to this. If I was a normal radiologist, I'd be so overwhelmed with

work that I wouldn’t have time to read at all outside my specialty. So I don’t know. I don’t know how to convince people. I really don’t. I could make up some answer, grab them by the lapels, shake them, but I don’t know. If you have any ideas I'm all ears.

Robb Wolf: No. I think I'm very much in the same boat as you. Denise had a really, really good piece on how to convince or how to argue with a vegan or vegetarian. She's really good, and she's a great speaker. She's going to be a real heavy hitter with all this stuff in the coming years, but I piped in that I think it's just an absolute waste of time to try to convince anybody. Like present whatever material you can and at this point, like I told those folks then, I think the sense that I've had there, there's been somewhat cranky tweeting about my commentary on that that we need to get in and argue with these folks.

We have so many people that are interested in this topic. We have so many people that legitimately want help that if you just spend your time helping the people that want help, then you end up building this base of people that get good results. And then we can actually do something with that whether we're talking about funding independent research or a variety of different things versus getting into a knockdown drag out with these folks.

It's interesting Tom Knotten was there at her talk at the same time and he mentioned a paper. I think it was in a philosophy journal or logic journal or something like that. It basically made the point that it does not matter how good your argument is; it never occurs that two people sit down with differing views, and then two people walk away with the same views; like it just doesn’t happen. So your best time spent I think is just kind of putting the information out there to the people that are intrigued by it, and then that's it because you're just not going to change anybody's mind unless they're at least somewhat open to the idea.

Dr. Kurt Harris: Yeah. And to borrow again from an anecdote that I read in some book on Buddhism, and I was comparing Buddhism to proselytizing religions. It's the banquet metaphor. You spread a table. You put a table cloth down. You put all these different Paleo goods, and you say, "Come eat it. Don’t come and spit on the table. Don’t tip it over. Don’t pull the tablecloth out. You're welcome to eat all you want," but you can't force anybody to do it. You can't force anybody to just feed and say it's tasty or even to look at. All you can do is lay it out, and that's what I do on my blog when I blog. I'm surprised you haven't asked me why I'm not blogging anymore but when I have time for it.

Robb Wolf: We're going to get to that.

Dr. Kurt Harris: Fair enough. But what I'm doing is I'm just laying it out, and I try to say over and over again, “It's just one man's opinion, not even just a doctor's opinion, just one guy's opinion.” There are enough people that literally call me on the phone and say, "What do you think about this? Why not just put it out there and let people read it?"

I have in common with Peter, the Hyperlipid, that I'm not trying to save the world because the world doesn’t want to be saved. It just doesn’t. And every hour you spend helping somebody who doesn’t want your help is an hour that you're not spending helping somebody who does want your help even if you don’t know who that person is yet. Why give advice to people that don’t want it? They don’t want it.

That's where I'm at with the vegans thing. When I read blogs, I don’t even read blogs unless I think there's some common agreement there, okay. I'm alluding to something that I’m just starting to figure out. But I don’t go to a blog unless like we're speaking the same language or same realm of inquiry. I defy you to go anywhere on the internet and find where I said, "No, you're full of shit. Your whole premise is wrong. You're wrong. You're a vegan. You're this. You're that. You're all the zero-carb people."

They came to my blog. I didn’t go to their blogs, websites or forums. I don’t do that. Why? I wouldn't say out of respect for them. No, it's out of respect for me. I don’t waste my time commenting or even reading at places where I have no common ground. I don’t go to places that discuss UFOs. I don’t go to places that talk about creationism. It doesn’t interest me. If it doesn’t interest me, it's a waste of time. I used to be kind of interested in arguing with people and saying, "Don't you see?" but I'm too old for that now, and I just get tired of it. So I don’t.

Robb Wolf: I must have aged less effectively than you because I'm about 10 or so years younger, and I am 100% there.

Dr. Kurt Harris: You're about 100 in internet years because you've been this for like a decade for real, haven’t you?

Robb Wolf: Yeah, yeah, I mean since '98, '99, so yeah, totally, totally. I've definitely spent a ton of time assailing the vegans and bouncing around American Dietetic Association websites and to absolutely no good effect. And then when I just hunkered in and I was like, "Hey, I think this topic is important," and I'd write on it and I'd get some feedback, then all of a sudden it started getting a bunch of traffic and things started happening.

Ironically, I started actually helping a lot of people. That's kind of the irony there. Instead of doing anything other than just trying to produce some good work that I myself found interesting just in the process of making it, then I actually started reaching out and helping some people and wasn't both annoyed and annoying I think. So yeah, it's an interesting deal.

Dr. Kurt Harris: Yeah. And you have done just a world of good. Like I said, yours is one of the AHS talks that I listened to. I thought it was just really cool. It was your typical self-effacing persona that's the real you, and it was a great big chunk kind of talk. I really like it. It's good.

Robb Wolf: Oh, thanks, thanks. We've got a couple more here, and then we'll let you go. Greg is probably about ready to like impale himself on a pencil or something like that. We haven't mentioned Olympic weightlifting or anything at all yet. So Greg is probably about ready to check out.

So Serge asks, "Kurt, you recently mentioned that excess omega-3 is almost as bad as excess omega-6. Is it possible to get too much omega-3 from simply eating too much oily fish like mackerel or salmon? Let's take an extreme case of a person does not eat meat but only eats lots of fish."

Dr. Kurt Harris: Yeah. Okay. So my issue with omega-3 is it's not that I think it's possible to have too much omega-3 in your cell membrane because remember when we talk about those icosalide pathways you've got certain chokepoints there that are kind of agnostic to what kind of -- you got the fatty acids. Unsaturated fatty acids of a given chain length and that enzyme is agnostic to whether it's being a 6 or a 3.

So what it does is it takes those out of the cell membrane pretty much stochastically or statistically in proportion to how they are represented in the membrane. So let me be clear. It's good to have a proper ratio in your membranes. The problem is what's the Gilbert & Sullivan thing? Many has slipped between the cup and the lip. How do we get there? How do we get from what we want? How do we get from the diet to the membrane?

I still maintain the optimal, the best way, to get it there is to not be over soaking your membranes with n-6's. That's way more important, more effective, probably safer in a failsafe sense to do it that way than it is to do it by trying to pack the membranes with entries. So to me the place that the ratio ***[1:21:21] [Audio gap]*** pretty much would are free my views are kind of a derivative of theirs, independent but also derivative based

on them as usual, giving me lots of references that I read. But that's the best way to do it.

If you're going to try to bias it towards the entries, that is not have too many n-6's, it seems to me that the best way to do that is with a real food because a fresh cut fish that I just pulled out of a 45-degree water of Lake Michigan yesterday is pretty obviously going to be a safer, more live source of omega-3s that haven't degraded or become oxidized or contaminated or whatever than taking it in pill form.

Now, there are arguments, that I'm sympathetic to, that taking it in pill form is going to -- the concern for me is that even if you have a pill that is all packed, tried and it's not oxidized -- the thing is total poofa matters as well as the 6-3. And as far as your liver is concerned, 3's are better than 6's, but there are some experimental evidence I'm aware of that you can increase the oxidized LDL maybe, and you can have negative effects on the liver just with total poofa not just with the 3's.

So again, I think the best thing is just don't eat too many 6's. Do I think fish -- it's possible to get too many 3's by a fish? Well, there's the whole ethological anecdote about Eskimos actually eating so much n-3 marine sources that their bleeding time is affected. I think it's probably not optimal. I think it would be not optimal to have a lengthened bleeding time relative to normal.

So I think, yeah, it's theoretically possible if you eat nothing by oily cold water fish as your protein source; that might be bad. In real life do I think that's very likely to happen to a person that starts off on the sad or has already saturated not just cell membranes but tissues are already saturated with n-6? Do I think that's possible to get so much n-3 that affects your bleeding time? It's probably not very likely on North American or a lesser person that that could happen.

Is it possible to have too much oxidation going on from just too much total poofa from eating fish? Possible, but not very likely. I think eating fish in almost any amount is probably perfectly safe. So I wouldn't worry about that. I myself, in addition to eating the -- they're pretty much 1:1 ratio of n-3 to n-6's that I get; I also eat fish about three times a week -- frozen cod. People give me fresh-caught cold water Chinook -- I think they're Chinook, Pacific salmon that are from Lake Michigan right outside my window.

So I eat a fair amount of fish. I think in order of preference, probably eating fish a couple of times a week and not eating a lot of n-6's is probably the number one choice over fish pills I would think.

Robb Wolf: Got you. Doc, what about like I have historically made kind of a recommendation that if somebody is real sick, really inflamed for maybe a two to three-week period, they might take a reasonably high amount of fish oils. It's obviously limiting linoleic acid but then titrating down to a very low intake. Do you think that the potential for oxidative stress, do you think that that's a bad recommendation -- like would you make that recommendation?

Dr. Kurt Harris: I don't know enough to answer that definitively. My crude thought experiment, back of the envelope reasoning would think that the rate at which you could replace the excess 6's with the 3's in the cell membrane, I think you're going to hit -- I don't think the rate determining step is how fast you're eating new 3's. So mind you is that you can't stuff them in fast enough to avoid there being more oxidative damage than there is benefit.

Now, could there be some other mechanism that I don't know about that maybe you can tell me what it is right now? Could there be some other mechanism like adding a couple of tablespoons of Carlson's fish oil a day can help you do it better, quicker? Yeah, maybe there's some effect on the liver and the gut or some acute immune suppressant function apart from replacing the 6's with the 3's or slowly over time. Are you aware of some mechanism like that, Robb? Is that what you're thinking?

Robb Wolf: No, no, I'm not. I mean the more and more that I've gone down this path, like we actually have some examples of people with ulcerative colitis, some good literature showing that omega-3 supplementation with colitis in some people.

So this is where historically I've just been thinking about cooling the inflammatory flames but not really thinking about it from the substrate replacements in that there's some choke valves on that, and that you're not going to get that conversion any faster by simply providing more substrate in there. The liver is going to at some point just start perceiving these highly oxidizable omega-3's as being kind of a problem and they start actually metabolizing that preferentially as a very oxidizable high reactive oxygen species fuel source, and we don't really get folks further down the road and maybe actually enhancing the inflammatory response. I've been back and forth on that, but the more and more I go down this road --

Dr. Kurt Harris: Yeah. So it sounds like you're sympathetic to that concern just like I would be and Chris Kresser would be?

Robb Wolf: Yeah, yeah, and this is something that Chris Kresser and I have talked about, like he would definitely not recommend that approach. So this may be where I need to revisit my fish oil calculator over on the Whole9 site. We need to pull the thing down like it may be a bad recommendation.

Dr. Kurt Harris: Yeah. That's apart from -- I'm not going to mention my skepticism of trying to lower -- somebody having high triglycerides and trying to lower your triglyceride number by eating gobs of fish oil. I think that's probably -- when your triglycerides drop from that it's probably because you're causing some toxic effect in your liver, I mean literally. Your liver is not able to get the triglyceride to out. It's probably giving you fatty liver instead of triglycerides in your blood.

So I'd be really suspicious of that therapeutically. I guess the thing I would say to try and go your way a little bit is that if you were to say, well, if it makes you feel better on your own doing it for a couple of weeks, I would imagine anybody having a freaking heart attack taking a couple of tablespoons of Carlson's for a few weeks, my concern is more somebody doing it for months or years.

But yeah, I think that's an interesting example of convergence because in my earlier posts I said, "Oh, yeah, take fish oil if you can't eat fish." But I don't think of it that way now. I just think the failsafe thing is just eat fish or get a lot of terrestrial ruminant fat that's got the proper ratio and don't stop fighting n-6. ***[1:29:30] [Inaudible]***.

Robb Wolf: It's also accounting for the -- all respect to the folks out there, but kind of the idiot factor which is there are a lot of people who will look at that high-end recommendation. They will read the fact that it's recommended for a brief period of time, and then they'll keep going right along doing it anyway. So if there's question about whether or not it's a good idea to start off with and then you obviously see consistently that people do not ratchet that intake down, you got to change or I've got to change that.

Dr. Kurt Harris: Yeah. And I think that's where we get ourselves in trouble. We get pigeonhole because we try to say things that are helpful, like fruit. Some fruit is just a bag of sugar on a tree or it's a candy bar from a tree. We try to push the thinking one direction. Then you get somebody saying, "This guy thinks apples are poison."

I mean for Christ's sake, what I'm trying to do when I say stuff like that is I'm learning the initial stages of saying eat a diet that's kind of low-carb Paleo thing, and everybody -- I'm talking about actual patients I'm sitting in front of. What about apples and bananas and fruit and watermelon? How much of that can -- I mean the first thing you want is for each to eat as much fruit as they can because I told them they can't drink pop and eat candy anymore.

So that's where that comes from. You're trying to say, "No, no, no, I want you to think of that for starters as a candy bar from a tree," because that's how they're behaving. They're behaving as if, oh, they're looking at the thing you're trying to get them to do which is to eat – basically, ultimately what you're trying to do is get them to eat less food, okay, and that's the main thing. So the first thing they say is, "How much of this can be eating too much fruit?" But then you get pigeonhole by saying, "Oh, this guy thinks fruit is poison."

I've actually eaten fruit my entire life. I've never completely stopped. I eat oranges. I eat stuff that after a meal it kind of cleans your palate. I eat an orange. It's got maybe 15 grams of total carbs in it and half of it is fructose. I've never thought that was bad, but you can only say so much on a blog post or in your interview, and invariably, there is the idiot factor. People take whatever you say, and they run with it. They're taking the entire bottle of Carlson's a day because if they do it it's going to be much better. Or they're saying that you said that they're going to die if they eat an apple. So it just comes with the territory.

Robb Wolf: Totally which is also probably why we're somewhat burned out on arguing, but yeah. Okay, Doc, possibly the most important question of the whole podcast. When the heck is your book coming out?

Dr. Kurt Harris: Well after AHS, I got an email from Richard Nicolai, and I don't have it in front of me, but it was something like, "Jesus Christ! I sure am glad I didn't write a stupid book." Actually, you know what? It may have been in reference to Stephan's post repudiating the carbohydrate hypothesis. Maybe it was in response to that.

The thing is I've actually been approached by three different publishers, one of which is Victory Belt, your publisher, unsolicited, had said, "If you want to write a book, just let us know. We're good to go." The real reason I haven't written a book and done a podcast a year after the book explaining why all the shit that I wrote in the book is wrong because no

matter how smart you are and no matter how honest you try to be and faithful it will --

Robb Wolf: You're going to get something wrong.

Dr. Kurt Harris: You're going to get something wrong. You have to get something wrong. That doesn't mean I'll never do it. I actually have some ideas floating around, and my main thing I would like to do and I'm not trying to slam anybody specifically here. But I would like to write a book that uses actual, really up-to-date genetics, Paleo, anthropology and ethology and tie it all together and make arguments, make inferences about -- basically a book that says how to eat based on historical evidence, not just speculation based on tests or experiments but kind of covering it all.

That would be a really hard book to write because the thing is I don't know it all yet. I'm trying to teach myself and learn. I continually read books that are basically pop science where you've got a guy who's a journalist, and he knows 10 times as much as I do, and it's just eye opening and it leads to other paths. So right now I'm reading a book called 1491 which is a fantastic book about what the Americans were like before Columbus came. It's fun for me to read that stuff and to be thinking in the background, "Hmm, I wonder about what dietary implications that would have or what that can tell us about health."

So the kind of book I would envision writing -- I just don't know enough to write it yet because it's got to be something that interests me, but the stuff that interests me I don't know well enough yet. But in the meantime, if people can go on to the blog and look at the -- let's start it as the 12 steps. Now I call it the Archevore diet. I'll probably rewrite that soon.

Probably what I should do is put a branch flow in there where I say -- okay, like you follow a flowchart and I can probably put some branch point that says, "Do you have a goatee and live in a really liberal city? Okay. Eat more plants. Do you take wear fur and like to hunt? Okay. Get more of your calories from shit that you killed yourself." Because honestly, I think some of those differences like when Stephan -- I don't think there's anything wrong with this. I think it's inevitable.

I think when a guy like Stephan says, "Well, I think the optimal diet is not only -- it could be either more carbs or more animal fats. I think it's more towards the more carbs things." It's probably kind of influenced by other aspects of the culture that we live in and identify with. And I lived a lot of my life -- I lived at one point in a town called Stone Lake, Iowa which is

not far from Sioux City, Iowa. I mean the Lakota and Sioux used to live where I lived, and it's kind of part of the culture.

So part of the way I think of things is in terms of what the people in the upper prairie used to eat. But I think the point is it's equally legitimate to say I have a diet based on eating animals or I have a diet based on digging tubers out of the ground. I think it's a horse apiece for most people. I don't think you have to say, "Well, what did my ancestors eat?" I think most people can adapt to either kind of diet, and a lot of those choices are actually going to be personal, what do you prefer to eat? So people can just choose what they want.

Robb Wolf: I like it. It's kind of a – honestly, even though I've been like the high cut or the low-carb dude and the Paleo dude and all the rest of that, 10 almost 15 years down the road here having done all this stuff, it's actually kind of a liberating kind of scene to see this opening back up and just kind of understanding what is it probably that's making people sick; some lifestyle factors, some grains, some fructose, some linoleic acid, vitamin D deficiency, like there's some stuff that we can really hang our hat on, and then from there it starts opening back up.

The aperture opens up and what we could probably eat and get away with and live -- we've got 100-year-old Kitavans. We've got 100-year-old Okinawans. There's a bunch of latitude in there that we could get away with and be fit and strong and healthy, and it doesn't just have to be a ketogenic diet. It doesn't just have to be a low-carb diet. It doesn't have to fall under one parameter.

Dr. Kurt Harris: Absolutely. Yeah. And to give another nod to Stephan again with his work thing, when I do start blogging again which I will when some other things are taken care of, I'm going to do some blogging about this food org idea because it solves a lot -- it fills in a lot of the missing polls in a lot of us where you go "I can't understand it."

So I put this person on a whole foods diet. They're eating all Paleo-approved this. They're not eating this. They're eating that. They're still fat or maybe they're even gaining weight. The food org concept, by bringing in not just food quality in the micro and macronutrients and is it a real whole food, but how food is cooked, how it's prepared and combined with other foods can affect how much of it we eat.

Bringing those concepts in opens that aperture even further, at least in the therapeutic sense because I still think that when you do this stuff, if you stay fat or you're gaining weight or you're not down to what you

know and you know, all you have to do is look in the mirror. You don't need a scale. You know if you're fat or not. If you're doing something and you're still fat or you're gaining weight, something needs to be tweaked. You can say, "Oh, I'm doing everything right. All my health markers look good." I really do more and more think the best health marker is to look at what your body is doing with that energy.

If for some reason your hypothalamus is telling you to keep eating until you pack on the fat, whether it's an ancestral tweak or not you need to do something. Even if food org turns out to only be a therapeutic maneuver, you need to do it without caring or wondering whether it's part of the ancestral new you to have bland tasting food or whatever. I think that's a separate issue. But I think that's something very important that Stephan has brought up, and I'm paying a lot of attention to it at least.

Robb Wolf: Within that, like for me, my head is very much in this endotoxemia kind of low grade sepsis and all the rest of that. All of that being kind of an outgrowth of whether it's fodmaps or different gut irritants, but to me the food reward thing kind of slides right under that in that we know that there are opiate type chemicals in a variety of these foods that we're talking about.

My gut sense is that it's going to end up sliding kind of under that house, but I really like where Stephan is going with all this stuff. That's just kind of my own pet theory in this thing. And that's where I've been trying to see if there's some integration between dysregulation of appetite related to either acute or chronic sepsis and some adaptive mechanisms with chronic infections for things like syphilis, treponema pallidum, some of these things that avoid the immune system. What are long-term effects on appetite and immune response and stuff like that? Just seeing if there's any interesting stuff in there. That may be part of the next book, maybe part of a bunch of blog posts. I think there's definitely some interesting stuff there.

Dr. Kurt Harris: Yeah, yeah, that's interesting, thinking about the infection angle too and what that might mean.

Robb Wolf: Well, Doc, that's an hour and 45 minutes. This is the longest podcast we have ever done.

Greg Everett: Except for the 12-minute long one we had last week.

Robb Wolf: Yeah, yeah. I'm surprised people didn't complain that much about it. Maybe they're getting tired of us too so....

Dr. Kurt Harris: You could always just take some too I suppose to if you want to.

Robb Wolf: This will be the hypercaloric, overfeeding for people. So this will be the really big meal.

Greg Everett: The re-feed.

Robb Wolf: Yeah, the re-feed. Well, Doc, thanks so much for coming on. Huge honor having you on here and hopefully we'll drag you back on in maybe four to six months because I know this is going to spawn a bunch more questions.

Dr. Kurt Harris: Hey, anytime, Robb. It's been a real pleasure and sorry for the logaria but maybe it compensates for the lack of blog posts in six months. I hope it's been helpful.

Robb Wolf: Super helpful for me. You answered a bunch of my questions that I'm actually going to be pulling down the fish oil calculator after we get off the recording here. So yeah, it helped me for sure.

Dr. Kurt Harris: Great, Robb. A good day now.

Robb Wolf: Yeah. Take care.

Dr. Kurt Harris: All right. Bye-bye.

Robb Wolf: Bye.