

Announcer:

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Dave Asprey:

You're listening to Bulletproof Radio with Dave Asprey. Today's guest is returning to the show to talk about new research and findings about the Carnivore Diet. Dr. James Saladino has... Okay. By the way, if you're a longtime listener, his name is actually Paul Saladino, and I called him James Saladino when I was on London Real with Brian Rose who's a long-time friend, and I don't know why, it was probably late in the night or something in the U.K. Anyway, sorry, Paul, that I called you James.

Dr. Paul Saladino:

It's all good, Dave, it's so good to be here. It's been a good laugh for both of us this morning.

Dave:

You're well-known now because you've been talking about the Carnivore Diet, which is something that's intriguing and something that people ask me a lot on the blog now, or at least on social. "Hey Dave, is The Bulletproof Diet compatible with the Carnivore Diet?" I'm like, "Look on The Bulletproof Diet, look in the green zone. Is grass fed meat there? Yes, it's compatible. It works." I'm not so sure about the long-term never leaving ketosis sort of thing. We're going to talk about that.

Paul:

We should talk about that.

Dave:

Yeah. Overall, I think it's an intriguing concept. And Steve Omohundro has been on the show, an AI computer science researcher who reversed a very serious life threatening leukemia with this after nothing else worked, and he went to the ends of the Earth with the Carnivore Diet. So it's been in my radar ever since... What's that guy's name? Starts with an A that I can't pronounce, who eats spoiled meat from Eskimos.

Paul:

Oh, Vilhjalmur Stefansson? Or Aajonus Vonderplanitz?

Dave:

Yeah, the Vonderplunk... Vanderpump? What's the guy's name? I can never remember.

Paul:

Vonderplanitz. Vonderplanitz or something.

Dave:

Vonderplanitz. I've been following that stuff for like 15 years. And the guy's like, "Well, if you look at this ancient, native, indigenous tribe somewhere, they would only eat meat that had sat out for two days on a rock." That's just not going to fly for me. I never did try it. And his followers were like, "Well, if I eat

that I must be detoxing because I'm covered in hives." I'm like, "No, you ate histamine dumb ass." So there's been some extremism.

Paul:

I agree. I agree.

Dave:

But we are made out of meat. We're not made out of corn, and we're not made out of like kale or any plant-based proteins for that matter. We talked about this before, but a lot of people haven't heard that episode, it was a couple hundred episodes ago. What got you into carnivore in the first place?

Paul:

I think that people who've read the book, The Carnivore Code, which I just released, will get a little bit of my story in there, but I've been in medicine for a while. My dad's a doctor, my mom's a nurse. I've always been interested in what is at the root cause of illness, which I think is a fascination that both you and I share greatly. This symptom focused pharmaceutical based paradigm in Western medicine is quite detestable to me and has been super frustrating throughout my medical career. So as I've struggled with my own autoimmune issues, my own medical issues, I think this makes the best stories for all of us. When we all suffer with something, I had eczema and asthma and they really didn't get a whole lot better until I cut plants out of my diet. And there were a lot of steps in between there. I did a raw vegan diet for seven years about 13 years ago.

Dave:

You and me were raw vegans together. Well not at the same time, but... Man, did that just trash you?

Paul:

25 pounds of muscle mass weight lost, and the worst gas of my life. [crosstalk 00:03:40]

Dave:

Did it enhance your athletic performance. Did it change your game?

Paul:

No.

Dave:

What the hell? You mean it didn't work?

Paul:

It didn't work.

Dave:

It's the worst idea ever. You want to get old and sore and weak, that diet is the one for you.

Paul:

It's a horrible idea. And the most hilarious part of it, Dave, was that I shared a small office with two other physician assistants. At the time I was a PA in cardiology. I have a lot of interest in cardiovascular health. Before I went to medical school and then residency, I worked as a PA in cardiology and I shared a small office with them, Dave. And to this day, I feel so bad for the number of my farts that they inhaled. It was so bad. I had such bad gas, Dave. It was horrible. It was horrible.

Dave:

I went to Nepal and Tibet a while ago. That was actually where I first had yak butter coffee. And I did a 10-day retreat, mostly silence, at this amazing monastery called Kopan, but they make you eat vegetarian stuff. And it's all just beans and rice and rice and beans, and some, if you like, peanut butter, all of which are just massive toxins for me. So you're sitting in a room full of a hundred tourists trying to meditate for two hours straight, and the sound of 200 tourists meditating in silence is actually like farting. And you're like, "This is not conducive to a meditative experience." So yeah, I feel you brother.

Paul:

Have you ever heard that Zen koan? What is the sound of one hand clapping?

Dave:

That must be this sound.

Paul:

That must be the sound of one hand clapping, Dave.

Dave:

You're a bad man. James. See, I did it again on purpose this time. I'm trolling you.

Paul:

So after the vegan diet, I went paleo, the muscles came back. I felt a little better, but the eczema continued and it just was really iterating around the eczema for years and years. Eventually I heard Jordan Peterson on Joe Rogan's podcast and thought, "That's a crazy idea, but I'm going to give it a try." The eczema went away within two to three weeks completely. I've never had a recurrence. I've been eating a nose to tail Carnivore Diet for now over two years. And there were some other really striking changes in terms of my mental perspective, my emotional poise. And I thought, "Wow, this is fascinating," and into the rabbit hole I went and here we are more than two years later with a lot of research and all these fascinating ideas that have come out of these iconoclastic status quo challenging ideas that, "Hey humans can do really well just eating animals nose to tail."

And I want to talk about the carbohydrate piece because I've, over the last five months, reincorporated carbohydrates into my diet, much to the chagrin of the, let's just say old school, dogmatic carnivores, but I feel much better with them in my diet. I use honey. Raw, organic honey, Dr. Mercola, shout out to Joe, sent me some of the best honey I've ever had in my whole life. And we can talk about all that stuff.

Dave:

Wow. I actually am keeping bees now on Asprey Farms here on Vancouver Island. So we have a honey that's as local as it gets. But I got to ask this-

Paul:

I'm so jealous.

Dave:

You say nose to tail. How many animals... What's your favorite animal nose to eat?

Paul:

I've never eaten nose, but the idea... The listeners understand the idea that our ancestors, the currently living indigenous groups, ate the whole animal. They didn't just eat the muscle meat. You and I were talking about this offline a little bit, the importance of including these organ meats in your diet however you can, so crucial, so many unique nutrients.

Dave:

It's a little bit disrespectful too to... I raise these animals, like we feed them and everything and "Oh yeah, I just didn't want to get that part. So I just threw it away." I like to not waste and we're doing it ethically, we're not creating suffering, we're creating soil. So to me, it's important that we use all the parts of the animal, which is more in line with a Native American, more of an indigenous perspective.

I can tell you, we just got our crop of pigs from this year. Is it called crops, batch? I don't know what to call them, but whatever. The bacon this year is a whole new experience for me. It is so good. So anyway, that's how it's supposed to be and how it always was. Tell me about the magic powers of collagen. I know, because I cited the study, but people listening. What does collagen do in the gut, that people don't know about?

Paul:

So this is super interesting, you and I talked about this on the first podcast that we did. Collagen is like animal fiber. These peptides in collagen appear to be able to be fermented by the gut bacteria into short-chain fatty acids. So much of the criticism or the potential criticism of Carnivore Diets is there's not enough fiber. There's a whole chapter in my book about debunking all these myths about fiber. But we can use animal protein and specifically collagenous proteins from animals, the connective tissue, and the bacteria in our gut can use that in the same way they might use plant fiber to make short-chain fatty acids, which serve as fuel for the colonic epithelial cells.

So anytime somebody says, "Your Carnivore Diet is zero fiber," I say, "Well, it's zero plant fiber, but I get animal fiber. And animal fiber is even better than plant fiber in my opinion." That's just in addition to all the benefits that having an adequate amount of glycine in your diet to counterbalance the methionine-rich muscle meat, is how beneficial that is for humans as well.

Dave:

Man, there's so much to unpack in there with all the things going on. Do you have a study that says human gut bacteria can turn collagen into butyric acid?

Paul:

There's only been that study in cheetah.

Dave:

Cheetahs, right? That was the one I... In The Bulletproof Diet I referenced that one and I'm like, "Hey, I think that collagen might be good for you." And I went on this three month, it wasn't purely carnivore because I had a little bit of like herbs and things with it, but it was pretty much very, very close to that. But I ended up waking up 12 times a night and it wasn't so good. I ended up saying, "All right, I do better with some carbs." I'm actually very pleased to hear you say, "Look, I'm going to have some selective carbs." Where I ended up after a long time was some plants trash me and some plants are pretty much not a big deal.

Paul:

Exactly.

Dave:

It's not just about lectins. Full shout out to Steven Gundry, who's a friend and has been on the show. It turns out cucumbers really aren't that bad for a lot of people, but for some people they are destructive. It feels like the sensitivity from those is something, but black pepper is actually really bad for other people, in fact like most people, I don't think it's that good for you. If you're on a Carnivore Diet and you're putting black pepper and paprika and cayenne on everything, you might get totally different eczema results, than if you didn't. Right? So I put all those in my, you should watch out for these, but maybe you're okay.

Paul:

So we can talk about all that, but I want to unpack some of the things you just talked about for a moment as well too. My ideas with the Carnivore Diet and The Carnivore Code book are not intended to create an environment in which every person on the planet eats zero plants. The ideas are really aimed at three big things. The first of them is that, as we talked about red meat and organs are central to the human diet for the last millions of years, critical for human evolution, really made us human and our essential part-

Dave:

What about fish, though? I mean, there's pretty good evidence that fish was at least as important in our evolution.

Paul:

Sure. Some fish, occasionally, but there were lots of people who lived inland, who maybe didn't get a whole lot of fish as well. So I think you can get a lot of the nutrients you get in fish, if you eat nose to tail. We can dig into that as well.

Dave:

You can, yeah you can.

Paul:

Yeah. Yeah. And the second point... To just fully elaborate that first point, it's just that, "Hey, animal meat and organs belong in every healthy human diet. They've been incorrectly vilified for 70 years." Point number two, plants exist on a toxicity spectrum. I think you and I see eye-to-eye on this.

Dave:

Yes.

Paul:

They exist on a toxicity spectrum, they have toxins.

Dave:

Plants might to kill you. They really do, they hate us.

Paul:

Exactly. Plants hate us and if we ignore the fact that plants exist on a toxicity spectrum and make plant toxins, which are defended chemicals, we are abandoning a whole bunch of people who could get really well by eliminating the most toxic plants from their diet. Some people like me, like other people you know, do really well with zero plant foods in their diet, other people can have some plant foods in their diet. It's not that I'm trying to tell everyone to eat zero plants. It's that I'm saying there is a plant toxicity spectrum. Understand what the most toxic plants are for you, eliminate those. Eat nose to tail with organ meats, with well-raised red meat and organs, and you will thrive. And the third piece of that equation is pretty obvious to most people, and we'll get into this a little later, but processed vegetable oils, which create evolutionarily inconsistent levels of linoleic acid in the human body, are an absolute metabolic nightmare for humans.

Dave:

What do you think about the advice that you see out there that says you should eat the rainbow, have a huge variety of foods in your diet. How does that make you feel?

Paul:

It makes me have gas, basically.

Dave:

It makes me want to just stab myself in the eye with a recyclable fork, because the more variety of plants you have on your plate, the more likely that one of them is messing with you. And the first step in this little philosophy behind almost everything that I do, whether it's food or other stuff is, "Stop doing what makes you weak, before you do the stuff that makes you strong." Like it's easier to put down the burden you're carrying than it is to add more stuff to it, even if it's positive change, traumatic agents or whatever. I look at this, I'm being healthy, I have 47 different powdered vegetables, many of which were dried in a jungle without adequate mycotoxin controls. Mycotoxins are a plant toxin too. And then I'm going to blend them all together and "Gee, I'm tired after lunch." Well, which of those 52 are you allergic to? Right? Because you don't know.

Paul:

Exactly.

Dave:

I've been that raw vegan, everything you could buy at the farmer's market and eating the rind of this and that, and it is just a bad place to be. I regret having done it and I'm probably still getting oxalic acid

out of my tissues years later. I see, especially young people going down this, so I'm going to be a vegan because I don't understand soil chemistry. I think it's good for the planet or I don't understand that just because there are evil industrial farms, that doesn't mean you can't have good farms. And so all of that-

Paul:

Exactly.

Dave:

... I'm just like, "Guys, don't do what I did because it sucks."

Paul:

It's a horrible idea, and evolutionarily our ancestors used plant foods as survival foods. They're fallback foods. If you can't get an animal and eat it nose to tail, you're going to eat some crappy plants and you're going to ferment them to make them less toxic, but you're not going to make them the center of your diet. You're not going to make them the center of your diet.

Dave:

The amount of technology that we've developed as a species to get rid of plants, like it's fermenting, cooking, grinding, getting rid of [inaudible 00:14:34]. And then in the seventies like, "Oh, there's fiber in that brown rice husk. Let's eat that even though only the peasants ate that and the people who could afford to remove the toxins did." And it just drives me nuts because of the incredible personal impact it's had negatively on my health.

And so I do think you're a bit extremist to be perfectly honest, but you're directionally way better off from a health perspective, from an advice perspective than 99.9% of stuff out there. And you're already dialing back a bit from the meat only, and you've added honey. How much honey? How often? When do you take it? Tell me how you put honey in a Carnivore Diet.

Paul:

So I think about it this way. I was zero carb carnivore, meat and organs for about a year and a half. My physicality was pretty good. I was exercising. Performance didn't really suffer. Sleep was pretty good. Occasionally I would have bad nights of sleep, probably mostly because of stress. We can talk about why you probably didn't sleep well without carbohydrates in your diet. Probably this tryptophan crossing the blood brain barrier idea with large neutral amino acids.

But after a year and a half, I was living in San Diego and I always felt a little bit cold. And I noticed that every time I went to the rock gym, I would get a cramp in my calf when I would try and get that really hard to reach hold, or I would wake up too frequently in the morning with calves in my cramps. And I started to get occasional palpitations...

Dave:

Calves in your cramps.

Paul:

Yeah, with cramps in my calves. With cramps in my calves, yeah. I would occasionally get palpitations and I thought, okay, I'm just going to add back some carbohydrates. The more I thought about it, the

more I realized, seasonally I believe our ancestors would have had some carbohydrates. And this really is still consistent with what I believe is a sort of animal-based Carnivore Diet framework.

When we're looking at plants, we're saying, look, the majority of those plants, the roots stems, leaves and seeds don't want to get eaten. They are highly defended, especially the seeds. The seeds being grains, legumes, beans, nuts, and seeds. Those all have tons of toxins that we talked about. Leaves, tons of toxins. Stems, lots of toxins. Roots like cassava, tons and tons of toxins in those things.

But the fruit is not always totally benign, but usually the plant is producing some fruit and saying, hey, here's a little offering to you with some fruit, less toxins in there. But okay, there's even this indigenous hunter gatherer group in the Amazon, previously uncontacted, called the Kawymeno. Recently did a podcast with Loren Cordain, his group, and we poke about the work of an anthropologist named Douglas London, who went down there. And we see this same pattern mirrored in many indigenous groups. A lot of them will eat nose to tail animal foods, meat, liver, organs, and then seasonal fruit or honey when they can get it. So I thought, okay, maybe this is interesting.

So I added honey back to my diet thinking kind of tongue in cheek, if there had to be a carnivore carb, honey is it, right? Because a lot of vegans won't eat honey. So if a vegan won't eat it, maybe it's carnivore. And I don't really like to get caught up in the dogma and all this stuff, but honey is made by bees, right? So it's coming from a plant, but then again, a cow is also eating grass and converting it into delicious meat and organs. So I think of honey as an animal-based carbohydrate.

And the other thing I like about honey is that there is no fiber and we can talk about why I think that's problematic for me and many other people, but I just know that I react better to carbohydrates that don't have a ton of fiber. People might come back, within the carnivore community now, there's been a big rift. It's really crazy how dogmatic people get. They're all saying, "How can you be so militant about over-consumption of polyunsaturated fats, like linoleic acid, Paul." They don't call me James, they call me Paul. And when you're eating honey every day.

And I say, "Look at my CGM." So, I wore a continuous glucose monitor from Nutrisense while I was doing these carbohydrate experiments. And I've publicly shown that. I've shown it on my podcast, which is called Fundamental Health. My fasting insulin recently, in answer to your question, I eat about 100 to 125 grams of carbohydrates per day as honey, split between two meals. So some people might think, that's a lot of honey, but my fasting insulin less than three micro IU per ml. my C-peptide 0.43. My CGM shows extremely low. My continuous glucose monitor shows extremely low. Glycemic variability with a fasting glucose of 74.

Sure, when you eat honey, you will get a blood glucose bump. It goes from about 76 or 80 to about 125, comes back down to baseline within one hour. That is insulin sensitivity. That is insulin sensitivity. That is normal human physiology. And I just fear that within the low carb community, there's been way too much fear-mongering around any excursion from baseline of glucose or of insulin. I think these are normal and it creates what we might call metabolic flexibility.

So I have shown in my experiment, my personal test tube, and in other people's without a shadow of a doubt, carbohydrates do not per se cause metabolic dysfunction or diabetes. There's something else driving this equation.

Dave:

It's about oils.

Paul:

Exactly, exactly. And I think it's very important to know what the culprit is so we don't blame the wrong person. It's kind of like that movie, *The Usual Suspects*, where they line everybody up and they're looking at the guys and it's like, everybody's kind of pointing over there at carbs and I'm going, no, it's this other guy. That's Keyser Soze. It's not...

I don't know who the real enemy is because if we tell people that carbohydrates are a villain, and of course I'm not advocating for processed sugar or grain-based carbohydrates. But if we tell people that even things like honey from raw organic farms or Dave's bees, or seasonal fruit is causing metabolic harm, they're going to get so confused and they're not going to eliminate the things that are mostly driving the underlying metabolic dysfunction.

Dave:

Given what you're saying, why don't you just have a couple spoons of sugar instead of honey? I mean, you can handle it. You're immune, sorry, your insulin response is fine. Your fasting glucose is all good. So what's the difference?

Paul:

You know, it's an interesting question that would be quite fascinating to test.

Dave:

You should, I mean, sugar is not bad. You told me so yourself just right now.

Paul:

Well, if you look at the studies with honey, so rats and mice are the main animals that we have used that we've looked at fructose in, And a lot of the reasons that fructose has been villainized is because rats and mice do much more de novo lipogenesis with fructose than humans. In humans, it's only 2% to 3% de novo lipogenesis with fructose, which means we'll convert only a small fraction of fructose or glucose into fat.

Dave:

Apparently all in the liver though, right?

Paul:

Yeah, yeah. It can happen in the liver, but it's not ... Within reasonable amounts, it doesn't seem to happen to any particular degree. If you look at it, the majority of fructose actually gets converted to glucose and lactate and usable fuels. But when they look in mice, there's actually some really fascinating studies. I could pull them up and I'll send them to you for the show notes. They show that because mice do de novo lipogenesis differently with fructose, it can be harmful to mice.

But even in mice, when they give mice honey, they see a completely different physiologic response than they do with sugar. So you think, "Wow, maybe there are some interesting compounds in honey." I'll just read out the title of this study if people want to look at it, *Substituting Honey For Refined Carbohydrates Protects Rats From Hypertriglyceridemic Effects And Pro-oxidative Effects Of Fructose*. Isn't that interesting? We'll pull it. I'll send it to you for the show notes.

Then, if you look at honey specifically, and I talked about this on a podcast I did with a periodontist who is doing a Carnivore Diet for his Kappa light chain multiple myeloma, named Al

Danenberg. Honey has been used to treat gingivitis, oral mucositis. It's been used as an anti-cavity agent in kids in rural Africa. Honey seems to have some pretty interesting effects.

Now, I'm not really interested in eating tablespoons of sugar, but there is a possibility, and I think that there's a lot of reasons this could be the case, that honey has a different physiologic effect on humans because it's part of a whole food matrix, and there are a number of chemicals, I think there's over 300 chemicals in honey that we haven't fully characterized. It does appear to have different physiologic effects.

Dave:

I don't think we know all the reasons. One of the studies that I found, and if you look for sleep hacking and you search that... I am the guy who said, "Hey, that tablespoon of raw honey before bed improves sleep quality," because I found a really old study that showed... I don't even remember where it's from right now. I think it's in one of my books... that showed that honey, when it's raw, not heated up and put in your tea, by the way, just raw honey, preferentially makes glycogen in the liver instead of in the muscles, and that liver glycogen goes to the brain before it will go into other uses. Basically if you're having a hard time, you're waking up at three in the morning, the way I used to when I went extreme no plants... Oh by the way, I did have one serving of broccoli a day during that time. I really shouldn't mention [crosstalk 00:23:38].

Paul:

That was the problem, Dave.

Dave:

Yeah, it was the damn broccoli. Anyway, I figured, okay, it goes to the liver. Then the liver can give it to the brain. Then if you're getting that crash at three or four in the morning, because your glucose went too low, and then you get some adrenaline and cortisol, which your body secretes to raise your blood sugar. Well, then of course you're going to wake up with racing thoughts, because you just got stress hormones. You can cancel that with honey. But if you take sugar, you don't get that 22% extra that goes to the liver. It just goes somewhere else.

So I think plain fructose is just plain bad for you to take it isolated the way they tell diabetics to, because it doesn't raise your blood sugar. The problems with advanced glycation end products, the browning of your tissues, that seems like a bad idea. But honey does do something different, and I'll give you that. I think the evidence is in, and your answer, we don't know why. Thank you. It's okay to not know why and still have an effect.

Paul:

Yeah, and just a few more articles for people, they can go look these up, again, we'll put these in the show notes. Effect of Ethiopian multi-flora honey on fluconazole-resistant *Candida* species isolated from the oral cavity of AIDS patients. Honey has an anti-candidal effect. Antibacterial activity of honey on cariogenic bacteria. That is bacteria that cause dental caries. And effect of honey on preventing gingivitis and dental caries in patients undergoing orthodontic treatment.

There's some really interesting things going on with honey. I thought, "Okay, let me give it a try." Low and behold, CGM looks great, fasting insulin is very low, fasting glucose remains low. Very consistent, robust insulin response with return to baseline of my blood sugar quite quickly. Beyond that, my palpitations got better. All of those calves in my cramps, or the cramps in my calves got better.

Dave:

Actually, you were eating calves. They were in your cramp.

Paul:

I was eating calves. They were in my cramps. All that stuff got better. I think, okay, again, this is where I think the point is important to make. Dogma is limiting people from improving their lives. We shouldn't be limiting our perspectives based on a dogmatic adherence to things. We should also really be understanding what is driving metabolic dysfunction, that is the question that we need to answer. I think if we look at the literature, it's not sugar, necessarily. It's mostly linoleic acid in vegetable oils. Now that's not to say, again, that we're advocating for sucrose, but-

Dave:

Well, it kind of feels like you are. It's not sucrose's fault, as long as you don't eat bad fats, you should be able to handle it, in my... I'm paraphrasing, but...

Paul:

It's possible. It's possible. In 1857, there were studies done in which they reversed diabetes by giving people tons and tons of sugar.

Dave:

Interesting. They used to pack wounds with it too. Not just honey. You can put raw sugar in a wound and it'll have an antibacterial effect.

Now let's get a little bit of detail here. There's linoleic acid, there's linolenic acid, and grass-fed animals contain CLA conjugated linoleic acid, which is good for you, at least according to my research. Differentiate between free linoleic acid, conjugated linoleic acid from only grass-fed animals, and linolenic acid. What are the differences? What do they do?

Paul:

So what's very interesting here, and I don't think many people have talked about this, is that fatty acids can serve as a lipo kinds in the human body. These are like lipid hormones. We have adipokines, things like lipocalin and adiponectin, which are hormones coming from the adipocytes, but there are also lipokines and linoleic acid is an 18-carbon omega six polyunsaturated fatty acid. What we mean by that, there are 18 carbons. There are multiple unsaturation points, which are double bonds between carbons, and to do the nomenclature, the first double bond is six carbons from the end of the molecule. That is an 18 carbon omega six polyunsaturated fatty acid.

People always ask me about CLA conjugated linoleic acid. Also an 18 carbon fatty acid that has double bonds in different places. It's not the same molecule. There are many isomers, there is rumenic acid, there are many isomers that can be conjugated linoleic acid. They are not the same molecule. The position of the double bond appears to matter. The shape of the molecule appears to matter. And the cis versus trans configuration of the hydrogens appears to matter in the way these molecules signal. Most listeners will be familiar with the fact that a lot of signaling in the human body is done by ligands and receptors, one thing binds to another, conformational structures matter. Conjugated linoleic acid has trans configuration of many of the hydrogens. Now we're told...

Dave:

That's why the vegans are like, "Oh, it's bad. It's bad. It's trans."

Paul:

Exactly. But it's...

Dave:

And you're like, "No, it's not." So go deeper on that.

Paul:

Exactly. So if you really look at the literature, trans fats from vegetable foods or plant foods are the only ones that have been associated with harmful effects in humans. Naturally occurring trans fats are okay.

Dave:

Because plants want to kill you. It just keeps going back to that.

Paul:

Plants want to kill you. Or if you take a polyunsaturated vegetable oil like linoleic acid from plants and you hydrogenate it at high heat, oxygen temperature, high temperatures or high oxygen environments, that will form now a trans-fat and that looks very harmful or foreign to the human body. But conjugated linoleic acid is a different molecule from linoleic acid. It doesn't have the same signaling properties and doesn't act the same way in the human body.

The third one you mentioned is alpha-linolenic acid. That is an omega-3 fatty acid so the double bond is again in the different position on the molecule. Now, different signaling, different molecule completely. Interestingly, ALA, alpha-linolenic acid is the omega-3 touted by plant-based advocates. But as I mentioned in the carnivore code, most humans are abysmal at converting it to the actual usable form...

Dave:

That's 45 to 1 ratio, right?

Paul:

Yeah. Yeah, you can't convert ALA into EPA, DPA or DHA in humans. So basically, there are studies that I mentioned in the book where people are given lots of flaxseed meal which probably has a lot of oxidizers.

Dave:

That sounds bad for you. I'm sorry.

Paul:

Omega-3. And they can't-

Dave:

How if you cook into a flax cookie, what's that going to do?

Paul:

That's great idea. Let's cook omega-3 fatty acid. Let's take the most wildly unstable fats out there and just cook them. That's a horrible idea. So you can give people flaxseed meal and you don't see any rise in EPA or DHA. So getting your omega-3 from ALA, which is the reason we are also told "Walnuts are good for us." Things like this, that's ALA and nuts. There are not really these EPA, DHA and DPA fats that occur in plant foods.

Dave:

Yeah.

Paul:

People may say, "Oh, allergy," but that's a different story. But generally speaking, we, again, see the pattern animal foods provide us with the nutrients we need. So what's very interesting is that linoleic acid at the fat cells, the adipocytes, both the subcutaneous and the visceral adipocytes appears to be a signal for them to... The door stays open. They can grow. They can grow and you don't want your fat cells to grow.

I think this is the hypothesis that I have here is that linoleic acid is an evolutionary signal for scarcity, for winter. Winter is coming. And if you are getting a lot of linoleic acid fifty or a hundred thousand years ago, you are not eating animals because most animals have very low amounts of linoleic acid in their fat. What are you getting? You're getting stearic acid, which is an 18-carbon saturated fat that we can talk about and stearic acid appears to have the complete opposite effect. It's super fascinating. But linoleic acid appears to be a signal to our fat cells to grow, grow fat cells because winter is coming. You may not have a feed. You're eating seeds. You're eating nuts. You're having to eat the survival plant foods that are high in linoleic acid. Well, what are we doing today? If you look at US, the US population in the last 70 years, our linoleic acid consumption has increased 135%.

We are so much more full of linoleic acid in our fat tissue. I think we are giving our bodies a constant signal every single day of every single year that scarcity is a myth, scarcity is around us and that winter is coming and our fat cells just expand and expand and expand. And eventually, if the fat cells get too big, they start to release different ratios of free fatty acids, specifically the ratios of palmitic to palmitoleic acid and therein lies what appears to be one of the major signals to the periphery from the adipocytes for metabolic dysfunction. That's really far down the rabbit hole, but if we pull back, we can imagine someone at a keto conference who's doing great losing weight but if your fat is still full of linoleic acid, if you are still eating too much linoleic acid in your body, you are giving your fat cells a signal to stick around.

Dave:

How long do you have to be a carnivore or doing this, at least grass-fed, mostly good fats, no bad fats before people really start seeing the benefits of eating good fats, not the benefits of avoiding plant toxins? Do you have?

Paul:

I think it happens quickly and it's a gradual process. If you look at some of the studies on linoleic acid as you're suggesting, there are studies to suggest that the half-life in the human body is between 300 and 600 days. This is part of the problem with it. You don't want to eat it because it's going to get stored, but I think that people will begin to see improvements very quickly. Now, this goes back to the carbohydrate piece.

If you're at the cabin in the woods and you've got the wood burning stove, and this is the analogy for raging metabolic dysfunction, you can stop throwing wood into the fire, or you can shut the door so you can stop eating the carbohydrates and you also want to shut the door and so I think you can see quick changes in metabolic dysfunction or insulin resistance, or sort of this raging fire of chronic illness quickly if you lower the carbohydrates. Again, that's not the cause. It's not the long term solution, but you can do that in the short term while your body gets rid of the linoleic acid and starts to create healthier mitochondria at a baseline. Does that make sense?

Dave:

It makes very good sense.

Paul:

So, yeah. I just want to show a couple of other interesting studies that'll drive point home for people.

Dave:

Okay.

Paul:

And talk about the stearic acid a little bit. So stearic acid is fascinating because stearic acid is an 18-carbon saturated fat. And where is stearic acid found? It's found in suet.

Dave:

[inaudible 00:34:24].

Paul:

Well, it's mostly found in suet, which is the kidney fat.

Dave:

Oh yeah, of course. It's called leaf lard by the way. That's the most valuable lard from a pig is around the kidneys and that's the stuff that's most sought after for baking. So there you go.

Paul:

Yeah. Highest in stearic acid. And in cows, the stearic acid containing content of suet in cows is 25 to 30%. And so what's interesting is this kind of fits with my hypothesis that stearic acid is a signal to us evolutionarily that we have abundance. We have a killed animal that we have gratefully harvested. We are sharing it with our tribe and we have the signal to our body that it can become lean. And then in scarcity, we're eating more plant foods, this is the linoleic signal. Again, we have expanded that to absolutely evolutionarily inconsistent levels with massively processed vegetable oils today but it's an amplification of potentially this evolutionary signal for scarcity.

In mice, there are some really fascinating studies here. Again, they're in mice, but they are super cool. And then I will show a study in humans as well. So this name of this study is dietary stearic acid leads to a reduction of visceral adipose tissue in athymic nude mice. Athymic nude mice are one of the model systems for breast cancer burden. And what they show is that they took the mice and they fed them a diet that was high in stearic acid, a diet that was high in linoleic acid and a diet that was higher in oleic acid. And you can see in this article, and again, we'll link to it in the show notes, I'll send it to Dave.

You can see these mice and you can see the visceral adipose tissue. The mice with stearic acid basically got a six pack.

They lost so much visceral adipose tissue, you can barely see it. But the low fat group, the corn oil group is going to be high in linoleic acid and the safflower oil group, which has moderate linoleic acid and high oleic acid, they all had visceral adipose tissue that was much more than the stearic acid group. So it's really fascinating to see the way that these different fats can be signaling molecules to the adipose tissue, which is inside our peritoneal, the visceral adipose.

In humans, they've done amazing studies like this in kids. So the name of this one is a low omega-6 to omega-3 [inaudible 00:36:40] polyunsaturated fat ratio, a diet to treat fatty liver disease in obese youth. Most listening to this will know that NAFLD, nonalcoholic fatty liver disease in kids will correlate with visceral adiposity. And so what they did in this study and another one like it, they had a 12 week period of low linoleic acid, very low linoleic acid and moderate amounts of omega-3.

And they saw visceral adipose tissue, hepatic fat content, and the subcutaneous adipose tissue decrease in these kids. I believe these were isocaloric diets and there was no loss of overall weight. They didn't lose weight, but the visceral adipose tissue decreased and the subcutaneous adipose tissue decreased a little bit. So we saw total changes in the metabolism of these kids and the liver fat decreased just by lowering the omega-6, the essentially linoleic acid. The other thing they noticed is something that Dave and I have been hinting at, which is these OXLAMs, the oxidative products of linoleic acid metabolism.

Dave:

Yes. Talk about that, oxidized LDL.

Paul:

Yeah. So these are fascinating. This is a great segue to LDL. So when linolenic acid breaks down, there are a number of compounds and they have long names, which we abbreviate, 4HNE, 9HODE, and 13HODE. And these are considered to be sort of these inflammatory products of the omega-6 breakdown. What's fascinating about these products, the OXLAMs, is that they are highly correlated with all of our chronic diseases. Alzheimer's, dementia, metabolic dysfunction, cardiovascular disease, et cetera. And I'll just show a few more studies, which are fascinating here.

So one of the most striking ones, the title is lowering dietary linoleic acid reduces bioactive oxidized linoleic acid metabolites in humans. Basically, lowering linolenic acid decreases OXLAMs in humans. It's just this very clear relationship. Like I said, OXLAMs are associated with Alzheimer's, Nash, nonalcoholic steatohepatitis, NAFLD, these are synonyms like we saw in the kids. And they can see this. When you reduce linoleic acid in your diet, to what I believe is an ancestrally consistent level, 2 to 3% of our calories, you will see decreases in these OXLAMs. So not only is linoleic acid problematic from a signaling perspective, it's problematic from an oxidative stress perspective by causing these OXLAMs.

In another study, they can show that in LDL that's oxidized in people with atherosclerosis, these OXLAMs are 30 to 100 times more enriched versus healthy controls, people who don't have atherosclerosis. So in the LDL molecules of people with atherosclerosis, there are 30 to 100 times more of these OXLAMs in the LDL. So it's oxidizing our LDL, it's oxidizing fats everywhere, it's changing membrane structures and linoleic acid itself seems to be serving as a signal for the fat to grow, which can eventually lead to basically metabolic dysfunction, this peripheral signal, the signal coming from the visceral adipose tissue to the periphery to become pathologically insulin resistant. It all goes back to this evolutionary framework. It's not something we need a lot of. We just need a very small amount. And if

you look at indigenous people across the board, 2 to 3% of their calories from linoleic acid, because they don't eat a lot of these nuts and seeds.

Dave:

There's a little bit in animal fat anyway, right?

Paul:

Very small amounts.

Dave:

But that's all you need.

Paul:

That's all you need, exactly. Grass fed beef, 1.8% linoleic acid. 1.8%. So critics could say linoleic acid is an essential fatty acid and in some ways it is, but what's the dose? And it's a very important dosing signaling effect.

Dave:

Yeah. It's funny because water is essential too, until you drown in it. I mean, that logic, it's fundamentally human logic, but "Oh, some good, more better." It doesn't work there.

Paul:

It doesn't work at all and I think that people will misinterpret the message that I'm saying. And especially now within the carnivore community, people are saying, "You can't avoid polyunsaturated fats." And I say, "Yes, exactly. You can't, but you don't need that much of them." And evolutionarily, just like we would never have gotten massive amounts of milk or nuts or seeds, we never would have gotten massive amounts of linoleic acid. And we would have gotten reasonably small amounts of all the polyunsaturated fats. And by breaking those evolutionary blueprints, we're really creating this evolutionary discordance for us, which appears to be driving a lot of the metabolic disease. Real problem.

Dave:

It's funny, when I was putting together The Bulletproof Diet roadmap, I was like, "Okay, just don't eat seed oils, they're bad." And then people would come up just like you're saying, "Oh, there's this conditionally essential or not even conditionally, just flat up essential things." And I said, "Yeah, but in all of the time that I've been eating this way and doing my labs and all, the lowest I've ever been able to drop my ratio of omega-6 to omega-3s, was 1.28 to 1, which is pretty darn low."

Paul:

Pretty low.

Dave:

Right. And I don't even think it's necessarily healthy to be that low. 4 to 1 is the antiaging ratio. And I think probably 2.5 to 1 or thereabouts is a good place to be. But that was with exceptionally careful dieting. So for everyone out there, even if you're doing what you say in your book, you're reading the

carnivore code, you're out there, you're throwing away all your seed oils, you think canola oil is radioactive, you're still going to have plenty of omega-6. It's very very difficult to become fully deficient in those fatty acids. In fact, I don't know how you could unless you're on a low fat diet.

Paul:

A low fat vegan diet or something like that. That would be possible. The next nuance here is something that you will appreciate, that animals fed corn and soy, especially monogastric animals, chicken, turkey, duck, and pork will accumulate excess linoleic acid in their fatty tissue. There's good evidence to show that an ancestral pig, a hog, like a wild hog, or an ancestral chicken, who knows what that looked like, but chickens not fed on corn and soy have five to six times less linoleic acid in their fat than those fed corn and soy. So animals not fed a species appropriate diet might also be contributing to this in humans.

Dave:

There's no might. Look, we're feeding this stuff to animals, we're hacking the animal's fat and we're eating the fat and it's messing us up. That's why I started raising my own animals. My pigs don't touch corn and soy. It's just not ever there. They eat vegetables and they get some alfalfa and some grass and stuff. If they have the global award, like for wine, for pigs, I would win it. As soon as it goes for sale in the local markets, it's gone because people come in, they try one pork chop, and they come back and they buy everything in the store. Literally the same person will do it every time, because it tastes different. We just have to stop saying, "Maybe, might, sort of, could have, there might be a study." No. You feed corn and soy to an animal, it's no longer suitable for human consumption.

Paul:

Exactly. And eggs, if the eggs you are eating are from chickens fed corn and soy, it's a problem too. So the problem for humans in 2020 is that the majority of our food is no longer eating a species appropriate diet. And if you are worried about linoleic acid, you must be aware that chicken, pork, turkey, duck is all fed corn and soy, and that is going to have much more linoleic acid than your body is expecting.

Dave:

Small farmers, ranchers, tell them you'll pay more for eating less of an animal that is fed the good stuff. You can get it, and it is life changing when you eat it. You glow when you're done eating it. I'm just doing little bits now, but just give me a few years. So you're going-

Paul:

I love it. I'm with you.

Dave:

We're all going to be able to buy steak and bacon and lamb that is actually healthy for us and for the animals, and it is going to be a sea change in human survival and human thriving. I truly believe that.

Paul:

That's amazing. I thank you in advance for that, my friend. That is fantastic. The other thing I'll mention is ruminant animals are better at this. Now, I am not advocating for corn and soy fed beef, but ruminant animals have a much lower amount of linoleic acid, so it's much easier to get grass fed, grass finished

beef, bison, lamb. Most of those animals are very readily available from good farms down here in the States, White Oak Pastures, Belcampo, whatever, you can get them.

Dave:

Yeah, grassroots.

Paul:

Grassroots, yeah. Focus on grass fed, grass finished red meat first. That's what I really emphasize with my work now is get meat and organs from red meat animals, from ruminants, unless you can have dinner with Dave Asprey or you know of a great farmer or your farmer's market.

Dave:

Yeah, let's talk about organs.

Paul:

And we're going to talk about organs. Red meat and organs. I think that this is such an interesting idea because people will say, "Oh, your dietary recommendations are so complicated." And I think, "No, just eat like your ancestors, not like your doctor."

Dave:

Just eat grass fed red meat, grass fed butter, and you're pretty good there. Oh, and add some organs. And then, maybe you want some carbs. Just don't eat the ones that piss off your body. There you go.

Paul:

Exactly. That's it.

Dave:

That's the diet, right?

Paul:

That's carnivore-ish. Tell me again.

Dave:

And add coffee if you want to feel good. Sorry, I got to throw that one in there. Speaking of throwing stuff in there, organs.

Paul:

Why do you think I'm extreme? Dave, earlier you said, "James, you're extreme." Why do you think I'm extreme, Dave? We agree on all of that completely. We're completely on the same page. I'm not extreme at all. But yes, let's talk about organs, and I think that this is such a key piece of the equation too. That if you can create... Remember the three things I'm trying to achieve with the book, red meat and organ, central part of the human diet. Plants have toxins. They can piss off your body. Vegetable oil is completely evolutionarily inconsistent, avoid it. I think the other piece that people miss in addition to the vegetable oils is the organs, and the fact that there are unique nutrients contained in liver and

pancreas and spleen and heart and bone marrow and bone broth, like we talked about, and brain, that we are not getting any more as humans.

No indigenous tribe just eats the back strap and leaves the whole thing to rot. They eat the whole thing. What nutrients am I talking about? Things like riboflavin, zinc, choline, selenium, copper, and unique peptides. This has been one of the most interesting things that I've realized as I've launched Heart & Soil, this desiccated organ company that I'm so excited about, is that peptides are fascinating. BPC-157, LL-37, thymus and alpha one, these occur naturally in our bodies and in organs. And desiccation is low temperature dehydration and it preserves these.

There's all sorts of studies from the 70s which are so fascinating. These historical studies. One of them is by Jeff Bland and he says raw liver or desiccated liver has something in it beyond the vitamins and minerals that enhances the energy when given to animals. And you think, "That's probably a peptide." Whether it's LEAP2 or hepcidin and or a peptide we don't know about, these organs are valuable. Not only are they powerhouses for us from a vitamins and mineral perspective, they've got these peptides, there's BPC-157 in stomach. So if you eat tripe or a desiccated intestine supplement, you can get BPC-157. At Heart & Soil, we're just about to release Fire Starter, which is a high stearic acid tallow. So people don't get enough stearic acid, there you go. It's a stearic acid supplement.

Dave:

Wow. Is this going to be a capsule or something you can just use?

Paul:

It's a capsule. Just a capsule.

Dave:

It's a capsule. So tell me what you're up to you with Heart & Soil, because I'm absolutely going to be adding this back into my stack.

Paul:

So basically raw liver is amazing, and if you can't get it raw, desiccated is the next best thing.

Dave:

It's the same thing. It's still raw [inaudible 00:48:34].

Paul:

Essentially, yeah. It's low temperature dehydrated. So desiccation is you take this freeze dryer and you lower the pressure and then you can lower the temperature. So we can pull water out of organs. Heart, liver, spleen, pancreas, testicles, brain, at a temperature of like 39 degrees or 40 degrees, like your refrigerator. We can pull water out, it's called sublimation. You can even pull water out pretty close to the freezing point of the organ, so you're not even heating the organ. You're basically making this desiccated organ, and it preserves many more of the nutrients, all the nutrients and the peptides. So it's an awesome hack.

Now I want people to eat fresh organs, and if you can't or won't do that, that's why I built Heart & Soil, because ultimately I want as many people to get the organs as possible. And so we're making these desiccated organs out of grass-fed grass-finished cow organs from New Zealand and we're developing a chain of regenerative agriculture farms in the U.S. So we've got U.S.-

Dave:

Oh, you are?

Paul:

Yeah, U.S. products coming, yeah.

Dave:

Good.

Paul:

And we're supporting the New Zealand regenerative farms for now. We've got a bone marrow and liver, and a beef organs, we've got Fire Starter coming, a blood builder supplement. What's cool about the bone marrow and liver is there are no other bone marrow supplements on the market without a flow agent like rice flour. So by combining bone marrow and liver in this proprietary way, you can get desiccated bone marrow with LL ... Bone marrow has LL-37 as a peptide. You can get bone marrow and liver together, and you get these two synergistic nutrient-containing organs in this cool thing. So I'm just super excited to be doing something that gets people this nutrient dense food and makes it convenient for them. So it's really a fun project

Dave:

That is remarkable. There's kind of two things. One, I've got to talk about bone marrow for a minute. A lot of people have never eaten it, and if you ever get a chance to have grass-fed bone marrow, the way it's prepared is they take the femur, the big leg bone, and they'll cook it and they'll crack it open. The inside is this creamy deliciousness, and you actually put it on top of a steak if you do it right. Some people like to put it on crackers, but that's just lame. Why would you do that?

So I gave a huge amount of blood for some procedure with Dr. Matt Cook, down there in the Bay Area at BioReset. I think it was a lab test, or, I don't remember. I've done a lot of work with him. I'm like, "I'm dying here," afterwards. So I had this massive craving for bone marrow. So I went downtown San Francisco. I know a restaurant there on the water, it's called Epic, that has bone marrow. I'm like, "Okay, I'm not positive that stuff's grass-fed. I don't really care. I've got to get some bone marrow and I'm jonesing for it."

I get there, and my brain is kind of off because I've got no blood, and I walk in, I'm like, "There's no marrow on the menu." I asked the waiter, "What happened to the marrow?" He goes, "Oh, we change our menus." So I order fish because that was all there was there. Now, I finished the meal, the kitchen's closed when I walk out. I'm next door to the steakhouse. I was at a stupid fish house.

I'm still to this day angry that I didn't get my marrow because it was like a visceral need, that my body knew to eat marrow to rebuild my blood, and I couldn't do it. I remember that craving so strongly, but you can only crave something you've tried. Otherwise, you just don't know you're missing it. So that's point one. It does taste good, but you don't have to get it that way, and it's hard to do it that way, and it's much easier just to take it on a regular basis, but your body will want it to grow blood.

Second thing, and this is more of a liver thing, and I haven't heard you mention it, Paul, and it has to do with B vitamins. This comes from the work of Steve Fowkes. Steve's been on the show. In fact, it's time to have him back on. He's one of my mentors and a brilliant biochemist, and he explained to me years ago that when you take fermentation and you use it to build B-vitamins, the way we do

throughout the supplement industry, you basically get ... Is it RNS or DNL? Do you remember which isomers B vitamins are?

Paul:

Oh, I'd have to look it up. I'm not sure, but it has to do with-

Dave:

I'd have to look it up, too, but it's essentially this-

Paul:

Yeah, yeah, the chirality. Yeah.

Dave:

Yeah. So what you're doing is you're getting some chiral and some non-chiral B vitamins-

Paul:

Right. Right.

Dave:

... and the non-chiral ones that, or chiral, whichever way it flips, the ones that are not compatible with us, they block the activity of the good B vitamins. And guess what's present in liver? Just the B vitamins that are bio-compatible, or bio-identical is probably the right thing to say. The other ones aren't bio, they're not compatible.

Paul:

Exactly.

Dave:

So you want bio-identical B vitamins. I think you should put that on the back of your label for Heart & Soil-

Paul:

We could.

Dave:

... because liver is the only way to do it, right?

Paul:

It's totally, the enantiomers are exactly biologically compatible in the animal foods.

Dave:

That's the word I was looking for, thank you.

Paul:

When we eat them in a whole food supplement, and that's ... I want to find a better word for it. It's not even a supplement. It's a food, because people will say, "Oh, you always say, Paul, you don't need supplements on a nose-to-tail Carnivore Diet." And I say, "You don't really, but this is just a food. I'm making a food and putting it in a capsule for you." [crosstalk 00:53:39] bio-available.

Dave:

Yeah, and frankly, can I just tell the people who are saying you don't need supplements on a Carnivore Diet, you guys are full of shit. Okay. Let me just tell you this. You know why? We evolved to eat this kind of a diet when we were in a world that had only toxins from mother nature. Since you are now exposed to bucket loads of manmade toxins that increase the load on the liver and cause other forms of inflammation throughout the body, you're going to want to deal with those.

The demand on your body is higher than it would have been 200 years ago, so because of that, of course you want supplements. If you're not taking some glutathione on an occasional basis, you're not upping something like, I don't know, CoQ10, I think you're going to like what happens when you take those things. So don't be a douche. Supplements are useful. That's just how it works. There.

Paul:

I appreciate you so much, Dave. Thank you. Could I just mention that the people I work with who eat nose-to-tail have the highest coenzyme Q10 levels I've ever seen.

Dave:

I believe it.

Paul:

Heart is one of the organs in our beef organ supplement. Heart is a fantastic source of coenzyme Q10, and I would encourage you guys to do these tests that Dave and I are talking about. Get a baseline CoQ10 level, eat nose-to-tail, get liver and heart and pancreas and spleen, and then show your cardiologist how much CoQ10 is in your blood. They've never seen a CoQ10 of two, or three, or four. It's crazy. The upper limit ...

You've got these labs from Quest for Cleveland Heart, and they say a good coenzyme Q10 is 0.73. I routinely see people with two, three, four for the CoQ10 levels. It's amazing. It's just, that is the physiologic level of CoQ10 that humans should have when they are eating an animal-based diet, and just like levels of B12, they're much higher. They're above the reference range. The same should be true for riboflavin and folate, all that stuff. They're so rich in the animal foods.

Dave:

I think it's because you're not getting the anti-versions of those that are blocking things.

Paul:

Possibly. Right?

Dave:

Yeah. I still think most organs, aside from sweetbreads, they pretty much taste like crap. I would rather take a handful of desiccated organs than choke down a liver or whatever. My wife's different. She makes

these liver pies and she cuts these huge pieces of them, and I'm like, "Man, I'm fasting today." Swedish tastes.

Paul:

But it's important. This comes up a lot for people. It's almost like, like we said, if you're going to eat organs, there's a possibility, and the physician in me bristles at this because everybody gets worried about food safety, if you're going to eat a lot of these organs, you either want to eat them raw or desiccated. That's the best thing. You don't want to cook the crap out of most of these organs, just saying, and just like you don't want to... I mean, we talked a bit in that first podcast. I don't think we want to cook the crap out of any of our foods. You mentioned that you're not a fan of overly stewed meats. Neither am I.

Dave:

It's bad for you. You can feel the difference. It really is.

Paul:

Yeah. I eat most of my meats blanched now. I'll make a bone broth and then just flash-cook them in the water for a minute. Less than a minute. They're mostly raw. They're just blanched on the outside. I don't do any cooking in pans any more. People always say, "Okay, vegetable oils are so bad. What oil can I cook in?" And the answer is no. Don't cook in oil, unless you're going to cook in tallow or lard from Dave's pigs, but [crosstalk 00:56:57].

Dave:

Even then you shouldn't cook in it.

Paul:

Yeah. You don't even need to cook in oil.

Dave:

Cook in water. Just a little bit of steam is fine. Add the oil towards the end because that 1.8%, that can oxidize. So it just makes me ill when people take my incredible sacred bacon and then they put it on a high heat. No, you start to cook it on a four or a five, and it doesn't spit and it doesn't smoke and all that. Because if you're getting smoke from an oil, or you're using an oil because it has a high smoke point, you're cooking too hot. That's just how it is. Right?

Paul:

It's crazy. And the other thing that's important to mention to people, just to draw this full circle, and I'm sure you've talked about this before. A lot of olive oil and a lot of avocado oil, the majority are cut with vegetable oil. So there is corruption in these industries. Animal fat is clearly superior in so many ways.

Dave:

What about olive oil? I mean, if you're getting really good olive oil, there's so much good evidence behind the hydroxytyrosol which is present in it. I don't have a problem with a moderate amount of good quality, high-end olive oil.

Paul:

It's probably much, much better than vegetable oil, and we're still trying to sort out the effects of lots of monounsaturated fat on the visceral adipose tissue. My suspicion is that there is a balance and that all of these fats, whether it's an oleic acid, which is a monounsaturated fat, or an 18 carbon monounsaturated fat or a stearic acid or a linoleic acid, they all have signaling roles. And it's probably about the balance of these fats. And so if you're only getting olive oil and you're deficient in stearic acid, that might be a problem. If you're mixing in some really high-quality olive oil, but you're still getting animal fats, that's probably okay. And it's not really a seed oil in the same way these other ones are. It's a fruit oil.

Dave:

It is a fruit oil. Olives are very clearly are designed by nature to be eaten, because the pits are indestructible and so that's how they spread. And that's why fruit is the way it is too. Yeah, okay, here, you can have the fruit and I won't kill you with it right now as long as you're not going to eat the seed, right? Because the birds poop the seeds somewhere else, and that's how plants spread and that's okay. So I get the fruit angle, though I'm still a little suspicious of fructose. I wouldn't too much fruit.

Paul:

Well, we can talk about that on another podcast. It's pretty interesting stuff. I've talked about it recently on a podcast I did on my show. If you look at iso-caloric replacement of glucose with fructose in controlled feeding trials, there's no evidence that it causes weight gain, increased uric acid or increased blood pressure. So I think that within normal limits of consumption, what humans would normally get from amount of fruit or amount of honey in the wild, fructose looks to be pretty benign.

Dave:

If you have a piece of fruit or so after dinner, it's going to be fine. It's the higher doses where you go on masses of fruit. I truly think that's probably going to cause advanced glycation end products. But like you said, that's another podcast. You have LDL levels in the five hundreds.

Paul:

I do.

Dave:

Talk to me a little bit more about that. By the way, that wouldn't scare me. I've seen the studies people with higher LDL that's not oxidized die less of all-cause mortality and they're resistant to poisoning. So talk to me more about your levels and why you feel good about having LDL over 500.

Paul:

So I've had an LDL over 300 for two years plus. I don't have familial hypercholesterolemia, because when I was in medical school, I had an LDL around 100. So I don't have an FH polymorphism. And I believe this is due to the ratio of stearic acid and linoleic acid. There are lots of theories. Dave Feldman is a great friend of mine. He has an energy hypothesis about why LDL goes up at certain times. But what we know about low-density lipoprotein is that this molecule has been resoundingly vilified, probably for no good reason. As you suggest, low-density lipoprotein and all of the lipoproteins in our body, HDL, VLDL, serve some role in the immune system. If we take rats or mice and we deplete them of LDL, they die much

more quickly when shown Staph aureus alpha-toxin or lipopolysaccharide. I talked about this in my book, The Carnivore Code.

Dave:

Important.

Paul:

When we look at observational studies, people admitted to the hospital with all sorts of infectious diseases tend to do much worse with lower LDL. There is a genetic condition that is the envy of cardiologists everywhere named Smith-Lemli-Opitz syndrome, which is a polymorphism in the enzyme that makes one of the enzymes that makes cholesterol. These kids often die in utero, but they have a very low LDL. And those that do survive suffer really, really bad mental retardation, sleep issues and massive infections. The way they are treated is with very large doses of egg yolks to give lots of cholesterol in the diet. But I mean, we know what happens biologically, if developmentally we abrogate the formation, we abolish the formation of cholesterol. It is Smith-Lemli-Opitz syndrome.

So there's a real clear signal here that LDL has vital roles in the human body, like, oh, I don't know, delivering the precursor for the best hormones we make? Testosterone, estrogen, all the stuff that makes life fun to live. Those are cholesterol precursors that your body needs in the testicles and ovaries and your brain, and they help us be fit and sexy and have a libido and have muscles to do cool things and climb walls and go hiking. And that is coming to your body through LDL. So the fact that LDL gets vilified is like, wait a minute, scratch my head. Okay.

But just looking at that, we think, "Okay, Paul, what makes you think that your LDL is any different than someone with diabetes?" And it has to do with the underlying metabolic environment. I can show, have shown, in myself and many of my clients that there is a profound metabolic health [inaudible 01:02:56] insulin is low, C-peptide is low. CGM shows it. You can look at all these metrics. My HDL is high and my triglycerides are low. My HSCRP is undetectable. My F2-isoprostane is low. There's no malondialdehyde, but the peroxides are low. 8-hydroxy-2-deoxyguanosine is low, yada yada yada yada yada, right?

But when someone has metabolic dyslipidemia, which is what happens to the lipids when you are metabolically unhealthy, the LDL goes up, but HDL goes down, triglycerides go up, fasting insulin rises and fasting glucose rises. These are completely different pictures, and if we myopically get focused on LDL, we get scared. But I understand, everyone is scared of LDL. Nobody wants to die of a heart attack. Check this out, Dave. I'm 43. My father had a heart attack when he was 43. My father's a physician. I have an accelerator, I have a [inaudible 01:03:50] history of early heart disease and a primary relative at the same age that I am now.

So when I got that LDL of 533, I thought, "Okay, I'm going to get a CAC," a coronary artery calcium scan. It's zero. And some people would say, "Well, you're too young. You haven't had it long enough." It's like, "Wait a minute. I've had an LDL of more than 300 for over two years. I have a primary relative with early coronary artery disease who had an angioplasty on one of his arteries at the same age that I am, and you're telling me that this isn't valid? Okay, fine. I'll get it again in five years to shut you all up, and then I'll get it again in another five years to shut you all up when it's still zero." But I can't tell you how often this happens, and a CAC, a coronary artery calcium scan is not a perfect test, but it's pretty good.

The next thing I should do is a CTA because they're getting really... Radiation is very low, but most cardiac radiologists would say that if you have an LDL of 533 with an LDL particle number of

greater than 3,500 nanomole per liter, you should have atherosclerosis within six months. You should have calcified plaque within six months.

Dave:

I was like you, a little bit worried. So I'm thinking, "Okay, that first time that I literally took an inch and a half chunk of a stick of butter and put it in my coffee," I'm like, "I wonder. I've been 300 pounds, but all of my science and all of my experience, I'm just going to do it," and after I did it for a while and had the profound changes that I had along with all the other stuff that we've talked about. I said, "Okay, I'm going to monitor my blood lipids and all that, and the changes are predictable. HDL goes up, LDL can stay flat or it can go up a little bit, triglycerides drop. You feel really good. Lp-PLA2, Lp-PLA they drop, et cetera, et cetera.

So, all that's good, but then I started drinking tons of Pellegrino because it's got sulfur in it, and I like it, and I thought, "Well, my calcium that I'm taking..." And I don't take calcium supplements, "It's probably a little high. Just to make sure that the calcium isn't going drive calcification, I'm going to go get a calcium score." and so now, I've been, at that time, maybe seven years of just unlimited butter and grass-fed animals all over the place, and The Bulletproof Diet.

What I found was, it was a little bit disappointing. It was 0.6 on my calcium. Essentially, as close to zero as you can get, and I have a history of obesity and there's also heart disease in my family, in a primary relative, but not at... Actually, what age was he? Older than me, for sure. Probably in his 60s, but that same sort of thing. I'm watching, right? And I can find no evidence that a decade of this high saturated fat with low seed oils, low Omega-6s has done anything bad to me, but man, I'm feeling pretty good. It works!

Paul:

How often have you heard the story from people that you've talked to, they go to their doctor, they've lost 60 pounds. They're muscular, they're sleeping good. They have a positive mood. Their romantic life is good, and the doctor says, "What the heck are you doing?" And they go, "I'm eating The Bulletproof Diet," or, "I'm eating nose-to-tail Carnivore Diet," and the doctor says, "Stop what you're doing right now. Change everything."

Dave:

I love that. And they're like, "I'm drinking this stuff in my coffee," and the doctor says, "You have to stop. It's going to kill you," and you're like, "Based on what evidence?" I've got a question. Now, you mentioned testosterone, you mentioned blood flow and nitric oxide. So there's the ridiculous thing in the movie Game Changers where they're saying, "Oh, if you eat meat, your sausage is going to shrink." And then, "If you eat celery, you're going to be big and strong and manly." and there really is a lot of fear-mongering around that. What's the deal with blood flow, nitric oxide and erections on a Carnivore Diet?

Paul:

I mean, you could take my experience or the experience of thousands of other people who have very happy sex lives and say, "It's just fine." I'll also tell you that I check my testosterone regularly. It's in the 800s now. I just checked it last week. So my personal sexual function is great. I have a good libido. I mean, I think everyone I've worked with has improvements in their libido. So that in The Game Changers, I think most people understand it's pure propaganda.

Dave:

It is.

Paul:

Pure propaganda. It's just not even a real experiment they did. They did this crazy experiment where one night they gave the guys a bean burrito, and the other night they gave the guys a burrito with meat, and they used a nocturnal penile tumescence meter, and that was how they were measuring the erections, like come on guys, this is a little silly.

Dave:

And they used industrial meat, and the people were not metabolically fit, et cetera, et cetera, et cetera. I'm just curious though, on the Carnivore Diet, there's got to be a euphemism for that. It puts more marrow in your bone or what do you...

Paul:

Well, I like to think about the nutrients that we need to make testosterone, right? You need zinc, you need B vitamins, you can even get testosterone and testosterone precursors, and in the future at Heart & Soil, we're going to come out with a desiccated organ supplement that has testicle in it. And so, are there peptides contained in testicle? And so, eating animals nose-to-tail, giving your body the nutrients it needs, sleeping enough, getting sunlight, getting exercise, that's how we become healthy human sexually and physically.

We give our body the precursors it needs to make hormones, and it makes hormones. One of those precursors is cholesterol. Don't inhibit the formation of cholesterol. Don't worry about it if your LDL goes high in the setting of a metabolic health condition that you're creating.

Dave:

Nice. I feel like we could go on for hours, and I think we should end this episode. Do you want to drop a code for Heart & Soil supplements? We didn't arrange this ahead of time, but if you want to do it, I'm happy to share it with listeners.

Paul:

Yeah, why not? Do you want to do like DAVE10? So if you guys want to come check out Heart & Soil, we would love to see you over there. You can always email me, Dr. Paul, drpaul@heartandsoilsupplements.com.

The website is heartandsoilsupplements.com, and if you use the code DAVE10, you'll get 10% off your first order and we will be so stoked to send it to you, and I think you guys are going to love it. We're making what we believe to be the best quality things we can to really get you back to that kind of ancestral health perspective. We really want you to be able to reclaim your ancestral birthright to radical health. That's what I'm all about.

Dave:

Paul, thanks for coming back on the show. I will probably only call you James a few more times.

Paul:

I can't wait. Everybody will know now that they're talking about me when that happened.