

Paleo Solution - 385

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Robb: Hey, folks, welcome to another edition of the Paleo Solution Podcast. I had a super fun time today talking with Dr. Shawn Baker. If you are not familiar with Dr. Baker's work, pretty fascinating guy, a surgeon, served in the military, has become a fairly controversial and also inspiring individual of late. About 15 months ago he adopted not just a ketogenic diet but a fully carnivorous diet.

Man, the guy has kind of set the interwebs on fire and, thankfully for him, he's redirected much of the ire of the vegan jihadis somewhere other than against me because, man, they do not like the guy. He has set multiple world records in indoor rowing. He's quite a physical specimen. He is 51 years old. If he spends time outside the gym, I'm not sure what else he does because he seems to be there a lot.

One of the big topics that we unpacked with Dr. Baker is a pretty comprehensive exploration of his lab work and everything lipidology and testosterone and hormones. We unpacked a lot of that stuff. We tried to be as comprehensive as we could but within the constraints of one hour I'm sure that you folks will have a ton of questions.

If you have questions, drop them in the comments or fire them off to the contact page that you can find at robbwolf.com. Nikki and I will do a follow-up Q&A covering any of the things that we didn't get addressed in this initial episode. Dig in and check out this fantastic interview and exploration of Dr. Shawn Baker's lab values.

Dr. Baker, how are you doing?

Shawn: I'm doing wonderful, Robb. It's fun to finally get all my labs out there. People had been clawing at their necks trying to find out what's going on so this should be fun.

Robb: It should be a ton of fun. Thank you so much for letting me play a part in this. Your work has been really changing a lot of minds out there and creating some great discussion around what optimum human nutrition means and what we're finding is it may mean very different things depending on who you are and what the individual is up to.

Doc, if folks aren't familiar with your back story, can you give them a little bit of that? You can go as deep into it as you like. You were on Joe Rogan for like three and a half hours and so I'm going to link to that in the show notes if people want to do an even deeper dive on this stuff because we're going to spend a lot of time talking about lab values and lipidology and whatnot. Give folks some of your background.

Shawn: Yeah, Robb. Basically, I'm a 51-year old lifelong athlete who has a background training in orthopedic surgery. I kind of got to middle age, found that my health wasn't where I wanted, where it wasn't supposed to be, started playing with nutrition, started researching a lot of nutrition.

I started kind of a low fat, the typical dogma, low fat high vegetable, low meat diet, lost some weight, got thin, didn't find that to be sustainable or particularly enjoyable. I just didn't like what I felt. I found some of your work with the paleo stuff, took out the paleo diet for a year or two, enjoyed that and then I continued to read some of the low carb literature.

I thought it made sense from a physiologic standpoint, sort of researched that, played with it myself, had some good patient success with that. As time went on, as a very competitive athlete, I continued to just read and study and I thought I'd give it a try with more of a carnivore heavy diet and eventually switched to a fully carnivorous diet. I've been doing that now for a continuous 15 months.

I've been 15 months on a fully meat diets and continue to what I feel is exhibit very good health function and body composition by doing so. Since my experience I've had a lot of people that have sort of followed what I'd been doing in a more public way. There had been groups that have been doing this for quite a while now, for a decade or more that kind of have been in the background but it's a little bit more public or we're seeing a lot more people adopt this with some pretty interesting results which I think is surprising a lot of people so far.

Robb: Yeah. It's fascinating like some people like Amber over at Principia Carnivora, the Facebook group, there are some people over there that have been on all carnivore diets for, like you said, sometimes decades or more and a lot of these folks arrive there with some really serious health issues particularly gut related issues. I don't know that anybody is necessarily looking to find the most restrictive diet that they can but oftentimes when you're faced with these health concerns you keep tweaking and fiddling and iterating on what you're doing.

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And when you find something that doesn't make you sick and you feel like you've come back from death's door, it's a pretty powerful experience. It's ironic that in this world where folks are ever advocating for less and less meat consumption and whatnot, that there are these cross-sections of folks that are really benefiting markedly from the complete removal or largely complete removal of plant-based products. That's a fascinating story.

Shawn: Yeah. I think those are the people that really -- I mean, who the heck wants to go on an all-meat diet? It sounds kind of crazy. But the only people that really wanted to do that were these people that were really desperate. They've been to every doctor, every specialist, nothing worked. They tried the plant-based mantra, they tried the supplements, they tried all the very different protocols that are out there and they found that this is what works for them.

What we're finding, which I think is really, really interesting to me is all these sort of autoimmune diseases, besides the gut diseases like ulcerative colitis, IBS and Crohn's, we're seeing good success with that, we're also seeing things like rheumatoid arthritis, lupus, ankylosing spondylitis, regular arthritis, all these other things that are getting better on this diet which to me is just fascinating.

There's a group out of Hungary, Paleomedicina, run by Zsafia Clemens and Csaba Toth. They're experimenting with this. It's kind of cute because they have the name and they call it the Paleolithic Ketogenic Diet. It sounds fancy and really neat but it's basically just an all meat diet. When I say all meat diet they think I'm crazy but if you use this Paleolithic ketogenic diet then it sounds pretty cool and no one thinks you're as crazy.

But they're seeing the same thing. They're seeing really tremendous results with some formal studies. I think they run about 4,000 patients through that or a variation of that with really, really interesting results. We've got all this. If you look at how these autoimmune diseases are treated conventionally, it's often steroid medication. It's often immunosuppressive drugs. The side effects for those are legion and they're expensive particularly these immunosuppressive drugs. The fact that somebody is getting better just by going on an all meat diet to me is potentially revolutionary.

Robb: It is. My wife's mother died from rheumatoid arthritis complications about three months before I met Nikki. We've had the good fortune, I think, to be able to influence a lot of folks in just saying, "Hey, if you've got a GI problem, an autoimmune disease, why don't you try this for 30 days, 60 days and see what happens?" It's certainly not going to be worse or more dangerous than Methotrexate or some of these other immunosuppressant drugs.

Knock on wood, so far, it's been really, really powerful for a lot of folks. It's such a painfully underutilized resource this carbohydrate restriction process. Again, I think that you would probably agree with this even though you've had just shocking success with what you're doing. There's likely a spectrum here. Some people may not need to go 100% carnivore to get resolution of their symptoms.

Maybe they go carnivore for a period of time and then can reintroduce some amount of fibrous green, twiggy stuff or maybe even other things. There's good variation here. It is criminal that this low risk tool is not closer to standard of care versus it being filed somewhere between UFOs and Sasquatch. It's crazy.

Shawn: Well, I think one of the things I'm finding is, as somebody who would practice in western medicine in the State, things move very slowly that way and I find that the -- Through social media now we have this big tool to get a lot of things done very quickly. I think that's interesting that more people are just kind of -- Because there's a lot of mistrust with what's going on with the standard dogma because it hasn't worked for so many people.

I think humans in general, we're just eating the wrong diet. I mean, we've been eating the wrong diet probably for 10,000 years and it has gotten worse and progressively gets worse every year. I agree, Robb. I think that you can use this as an elimination diet and a lot of people do and they find that they feel excellent and then some people are able to tolerate certain other foods better.

Obviously, I know you've done a lot of work on this but depending on where you came from geographically ancestrally, certain populations -- We're introduced to milk earlier than others. Certain ones had grains than others. There's probably different variations of what you can tolerate. I think we all share the capacity to tolerate meat. I mean, I think that's three million years old or older, if I know a lot of the anthropological work on that.

I think there's not an anthropologist in the world that would argue that humans did not eat a lot of meat as we evolve. I think we all have that capacity. Where we differ is probably the capacity to handle other things to some degree.

Robb: I absolutely agree. And it's interesting that the kind of safe place to go back to if you're sick particularly with some sort of mitochondrial driven metabolic issue seems to be this very low carb diet potentially at the exclusion or most or all plants.

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It's kind of a fascinating story that that appears to be a safe place that one could go to potentially press a pretty profound reset button. I think that there's, again, some interesting insights to be had from that.

Shawn: I certainly, as a physician, certainly love the aspect of the potential for helping people get rid of health disease. Rheumatoid arthritis, it can be a horrible awful disease. I've replaced lots of joints from that. The disease continues to progress despite that. It's a very sad disease to see someone diagnosed with it. And, hopefully, if there's a way to prevent that.

One of the other things that I think is interesting is because, as I pointed out, most of the people that came to this diet came to it out of desperation through health problems. I kind of did this more as an athlete. As I've done this and now lots of other athletes are picking this up -- We've got New Zealand All Black who's doing this right now knowing that he's getting excellent results as well which I think is fascinating. I've got lots of MMA guys, jujitsu guys. You might not, obviously, have a relation to that. Congratulations on the purple belt, by the way.

Robb: Thank you. Thanks.

Shawn: I got to learn how to do that one of these days. My little boy started doing it. He's five. He's just taken that stuff. So, one day, maybe I'd drag my old butt up there and learn some of that stuff.

Robb: It's the cocaine of movement. It is absolutely addictive. Just be forewarned on that.

Shawn: Yeah. That would be fun. I'm still hung up on breaking records and stuff like that. It's hard to go to a sport then all of a sudden suck at it. You got to suck it up and do that. I'm seeing a lot of athletic improvement. We've got this kid -- I know you had a powerlifting background. There's a kid out of Canada. He's a Canadian Powerlifting Federation national record holder. He started doing this stuff back in January. He's like a 165. He said he's just crushing his numbers right now. He's hitting like 630 without a belt. It's 165 on deadlifting. He's a drug free guy. He's curing his hypothyroidism too which is also neat.

I think there's some athletic application to this as well which I think are pretty interesting. My background, on that concept too, I broke a whole bunch of Concept2 indoor rowing world records as a carnivore. I think there's beyond just get healthy thing. I think there might be an athletic advantage beyond keto. Because I was keto for a couple of years before I did this and so I found, for me, switching to a more protein, more animal protein improve my performance relative to keto which I think is interesting.

I think that may explain some of my labs when we talk about glucose. I think there's some probably, cause I see this trend with athletes with the glucose numbers. I think that will be interesting to talk about.

Robb: Absolutely. Doc, can you describe a little bit what are the distances that you are both competing in and training at on that Concept2? Because in my mind, particularly you're a big strong dude, and so I could see like that 500-meter distance maybe fitting into a keto fueled process reasonably well because it's reasonably short time indexing compared to a 2k or 5k row, starts getting out pretty squarely in that like kind of glycolytic hell.

Again, bigger, taller, stronger guys, they can just riff on that Concept2 handle and really get some power on that. That shorter time indexing seems like it might fit better with a keto fueled approach. What type of distances are you training at and also competing at?

Shawn: Yeah. Robb, I broke the world record in the 500-meter row for the 114. I broke the 100-meter world record and I broke the 1-minute world record. Right now, I'm messing around with the 1k so it's kind of in between distances. Probably, I got two, three weeks away from breaking the world record in the 1k for the 50 plus class. That's going to be probably about 249.

I think there's applications for both. We do have, like I said -- And you're right. I'm 6'5". I'm 245. I'm lean. I'm relatively low body fat. I'm still deadlifting 500 pounds for ten reps without a belt. I've got a lot of strength and that certainly helps with that. You have to have that strength to pull these big numbers at those distances.

I am also seeing marathon runners doing this and hitting PRs on the marathons and some other stuff. It will be interesting to see how things play out over time. I think we have a tremendous ability to adapt to whatever our bodies are asked to do. As you know, we can manufacture our own glucose without getting it exogenously.

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As you know, a lot of the studies done on ketogenic athletes are usually cut off at about the three to four week period. There's very little few long term studies that came out those 12 weeks recently and it showed superior performance in the ketogenic wing. I think there's some long term adaptations that we aren't really aware of yet. I think it's more than just fuel partitioning. I think there's things like recovery and resistance to injury and probably some neurologic

advantages and psychological advantages that come with diet besides just how many grams of glucose you're running through.

Robb: Right. I mean, just that resilience to swings in blood sugar is one of the most profound things that I took away 20 years ago when I first started eating in this manner because I had been on a carbohydrate roller coaster the previous 25 or 26 years. As a kid, I just remember one inter meal foggy headed experience after another. It was when I went effectively ketogenic and it was not quite carnivore but, I mean, it was leafy greens and that was it. That was the way I ate for probably the better part of eight years.

I've played around with different things and I've messed around with a little bit of carb cycling and stuff like that. I still am really curious about how to fuel my jujitsu optimally. I'm kind of playing with some stuff on that. Doc, it's interesting because in some ways this carnivore approach seems to fly in the face of a lot of different things.

If we had the general mixed diet, kind of carb-based fueling, it kind of flies in the face of that idea and it also seems to fly in the face of a lot of the conventional keto diet recommendations which those folks get really nervous about eating too much protein. Protein is equivalent to chocolate cake and it's going to kick them out of ketosis and everything. You seem to not be concerned about that and the performance is not reflecting that kind of narrative. What are your thoughts around all that?

Shawn: Yeah. Again, Robb, I think you and I share the same sentiment when we talk about how do you look, feel and perform. I think ultimately that's what we're looking for. We're not looking at the lab number. We're not looking at blood ketone level. We're just looking at what's making us perform best as human beings. That's ultimately what we're all shooting for.

I think that, certainly, yeah, I mean, my diet is mostly fatty or steaks. I'm probably still hitting a relatively high fat macro ratio, probably still at the 65%, 70% fat. The rest of my diet is, obviously, protein and whatever trace carbs I happen to get, a little bit of animal product, you know there's not much there, and so I'm still probably leaning more in those ketogenic ratios but not quite as much as other people. I still take quite a bit of protein.

Like I said, I sometimes eat 400 grams of protein a day. I'm a big guy and I go through a lot of stuff. I'm eating 4 pounds of steak day which is a lot, obviously, but I think we have this fear of protein and there's a lot of people and things that are driving that. There's just concern about mTOR. There's concerns about ketosis and knocking yourself out of ketosis.

Again, I don't know that, from a human performance standpoint, human longevity, being under protein is doing us any kind of any real service. That's, obviously, strongly contested from certain people. I'm just saying you're looking at human beings, that they spend a long time restricting their protein and the place you're going to find that is in nursing home.

You see what happen to these people as they get old and frail? We know that it's harder for us to absorb nutrients as we get older. Our GI tract loses some of its efficiency and so I think this push to cut out protein is probably more injurious than it is helpful in my view.

Robb: I think it's disastrous. One of your recent Instagram post with a picture of you and then the doc from nutritionfacts.org, I think, illustrates this in a pretty profound way. If we've seen one consistency in aging populations, that they do better with more protein, I really think that this mTOR story is a huge bogeyman.

If people are generally not overeating and the way to really over eat easily is by a hyperpalatable processed food based diet, if they're not doing that and they're doing some amount of resistance training and other exercise so that we focus that mTOR activity in kind of growth and regeneration versus that gene just kind of cycling without a dedicated signal to respond to, those are completely different states.

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Most of the folks that do a lot of hand wringing about mTOR, man, there's nothing about their performance or physique that I would want to emulate in the least. They might outlive me, I don't know. You don't know until it's all said and done. I'll take my dirt map earlier so long as my quality of life is better along the way.

Shawn: Yeah. I think that's crucial. We also know there are some studies that show strength is tied in to longevity. There are some studies that show that strength shows increased longevity. Having muscle mass is incredibly important. It's a metabolic sync. You need that to help with insulin resistance. It's important for longevity. It's important for function. It's important for quality of life.

And I agree, if I live to 90 rather than 93, high quality of function, I'm going to be much happier. Because a lot of people will say that I'm only doing this diet because I care about physique and I'm like, yes, I like to have a muscular physique but at the same time that is also protecting me from disease. I think that's the point that most people sort of dismiss out of hand and point to somebody who's obviously looking cachectic and say, "Well, that guy, probably

he's healthier." And you're going to say, "No, probably he's not. He's probably sickly."

Robb: Right. It's a tough sell. That's where letting stuff like the blood work and whatnot help to flesh this stuff out will be really valuable. You want to jump in and start unpacking some of that stuff?

Shawn: Yeah. I think let's do it. Maybe there's an orderly fashion. I know there's a lot of--

Robb: I pulled it all down and I have everything in a file in front of me. If you want, I can just start kind of going through some of the different lab values and then we can kind of riff on some thoughts around all that. Like your C-reactive protein. That page is the one that I'm curious.

Shawn: Yeah, let's go. Just so everyone knows, Robb has all my labs. I'm not making these numbers up. I sent all my labs to him. We have some special ones. I guess, you're involved with -- Is it a company that they're doing something where they're doing something with the lipoprotein stuff?

Robb: Yeah. A little back story with that. Dr. Baker had some of his other lab work done separately and then I suggested that we do some of these advanced testing which is what our clinic here in Reno Especially Health kind of -- That's our, I guess, place that we shine is this kind of lipidology and also really using the advanced testing to ferret out things like insulin resistance and dyslipidemic discordance and stuff like that.

We have both a nice package of the kind of conventional lab work but then also this advanced testing. So, it should be a pretty cool exploration crawling through all this stuff.

Shawn: Yeah, okay. So, wherever you want to start, Robb. Let's talk about that. I think there's a lot of -- I think there's some myths we can kind of, or fallacies we can kind of put to rest hopefully. I'm one person. That's why my labs are just mine and they not reflect someone else's but there are a lot of sort of propaganda about what meat does to our body and if anybody, I'm somebody that's eating four, five, six pounds of red meat every single day for 14 months. This is a result or what's happened. I think there's some interesting stuff there.

Robb: Absolutely. Yeah. C-reactive protein is at 0.6 milligrams per liter. We'd like to see that below one, which it is. Could you talk a little bit about it? And you train really hard too. C-reactive protein is a fairly labile number. It can go up. It can go down rather quickly whether you've trained or if you are the beginning of a cold or something. I mean, you're at the bottom end of the range on that. Any thoughts around C-reactive protein?

Shawn: Yeah. I mean, obviously, C-reactive, this is a high sensitive C-reactive protein marker. It's supposed to be a risk factor for cardiac disease. Again, I'm at the lowest low. Anything below one is considered lowest low. So, my disease for cardiac risk based on this is considered to be very, very low. You are correct that hard training can bump that. In fact, I repeated my C-reactive protein. There's another set of labs in here somewhere and it bumped up to 1.1 after a really hard workout. In fact, I did that after I went up to super training and trained with Mark and Chris Bell. I kind of put on a show, all kinds of crazy stuff, really, really hard workout.

And so I repeated that right after that and it bumped my C-reactive protein just slightly above. My normal C-reactive protein is extremely low. The vegan propaganda is meat is very, very highly inflammatory. This sort of kind of goes to show that maybe it's not.

Robb: Right. I mean, not to give away too much of the story but a lot of the vegan propaganda is that protein, animal protein in particular, will make you insulin resistant and is the route to insulin resistance.

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Again, not to give away too much of the story early but Dr. Baker, you're like as non-insulin resistant as somebody could get. That again is going to be kind of interesting for folks to unpack. One of the things that is interesting, scrolling down a little bit, glucose. Your fasting glucose was at 127 which definitely can be on the higher side.

Some people in the low carb community can see some dawn phenomena. Hard training athletes can also see some elevations in blood glucose levels post training. What are your thoughts around this? We had talked a little bit about this before recording. Could you unpack the 127 glucose reading?

Shawn: Yeah. Actually, I got a blood glucose monitor after just to check some things. That is a relatively higher fasting glucose. I think what I'm seeing just in looking at other, particularly athletes who do this, they tend to trend upwards with their fasting numbers which I think is interesting. Again, as we'll point out, I'm very extremely insulin sensitive.

If we look up diabetic pathophysiology, that's not what happens in diabetes. Diabetes, the opposite happens. You become insulin resistant until your insulin can no longer keep up and then your blood glucose rises. I have the exact opposite thing happening here. There's a concept of adaptive glucose sparing where sometimes your preference is to use fat or to resist glucose being up

taken into certain tissues that leads to higher levels in the blood saving it for things like brain usage and other.

There's a few tissues that really have to have glucose including red blood cells. I think the renal medulla. But it's interesting to see that. I find that when I check my blood glucose -- and this is the other thing I think Chris Kresser points us at. There's a couple of ways to look at these things.

My resting glucose is relatively high but my postprandial numbers show almost no rise at all. And so I'll eat a big meal of two pounds of protein, not two pounds of protein but two pounds of steak, and my blood glucose would normally -- I've been checking this pretty frequently. It normally runs fasting numbers between 110 and 125-ish typically.

I use to wake up around 115 most days. This day was 127. But what I'll see is that will drop down throughout the day and it'll get down in the afternoon. I'll be coming down into the 80s. And then I'll eat a meal and it may either not go up at all. I've seen it go down after meals. I've seen it rise at most, maybe ten, 15 points, which again points to very good insulin sensitivity.

I think it's interesting that I've got this sort of fasting, higher fasting number. If you look at it, you say that's pre-diabetic number. And many doctors will look at that and say, "Well, wait a minute. Maybe we'll put you on Metformin or something like that." If you don't check the insulin, which I did, and we can talk about my insulin number, you would be confused by that.

Robb: Right, right. It's going to be kind of a haphazard deal here because we're just not -- So we don't miss anything important, just kind of go through the lab as they just kind of roll out here. The blood urea nitrogen was slightly out of range. It's literally like two points above normal and we see this all the time in folks that just eat more protein than the average person and in particular people who train very hard.

Within the cross fit community, same people with "normal" blood urea nitrogen almost never happens. Your creatinine is actually just at the high end of normal and then there's really nothing really noteworthy on the rest of that one. Let's see here. We've got your -- This is your cholesterol reading which is the general panel. This is the stuff that you would get from most docs.

We're going to do a deeper dive on the lipoproteins here in just a little bit. Your total cholesterol was 205, HDL cholesterol 44, triglycerides, 59. Let's talk a little bit about that total cholesterol first. So, it's slightly above the upper end of the reference range. Again, I'm going to give a little bit of preview when we look at this through advanced testing there is nothing amiss here when you look at the

lipoproteins through the perspective of the LPIR, the lipoprotein insulin resistance score and the distribution of LDL lipoproteins.

What you have is what we call reverse discordance which is what appears to be high cholesterol levels but very comparatively low lipoprotein. These tend to be the people that end up living a long, long time and then they die from something but it likely isn't cardiovascular disease. That's just kind of a foreshadowing on that. Any thoughts around just the general cholesterol readings?

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Shawn: Yeah. Let me just go back up to the renal function studies. The blood urea nitrogen, that is expected for big large. Again, higher creatinine. Big guys with a lot of muscle particularly training hard and eating protein, that's normal. So, some people see those numbers and they're like, "Whoa, that's elevated." Even the physicians will get weird about this and they don't understand the physiology. But just because the rest of my electrolytes are there, my sodium, my potassium, my chloride, my calcium--

Robb: All of that stuff.

Shawn: They're all normal. And then we also need to talk about my LFTs because my liver function studies were in there. That's CMP as well.

Robb: AST and ALT are right in the middle of the range.

Shawn: Yeah. My alkaline phosphatase AST and ALT were all normal. Again, there's people that think that eating meat is somehow harmful to the liver, again, those numbers are all completely normal. Again, I repeated those again after working out and then one of those, I think, my AST bumped a little bit after hard training. That's another thing you need to be cognizant about the fact that if you train really hard it can bump your LFTs for up to a week. That's also something that people need to be made aware of.

Robb: But you could maybe make a point that we would maybe even expect given the volume of training that you do, we would expect these to be higher. And so are we actually seeing anti-inflammatory resilience effect here because it is still within normal range whereas it is pretty common, again, cross fit gamers, MMA people and stuff like that, when you see a little bit of elevation in the AST, ALT, alkaline phosphatase, if the person's a hard training athlete, you're kind of like, "Ah, okay, we'll keep an eye on it but it's really not that concerning." And you're like right in the middle of the ranges. It's not even at the higher end of the ranges.

Shawn: Yeah, I mean, it could be. It's hard to say. I mean, this is all wild wild west stuff as you know, Robb, with nutrition. But as far as cholesterol, I repeated my cholesterol three times. I had three different studies and they all show about the same thing. Now, interestingly, one of the few labs I remember from the last time I took the labs several years ago was my cholesterol was about the same, my HDL was much lower. It was about a third. And my triglycerides were much higher. My LDL was about the same. The only impact the diet has had, it's had basically no effect on total or LDL cholesterol but it raised my HDL and lowered my triglycerides which is what I would expect. That's kind of an interesting thing.

Robb: Do you have any sense of if maybe you have a genetic polymorphism trending towards a lower HDL? Because this is one of the things that popped up on here that in the spectrum of things your HDL looks a little lower but what you're relating is that it's actually gone up with the adoption of a carnivorous diet.

Shawn: Yeah. It was in the low 30s prior to this. My father is in the same situation. He has a relatively low HDL. He's also on a carnivorous diet. His numbers look very similar to mine which I think is quite interesting. My HDL is always been low. That was the one thing that they used to beat me up about, getting my HDL. They said I need to exercise more. I said I can't. It's impossible.

Maybe take up drinking alcohol and taking Niacin are some of the recommendations. But, yeah, my HDL, actually, even though it's 44, which is considered above 40, a lot of people use 40 as a cutoff, some people like to use 60, but that's an improvement for me over what has been in years past. I think that's a positive sign. And triglycerides, at 59, I see they're bottomed out. If you look at the HDL triglyceride index, I mean, that shows extremely good, again, insulin sensitivity and then it's also considered low risk for cardiovascular disease.

Robb: Right. And I don't think there's anything else to unpack on that one. Let's see here. We'll pull up the next one. Testosterone. Okay. This will be a fun one. This will be a fun one because you clearly carry a lot of muscle mass, have some very impressive physical performance and like you've had people relate to you that they expected you to have like a testosterone up in the 1100. The total testosterone was 237. The free testosterone was 5.5. Am I reading that correct?

Shawn: Yeah. They were low. I repeated that actually again and they were a little bit higher but still low. This is an interesting thing. I think we see this across the low carb community. Now, here's what I'm seeing, Robb, because I'm seeing a lot of the people's labs on this. I think, a lot of people, as we know, cholesterol is a precursor for sex hormones and a lot of people are seeing actually their testosterone rise particularly initially. I've seen people with 200 point rises going on on a carnivorous diet. I think that's interesting.

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I think what happens long term is that you become sensitized. Your receptors become extremely sensitive just like your insulin receptor becomes extremely sensitive and also probably your thyroid hormone becomes extremely sensitive and probably things like leptin, all these other sensitivities that go up. I would argue that perhaps that is a good thing. If these organs are not being required to continuously pump out hormones, maybe running at a lower background level but having the same clinical effect might even be a more efficient way to do thing.

The things we know increase androgen receptors sensitivity, carnosine features heavily in that. And so, obviously, I'm getting a lot of carnosine in meat. Lifting weights, resistance training will raise your androgen receptor sensitivity as will infrequent meals. So, intermittent fasting that or long time between meals, all of which I do. I usually eat twice a day so I don't eat very often. I don't snack.

All of those things have been shown to dramatically increase the androgen receptor sensitivity. And so to the point of what is my clinical testosterone function? I mean, obviously, I'm strong, I'm big, I've got a lot of muscle mass, I'm continuing to put on muscle mass and strength even now. Just from a sexual performance, I wake up every day with an erection. I mean, every single day. I can't remember the last time I didn't do that.

My clinical expression of testosterone function is excellent particularly for someone of my age. That's why I point to the fact that you can't just base everything on lab values. Lab values have a lot of context in there. I think you have to look at receptor sensitivity and all these other things. Probably if I look at my luteinizing hormone or my follicle stimulating hormone, those numbers would be normal because they're saying, "Hey, man, you're making enough testosterone." The feedback that I'm getting in the hypothalamus likely and you, obviously, got gonadotropin-releasing hormone influencing luteinizing hormone.

All those things go into play. I think the feedback I'm getting from my body is I've got enough testosterone floating around to get the job done and to do what I'm asking of it and I'm responding very well with that. And so a lot of people would be shocked by those numbers but I'm not. I think it really has to do with the clinical function that's why, again, how you look, how you feel, how you perform is often a much better indicator clinically than some of these lab numbers.

Robb: And again, to your point, just restating what you already mentioned, some folks that go lower carb or keto, they may see a dramatic increase in their androgen levels at least initially. Other folks will see a decrease. I guess, at the end of the

day, what we just really want to keep an eye on are things like morning erection. Clearly, this is pretty male-centric but we see somewhat similar trends with females. And we really only get concerned if we're starting to see some maybe symptomatology that's consistent with low androgen levels. If we're getting poor recovery, maybe some lethargy and low motivation and stuff like that then we start reevaluating what we're doing.

Shawn: Yeah. I think that's the same thing. It carries over with thyroid as well because we see the same sort of thing with thyroid hormone. People will come in, they're clinically asymptomatic but the doctor will see a low T3 level and want to supplement it with synthroid. I think that's something that we have to put in context what's going on.

I think one of the problems a lot of physicians have they become so reactionary to just the lab values. They just got to click that box, check it off and there's not a lot of real thoughts sometimes. Unfortunately, I think a lot of people are being inadvertently harmed like that.

Robb: Absolutely. So, the A1C, this one is interesting. It's a 6.3. Let's talk about that a little bit. That one is interesting. It kind of trends a little bit with that fasting blood glucose level and is maybe a little higher than what we either might want or might expect given a low carb diet. What are your thoughts around the hemoglobin A1C?

Shawn: Yeah. Again, it goes to this whole diabetic pathophysiology. And again, in the light of extreme insulin sensitivity which we can demonstrate here a little bit, yeah, my fasting level is relatively high. I think there is something to be said about the problem, the limitation of the hemoglobin A1C is assumed, the calculations are assumed that a red blood cell lives 120 days, and that's what the numbers are showing.

We know that some people particularly diabetics, their red blood cells can live even shorter so they often will underestimate what their true A1C is and the opposite may be occurring. In this situation where red blood cells live longer then it over estimates the hemoglobin A1C. I would think that one way you can sort to this out -- There's a couple ways you can sort this out.

[0:40:03]

There's some expensive testing you can do looking at like markers on the red cells. You can get fructosamine study which kind of tags albumin. Assuming your albumin is five, where you can estimate what the actual circulating glucose is longer term. I would suspect mine would still be even, if you adjusted for that, probably slightly elevated. It might something like 5-8 or 5-9, if we adjusted four

red blood cell life span. But still, again, you have to put that in the context of what is the insulin sensitivity. That's the end of the line pathophysiology that underpins diabetes.

Robb: Got you. They also had another redo on the C-reactive protein which was, again, low. Serum ferritin, which is in the middle of the range. Scoop down to the next one. Let's see here. Again, on that lipid panel, total cholesterol, HDL cholesterol. Is that everything? Did I miss any of those other than the advanced testing? Was that everything that was on that general study?

Shawn: I think there's some total iron binding, so much iron studies in there somewhere.

Robb: I think somehow I didn't download that. If you have that one in front of you and you want to run through it, that would be fantastic.

Shawn: Yeah. Let me see if I can find them real quick here, Robb. Yeah. So, my ferritin level, this is one of things people talk about. They're concerned that I was going to be massively iron overloaded because I eat so much iron, basically. When we look at patients that have iron overload, their numbers often will show ferritin levels of a thousand or so.

The top end of the normal, at least on this assay, is considered to be 400. Mine was at 243. That is squarely in the middle. It's not demonstrating that I'm being overloaded with iron which I think is pretty interesting. Let me see. I'm just going to find. I have to look at my photos here real quick, Robb. Those are the labs **[0:42:14] [Crosstalk]**.

Robb: Right. I'm not sure how I missed that one.

Shawn: Maybe I didn't send it to you. Let me see. Lipid panel. Hemoglobin A1C, serum ferritin. Yeah, here it is. I don't know if I sent you. I'll just read these to you and I'll send them to you later. So, I had my iron numbers. My iron binding capacity for total was 81 and the reference range is 50 to 180. My iron binding capacity was noted at, or my total iron was 81. It was relatively low, being 50 to 180.

Iron binding capacity is 258, the normal range being 250 to 425. My percent saturation was 31% saturation, normal being 50 to 60. And so that is -- I'm going to send you this one real quick, Robb, so you can look. I'm just going to mail them real quick. So you can look at this too. There you go. You should be getting this in the mail right now.

All my iron numbers, in fact, there's nothing wrong with my iron numbers. Some people will say that they want to keep ferritin below 200. Again, I don't know that that's necessarily based on anything that's stuff they don't have a hand on.

But I'm not accumulating iron. I'm not developing hemochromatosis. And again, I eat lots and lots of iron. And we have this capacity to regulate iron absorption through a hormone called hepcidin which is produced in the liver and interacts with the inner sites and kind of limits how much iron we actually absorb into our digestive system. My iron is well-regulated.

There's one other number on here, and I think it will come up on that lab, is my insulin, which I think is important. My insulin was normal range, is between two and 19.6. Average American insulin is around eight or nine. Mine was 2.6. So, my fasting insulin was extremely low. Again, that goes to insulin sensitivity. If you plug in my fasting glucose with my insulin number and you look at the so-called HOMA-IR score, a homeostatic method of assessment, it shows me to be extremely insulin sensitive.

Here's another test you can do to look at insulin sensitivity and we can talk about the advanced testing where you have the LPIR score but there's another test called the triglyceride glucose index.

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That's a calculator using you take half of your triglycerides, you multiply it by your glucose and then you take the natural log of that and then it will give you a number between about 7.8 and about nine. And mine is about 8.1 which is also considered extremely insulin sensitive. We have all these tests showing that I'm extremely insulin sensitive.

Robb: Absolutely, yeah. I'm checking that out and also looking at some of the advanced testing stuff. Let's see here, make sure I've got that. Do you want to dig in to some of the advanced testing?

Shawn: Yeah, sure. That's your thing. That's interesting. I think, like I said, there's some interesting stuff there. The funny thing, what we'll talk about, go ahead and **[0:45:47] [Crosstalk]**.

Robb: There's one that has a nice report that gives you a big picture overview. I was trying to find that one again. I have like 600 tabs open right now. Let's see here. We'll just go off the main report. The LDL-P is at 1273 which is slightly elevated but what we find within that story when we look at it relative to the insulin sensitivity which is part of this LPIR score, the lipoprotein insulin resistance score, it's really non-concerning.

I mean, once we factor everything else into this story, and this is why our process is kind of matrix driven, this thing will weigh a little bit that way, this will weigh a little bit a different way and then we kind of add up the overall scoring on it.

With this, your lipoprotein sizes are large and buoyant. They're non-reactive. They ended up placing your LPIR score at 36 which is basically at the lowest quintile that we slice and dice this stuff. TSH was at 3.0, which is within pretty normal range. Your vitamin D was at 30 which is maybe on a low side. Any thoughts around that?

Shawn: Well, I mean, their normal range is considered 30 to 100 so, yeah, I mean -- I don't know. I think there are thoughts on vitamin D and glucose perhaps, some issues between glucose and vitamin D. I think Csaba Toth is showing that these populations, these indigenous populations that live on their sort of native reindeer meat diet have good vitamin D status despite lack of sunlight. That's interesting.

I don't really know. I don't know that there's anything I'm concerned about with vitamin D. It's still within the normal range. I don't have any sort of some of the things that are associated with vitamin D deficiency and I don't think I have deficiency. The other thing is -- You were at the Low Carb Breckenridge. I know you talked about Dave Feldman stuff. Did you get into -- I know he likes to talk about remnant cholesterol.

Robb: Yeah. We chatted a little bit about that. I mean, Dave's stuff is fascinating. It's just that these lipoproteins are way more labile and modifiable than what most people are really appreciating.

Shawn: Yeah. I just looked at my remnant particles and there are 11, which is extremely also, at least according to what his work shows, also extremely low risk for cardiovascular disease, which I think is another nice thing to see with this stuff.

Robb: Oh, it is funny. They have you -- Your BMI is slightly elevated at 29, which is hilarious.

Shawn: Well, yeah. As you know, that's the limitation of BMI. It doesn't take any account if you have muscle on you.

Robb: Right. So, your blood pressure was 120/75 which is pretty good. Total cholesterol -- Doc, talk a little bit about the cholesterol, HDL to triglyceride ratio. This is another one of these things that can provide some insight with regards to insulin resistance and also systemic inflammation.

Shawn: Yeah. I mean, there's different cutoffs. Some people like to see your triglycerides to be less than double your HDL. Some people use that number as a cutoff. Some people have higher number, then there are some people that think that triglycerides below 150 are fine. If your HDL to triglyceride ratio is favorable, and then mine is just like 1.2, which is very favorable, that indicates low risk for

insulin resistance and low risk for inflammation, low risk for cardiovascular disease.

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I think that's also another important way we can slice and dice these numbers. Again, as anybody heard me, again, I am -- I just have to think you have to put everything into context. I think some of the subjective stuff that we have when we measure health is extremely important and it shouldn't be dismissed. I think that often--

The interesting thing about this is we look at this day to day variations and this is some people get really hung up on this stuff and I think -- In three different readings my HDL and triglycerides were all slightly different. One was 40, one was 41, one was 44 for HDL. Triglycerides were 54, 51 and 59, I think, or something like that.

They change over a period of just a few days. If that moves your numbers just a few points it's not something to be worried about. Some of these people that go on a diet and they'll be worried that their HDL dropped three points or their triglycerides went up six points, to me, that's so inconsequential that you should almost just ignore that stuff.

Robb: Right. And then we just have the inherent variability within the lab. If we sent ten samples taken from the same person at the same time, we would have a certain error spread on that. Folks really under appreciate that for sure. Let's see here. Your Lp(a) is normal. Did you want to talk a little bit about the Lp(a)? It's one these risk factors for cardiovascular disease that are generally not super dietarily modifiable although you mentioned some hacks on that as far as palmitate consumption.

Shawn: Yeah. So, the lipoprotein a is, again, another one of these markers associated as risk factor for cardiovascular disease. Anything considered over 75 at least on this particular assay is considered higher risk for cardiovascular disease. Mine was two. So, mine was about as low as it gets. Some people will say that's a genetically inherited trait and your Lp(a)'s number is going to be what it always is.

But there was a study done in 1991, I believe, when they looked at feeding -- I can't remember if it was a human or an animal study but they showed that that Lp(a) number could be brought down by saturated fat. I think they were given them palm oil which is high in saturated fats. Of course, the negative with that study is saying, "Well, it may have improved that risk profile but saturated fat is bad for our heart."

This is back in 1990 when we all believe that saturated fat is the worst thing for us. But it may be modifiable. I don't know what my Lp(a) number was before. It could have been higher and come down. But two is pretty damn low. That's about as low as will get. I think that's also another nice thing to see as far as cardiovascular risk is concerned.

Robb: Absolutely, yeah. Just scanning through here, I think we hit the bulk of things. There's a couple of summery images. Again, the slightly elevated LDL-P, tracks with that what appears to be elevated LDL cholesterol but again what's interesting is because of the lipoprotein count and because of the kind of size of the lipoproteins in that LDL fraction what we have here again is what we call reverse discordance in which you look like you've got what we might call high cholesterol levels but, in fact, it's being carried around by a comparatively few lipoproteins which to the degree that these things play a process in the atherogenic, beginnings of atherogenic disease. It seems to be gradient driven.

Potentially the more of those around possibly the more problem but that's all within the context of high oxidative stress environment, oxidized cholesterol, insulin resistance, which you have none of those things going on. You're in a super low, one would say, an anti-inflammatory environment. Really the only kind of slightly squirrely thing that dangles out there on that argument is maybe a little bit of the blood glucose levels.

But again, this is such a unique scenario. It's really hard to pin that stuff down. We're not seeing anything else like clinically manifesting that's suggesting that the slightly elevated blood glucose level is driving things in a negative direction.

Shawn: Yeah. I think it would be interesting to see the insulin glucagon ratios. There's a lot of other things I could do. I could spend a whole day and all kinds of money getting lab tests which could be kind of interesting. It chases down forever. You look at my waist to height ratio. It's very favorable. Again, all these things that point to things we want to see, and I think those things are important as well. I think they're very important, in fact.

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This is the thing. My demand for glycolytic activity is very high. I think my body is just reacting to that that's why I'm seeing a little bit higher glucose levels. This is what I've seen with other guys doing this that are athletes. They see the sedentary folks that go on this diet, they see their blood glucose numbers trend downward considerably. And I think some of the athletes are seeing a little bit of bump and that's what I've seen a number of cases here.

I think it has to do with your demand for access to glucose and what you're doing. Obviously, we're making some of that through gluconeogenesis with protein but, I think, again, it's more demand driven. I would suspect, if you muscle biopsied me and look at my glycogen stores based on those blood glucose levels, I would be very adequately stored with glycogen.

Robb: Right. And when we look at your performance and kind of the time indexing of the activity you're doing, it's probably, even though clearly without a doubt you're fat adapted to probably a pretty remarkable degree but there's just some point where the energy demands have to be met by glucose at least in some capacity. Your liver is the intermediary there, doing some gluconeogenic work to top off the glycogen needs of the rest of your body.

Shawn: Yeah. I wouldn't be surprised maybe my liver has gotten bigger. I don't know. There's some thought that the Inuit had larger livers and stuff like that. Who knows? That'd be interesting to see. I think this is really just interesting and sort of unusual physiology. I think that for me -- And this is the other thing with recovery.

I think that I'm able to operate at a very high level of intensity without getting into the high glycolytic stuff. But when I do cross that threshold I will probably tap into those glycogen stores, that quick source of fuel and so I think I'm getting -- I think that's one of the reasons why I'm having such good performance relative to ketogenic diet as I've kind of got maybe a little bit more flexibility now.

Robb: Right. And metabolic flexibility is kind of where the rubber hits the road in this story. Yeah, that's interesting. Doc, do you have any sense of where you're going to take this stuff next? Is it just kind of steady as it goes? Do you have any ideas around tweaking the program in any specific way?

Shawn: Well, I mean, right now, again, as I'm continuing to collect data and I want to make sure that I'm testing the less confounded things. This is one of the problems with nutrition in general. The nutritional side is largely just a big mess because there's so many confounders in there. The nice thing about studying people that are just strictly eating meat is very -- There's very few dietary confounders in that.

Obviously, there's genetic and lifestyle confounders. They're still there. I think it's very interesting to study meat eaters. If the argument is meat is bad for you then eating meat in high doses should clearly be bad for us. That does not appear to be the case in my situation and in now thousands of other people. I think it's very interesting information to know for personally, for performance.

I'm playing with a little bit of salt loading right now. I think one of the things that we see -- One of the things that a lot of people talk about without carbs their muscles are really flat, the guys that are really worried about pumping up their muscles. I found that if we look at how insulin impacts renal handling of sodium, elevated insulin will result to a net reabsorption of sodium and thus likely fluid along with that. I think that's one of the reasons people get more of a pump with carbs. I think it has to do with fluid status and electrolyte status more than anything.

I found that by adding a little salt before a workout I'm getting this same big pumps. The bodybuilders that are doing this or trying this diet now are noticing the same thing. Mark Bell is noticing this. Marc Lobliner, and another bodybuilder, are noticing. They're getting they're really "pumped" muscles despite the absence of carb, despite keeping their electrolytes tapped off. I think that's a little bit of a tweak people can play with.

Whether I try and add in some other food down the road, maybe. I'm not sure. Right now I feel pretty good and I'm pretty happy with my performance. I think there are certain things. I think, for me, fiber is a no-go. I think about add a fibrous food in. My guts aren't going to like it. Whether I can adapt to that -- This is one of more of the things that people see as they go into this all meat diet and then all of a sudden their tolerance for other foods rapidly diminishes.

I think some of that has to do with gut microbiome changes that take place. There's some -- I think we adapt to the foods we eat. It is a chronic period of time. When a newborn baby is weaned off milk and starts whatever food, whether it's steamed broccoli or ground up broccoli baby food, they develop colic, they don't feel very good. But then that eventually passes. I think there's a period of time where you readjust to that.

[1:00:09]

Now, the question becomes if your GI system now has recovered and you're readapted to this stuff but now you're getting the same issues that you were having before, maybe the skin reactions, maybe the joint pain, maybe some of these other autoimmune symptoms then that clearly means that that particular food is bad for you.

But if it's only a GI thing and it's transient and you don't get any of the other symptoms, maybe you tolerate those foods okay and that's fine to do. I think from an evolutionary standpoint, I think probably fruit, in my view, is probably more likely something we could handle rather than most vegetables. As you probably know, vegetable, most of the vegetables we eat today were invented. They were invented in the last several hundred or several thousand years.

Robb: And the main process has been trying to make them less toxic.

Shawn: Right, exactly. That's the thing. I know Georgia Ede points this out. I know you probably ran into her at Low Carb. But, I mean, looking at the studies that show us that why fruits and vegetables are good for us, it's mostly epidemiology. There's a few isolated plant compounds but the only studies, the actual randomized controlled trials that actually use fruits and vegetables, it's kind of a mix. There's only about 20 of those studies out there and they're pretty mixed. Some of them were showed negative results. Some of them showed positive results.

The ones that showed positive results tended to be leaning more towards fruits rather than vegetables. I think it's an interesting thing. I think most people, inherently most children, they don't like vegetables because they taste too bitter and I think there's a reason for that but if you like them and you enjoy them and you don't bother you, then have at it. I mean, there's some value in that. But for some people, it's in that negative.

Robb: Yeah. I could not agree more. Well, Doc, it's been awesome having you on the show. Is there anything else that we missed or any stones we did not turn on this first go around having you on the podcast?

Shawn: No, I don't think so. I think it'd be interesting maybe -- Again, unfortunately, I don't have real good comparison labs to compare my before and afters. I think there's other people who are getting that information and were compiling data. So, we'll hopefully have some trends out there as we get this data compiled. We've got some neat stuff going on at meathills.com. There are a bunch of anecdotes but I think stories can be very compelling.

You don't always have to wait for a randomized controlled trial to take action. We know slowly how the wheels of progress turn in the dietary world and some people just don't have that luxury to wait that long.

Robb: And the RCTs come from the observational process. This is something that so many people forget. It's not this first principle thing. It's literally like Newton sees the apple fall and then you have an idea and then you do something about that to investigate it. We should definitely keep our feet in the ground, remain as evidence-based as possible.

But when we see something new, man, if we could just fight the human tendency to dismiss it because it is new and instead get a little bit curious and ask as many questions as we can formulate about that, we could really, really

improve our lot rather rapidly. Was it Max Planck that said something to the effect that science progresses one funeral at a time or something like that?

Shawn: Yeah, exactly. That seems to be the case. The thing that -- It's like I don't have scurvy. That shocks people. We've got this ingrained dogma that you're going to get the scurvy and everything bad is going to happen. Those things are clearly not happening. We're not getting vitamin deficiencies. We're not malnourished. We're not seeing those things.

At least that sort of -- I'm not getting that many questions anymore. When I first started doing this, it was totally crazy. After a year has gone by, now we have guys like you and some of the other people in the nutrition industry that are at least saying it's an option and it may help some people rather than that's just bad shit crazy no one should do it and it's crazy and you're going to die of vitamin C deficiency. I think it's a little bit of progress. And I agree, if your observation does not match your theory, either you need to check your eyesight or you need to check your theory.

Robb: Right. Well, I just have to say I'm not sure if you're aware of this but there are a good number of folks out in the interwebs who, if you get a drink or two with them and you get them kind of backdoor closed door session asking them questions, and it's like, "Hey, what do you think about this Shawn Baker carnivorous diet gig?" And they're like, "Well, it seems to be working for my patients better than just about anything I've done today." You've got a lot of people that are not out of the closet yet but they're -- At some point, their closet is going to be so full of success stories that they're going to have to start opening the door up on that.

[1:05:03]

So, really hats off to you for everything that you've been doing and just creating the opportunity. Again, there'd been people like Amber who have been running Principia Carnivora for ages. There have been some great people out there beating this drum for a long time and it's fantastic that just as an option this thing is getting some airplay so that if you're really sick and you're looking for some options then this is something, again, that I just can't not wrap my head around the idea that 30 or 60 days of experimentation and see how you look, feel and perform.

If the wheels fall off the wagon and it stinks then clearly we can do something else. But for a lot of people, that's just not the case. It ends up being the final thing that they needed where really nothing else worked.

Shawn: Yeah, I know. I agree. I get a lot of messages behind the scenes, the same thing. This is really good stuff, we really appreciate it. It makes me feel good and it makes me continue wanting to do this. Obviously, there's a lot of arrows being thrown my way from different factions out there but that's fine. I'm sure you get the same thing.

Any time you get popular or at least have a controversial position, there's going to be a lot of negativity thrown that way too. But the positive is what keeps me going and it's nice to see that stuff. Hats off to Amber and Georgie and some of these other folks that are really digging into the science. I'm kind of a brute force, just get it done, let's get the results, and then figure out the science later. I'm kind of impatient but somebody has to do both of a little bit of everything and somebody--

There has to be enough entertainment there to let people at least look. And so some of the stuff I do is for entertainment purposes only but at the same time gets people to take a look and I think that's what's important.

Robb: Absolutely. Well, you do a great job on that. I'm a huge fan of your Instagram feed and pop up on there every once in a while, throwing in my two cents. I really appreciate that. Doc, where can people track you down on the interwebs if they want to follow you and learn more about what you're up to?

Shawn: Right. Instagram is @shawnbaker1967. That's probably where I have the most stuff going on. Twitter, I'm pretty active still, @SBakerMD. And then Meat Heals, I think, is a very good site. We started just a carnivore Facebook group called World Carnivore Tribe. That started up in January. We've got about 6,000 members already. We got about 100 more people a day which, I think, is pretty cool. Hopefully, that will get into the tens of thousands pretty soon, which is pretty interesting.

We have all kinds of people sharing their stories talking about how they're implementing things, the issues we're having with transitioning into the diet and stuff like that, just kind of the same stuff you see with like going on to a ketogenic diet. Those are the main things.

I've got a carnivore training system which is just workout thing that incorporates carnivorous diet if people want to train like I do. Like I said, Robb, I've broken world records in a number of different sports now and been training for 40 years. This is kind of my wisdom as it pertains to training. And then nequalsmany.com. We're still running that program. We're collecting data from people that are submitting lab data and subjective data measurements to try to further get some more science behind this stuff.

Robb: Awesome. Well, Doc, any time you want to come back on the show and talk shop I would love it. I just really love the work you're doing. I'm really inspired by your passion and your bravery with all this stuff. You've been a beacon of light in this story and thoroughly enjoyed your interview on Joe Rogan too. You did a great job on that. Really, really enjoyed that show.

Shawn: Robb, thanks for having me on. It's been a pleasure and a lot of people are excited to listen to this. What I'm going to do is just -- I'm not going to share my labs to anyone but say listen to Robb Wolf's podcast and you can confirm that I didn't make up my numbers. We'll just go from there. I think it's important to put the numbers in context and have the discussion behind that because a lot of people, you have to understand the physiology a little bit.

Robb: Right. Well, this is a great first step in unpacking this thing in a really systematic manner. Thank you for letting me play a part in doing this whole thing and I look forward to meeting you in real life too.

Shawn: Yeah. I got to get out to these low carb conferences and stuff like that hopefully. Like I said, I think I'm at a point where it's not quite so crazy, where you won't be the complete heretic and so I can visit some of these people.

Robb: It's a good time. It's always a good time, always wonderful folks. I was just out at the Low Carb Breckenridge gig, just amazing people out there, really wonderful.

Shawn: Yes. Some really, really smart people. I think the nice thing we see is it doesn't take an MD or a PhD to have an inquisitive mind and an ability to learn this stuff. I think that some of these people that are engineers and folks like Amber, computer software folks, they're just bright, bright people that are helping us to advance the science which I think is wonderful.

Robb: Yeah. Oftentimes it's almost looking like the MD ends up being a stymieing process versus being an engineer of some sort. Those folks seem to be really set in the medical world on fire if anybody is.

Shawn: Well, I say despite the fact that I'm an MD I can kind of figure out nutrition. It's almost an impediment in some cases. It's funny.

Robb: Absolutely. Well, Doc, I will have links to all the references that you had in the show notes. Again, thank you so much for coming on the show and looking forward to chatting with you again at some point in the future.

Shawn: Wonderful, Robb. Thanks.

Robb: Okay, Doc. Take care.

[1:10:37] End of Audio