Ivor Cummins: 00:00 _____Amber OHearn, great to see you again.

Amber OHearn: 00:03 Always good to see you, Ivor.

Ivor: 00:05 Absolutely. And hey, you and your carnivore colleagues are causing quite a stir out there. It's beginning to worry me a little. I mean, what is all this carnivore stuff? I thought we talked about that today.

Amber: 00:18 You know, no one was more surprised than I was when this crazy diet that I've been doing for a really long time and been sort of ostracized for even in the keto community turned out to finally start garnering a lot of interest.

Ivor: 00:35 Yeah, for sure. It's getting to be a real trend, not a fad, I might add, but an interesting scientific approach.

Amber: 00:45 Well, I think there is a lot of science behind it. Of course, we don't have RCTs even in the way that we do in the ketogenic diet. So a lot of us are really on the pioneering edge of what's happening with this kind of diet. But that doesn't mean that there isn't any information out there at all. And I hope that we'll be able to talk about some of the things we do know,

Ivor: 01:07 Super! And it's attracting some quite interesting personalities like Jordan Peterson and his daughter, Mikhaila, has found what's appeared to be huge benefits from switching to this relatively extreme form of eating, but maybe describe, essentially what it is that the word does indicate what it is maybe just go through the regime.

Amber: 01:29 Well, the word can be confusing, and there isn't really a fantastic word; all of them have pitfalls. But essentially, a carnivore diet means a diet in which you don't eat any plants, or at least you minimize plants. And so this diet is, of course, because it has a low carbohydrate level happens to be a form of low carb diet. But it is, you might say it's more extreme in terms of being more restricted.

Ivor: 02:00 Right. And it would be, I mean, essentially, just meats of some sort or other but also eggs and fish. But really beyond all the meats and animal products and eggs and fish and things, that's kind of largely it.

Amber: 02:15 Yes. So, meat can be a confusing word, because some people use that to mean just red meat even. So I use animal sourced

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| | | food when I'm trying to be more specific. I personally eat eggs, seafood. I even eat dairy products. What I don't eat is anything that comes from a plant. My plant vice is coffee, but I don't eat anything calorically that comes from a plant and I consider coffee a bit of a drug really. |
| Ivor: | 02:46 | Right, yeah. I've tendency to drink too much coffee myself, I'll have to admit. And if you take a carnivore diet is kind of by definition going to be pretty ketogenic by its nature, would that be fair to say? |
| Amber: | 03:01 | Yes. So, ketosis is defined by having a certain level of ketones in the blood, which is a different definition from carnivore. A carnivore diet is a diet that comes from… it's based on exactly what you eat, but a ketogenic diet is based on just whether or not you show up with this biomarker. And when you're not eating any plants, you could theoretically avoid ketosis if your protein level and calorie level were high enough, but in practice, just about everyone who's on a carnivorous diet is in ketosis. |
| Ivor: | 03:40 | Yeah, and that was my understanding, if you're eating all animal products, no plant based for most of the carbohydrates come from, you'll tend to just be in that state. But carnivores are not particularly chasing ketosis or measuring the ketones or really going after that, they're just eating what is essentially a very strong elimination diet. I mean, that's how I've come to view carnivore, that it's eliminating nearly all possible things that may cause an issue for one's health or sensitivities. So is that fair to say it's a real elimination diet? |
| Amber: | 04:17 | A lot of people do think of it that way. And it can be. It is an elimination diet extraordinaire. Most people that have food sensitivities, their food sensitivities are to plants. Some people have in addition, some animal food sensitivities, and that complicates things. However, when you scale back all the plants, many of the sensitivities, the problems that come from them disappear and that's why you'll see such extraordinary results, as you already mentioned with the Peterson's. |
| Ivor: | 04:53 | Right, and maybe that's a segway into talking a little about the challenges in some plant world compounds, I should say. So I know that Steven Gundry wrote a book, The Plant Paradox, and it was not viewed on very favorably by vegetarian and vegan people, even though he's very friendly towards that lifestyle and that diet, because he went through all of the different plant world kind of components that can cause issues. But maybe we |

could do a brief summary here of some of the more notable ones.

Amber: 05:26 Sure! Gundry is funny because he doesn't satisfy the carnivores either because he doesn't really go far enough. He mentioned some very important plant compounds that can be harmful, particularly lectins. But what he doesn't say is that lectins are actually found in, I think, actually all plants, but there, they have different concentrations of course. So the worst offenders for lectins would be grains and legumes. But all plant compounds, or all plants rather have some kind of biochemical defenses. As he emphasized in his book, what we really have is a evolutionary arms race between plant eaters and plants. And since plants can't run away the way that animals can, biochemical defenses are their main source of survival. And this kind of survival is especially important when you're talking about any kind of part of their bodies, let's say that is the reproductive part. So the seed is where reproduction happens in a plant, and so that's where their strongest defenses are met. And that's why legumes and grains, for example, will have the highest level of toxins. But that doesn't mean that there aren't toxins, for example, in leaves, or roots, or other parts of their body; their concentration might just be less.

Ivor: 06:57 Yeah. And it would appear that there are many any humans who can eat a wide range of these plant foods that have potential issues and almost get no reaction. Pretty much, they're fine. And then to varying degrees depending on the compound, you've got subsets of humans that can have a major reaction. But all in all, it's probably an individualized thing that each person needs to learn what can affect them and what might not affect them negatively.

Amber: 07:25 Right. Well, the other side of the coin of that evolutionary arms race is that herbivores have in their turn, developed a great ability and capacity to detoxify these things. And we, a long time ago, millions of years ago, came originally from herbivores, and we carried a lot of that ability to detoxify with us. And this is good because as a survival mechanism, plants can be a survival food, even if we're relying primarily on meat for nutrition. An animal that has the ability to eat a variety of foods during times when not everything is available has a better ability to continue to survive.

08:12 So, that ability to detoxify is important. And you're right, that it varies at an individual level. I think that the source of variation comes in part from long term exposure. So if you come from a

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| | | long line of people who have had a lot of exposure to certain kinds of plant compounds, you're more likely to have developed ways to cope with that toxicity. But secondarily, if you become sick in certain ways, your ability to handle those toxins is reduced. And so I think this is why some people who have developed certain diseases, for example, autoimmune diseases, may have enhanced response to that. |
| Ivor: | 09:00 | Yeah, Amber, and that reminds me off like ApoE4 or certain genotypes, people who have sensitivities more so to the modern foods, generally, especially carbohydrates and refined carbohydrates. So there would be different types of people with different sensitivities. And if someone does have an immune reaction to a particular component that affects them badly and proteins get into their bloodstream that should not really be there, then I guess the immune system is then primed. So there can be an even accelerated reaction to those foods in the future that gets worse and worse. So that makes a lot of sense. |
| Amber: | 09:35 | Yes. The immune system has a wonderful and terrible property of having a very sharp memory. Of course, the whole function of it is to remember foods that have caused you problems or other environmental things that have caused problems, so that you can recognize them right away. But if you have, for some reason been exposed, perhaps your intestinal barrier was opened through trauma or some reason not related to food, anything that you had in your gut at that time may be able to pass through in appropriately into your bloodstream. If your immune system then notices that protein, it may inappropriately associated with trauma. And then once you have that memory, it may be hard to unremember it. |
| Ivor: | 10:30 | Like type 1 diabetes, you know, where the immune system identifies the beta cells and the pancreas has kind of knock cell for foreign. There's many diseases like that. But leaky gut is also a very interesting topic, which we might circle around back to. But just for the moment, the carnivore evidence that humans would have it as an entirely appropriate evolutionary diet, you know, there's various types of evidence that would suggest that carnivory is very appropriate to human development. |
| | 11:06 | I remember looking at my kid's blog of few years ago, or many years ago, he had three part series on, "Are humans carnivorous or herbivorous" and laid out the evidence with the nitrogen and carbon tracking and all. So we might talk about that, what's your favorite evidence, if you will, without being biased, your |

favorite evidence that you find compelling that were very much more towards the carnivore at nature?

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Amber: 11:35 Well, there are a few different things that I think are really strong evidence. One of them is our guts. We don't have the capacity to ferment fiber into fat. It may be surprising to some that all mammals survive on a high fat diet. But the fat might not be exactly coming from what you're eating, but rather from how its transformed in the gut. So if you don't eat fat directly but you eat fiber, the microbes in your gut turn that fiber into short chain fatty acids. And so even if you look at a cow, that animal is getting most of their energy from fat that they derive from fiber. But mammals don't have the ability to digest fiber directly, it has to come from those microbes. And humans simply don't have the gut capacity that herbivores have to make that transformation. And so in order to get enough energy to feed our brains, and, well all of our bodies, we need to get energy from fat directly. And that's because, in part because carbohydrates weren't available to us, in most of our evolutionary period the way that they were once grain agriculture became available.

13:02 So, the gut is one thing. But the brain is really the most important thing. Not only do we need more energy because of our brains, but our brains have specific micronutrients that they need that can really only be reliably attained from eating meat. And in an animal that has a very small brain or has the ability to convert plant forms very efficiently into those nutrients, it's not so much a problem. But when you have a brain to body ratio of the extraordinary size that we do, it really becomes important to be able to get enough of nutrients like iron, iodine, selenium, like DHA, which is only found in animal foods. Iodine, I think I might have said already.

13:56 Many of these things are either not available in plants at all, like B12 is another important one that our brains need for development. Or you can get them from plants, but there are components in plants that limit the absorption or we can't convert them very well. For example, Vitamin A, the conversion in some people can be actually very, very low to get it from the beta carotenes. And not only that, we didn't have, like, all the carrots you could eat; the amount of vitamin A that you could get from plants would have been much more random. Whereas vitamin A from animal source foods, if you eat the liver, is a very large source.

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| Ivor: | 14:38 | Yeah. The vitamin A, I think I've seen some people and some studies have like only a 10% conversion and lower and it varies quite widely. |
| Amber: | 14:49 | It does. Vitamin A conversion is a bit complicated, because you will convert more depending on how deficient you are. So that does fall in favor of a vegetarian for example, who's not getting any vitamin A in the form that we need from meat, their bodies are more alert and more able to… won't do that conversion because the body knows that they're deficient. But even so, the total amount can be quite low. And moreover, the body never converts more than it needs in an acute sense. So you can't store any that's extra. Whereas if you eat some from liver, for example, and you have more than you need immediately, your body will set it aside. And that's something you can't do from plant foods. |
| Ivor: | 15:44 | I'm not sure that you mentioned there, the Kleiber Law - you know, the mass of an animal versus its brain size. And we are way, way over and we're just off the scale in terms of that relationship. We appear to have traded off our stomach size in order to enable that much bigger brain. But as a result, we needed much higher nutrient dense type foods really than plant foods. I mean, that indicates it was really part of our evolution. |
| Amber: | 16:16 | That's right. Yes. If you look at a graph of the encephalization quotient, they call it, it'll be this line where most animals fall more or less on the line of what you would expect to their brain size to be. And then we have this huge gap jump to humans where their brain is so much higher than you would ever expect. And it does take a lot of energy. I think in an adult, we use something like 20 to 25% of the energy, that we're using at any given time is going directly to our brains. And without that ability to convert fiber into fat, we had to get it directly. We had to use what they call high dietary quality foods, which is a shorthand for meat. That's what they mean in papers when they say "high quality" they mean meat. |
| Ivor: | 17:12 | That makes a lot of sense. And again, well hopefully it's high quality meat because we also have a challenge maybe that the industrial farming and production, particularly in the US with hormones and other kinds of treatments might not be the ideal meat. But then again, that's all what many people can get hold off. |
| | 17:31 | The nitrogen then I found very interesting, the nitrogen isotopes that can very accurately and very convincingly tell where an |

organism is on the food chain. So again, I originally got them from Dr. Eades' blog posts with all all the papers summarized. But maybe talk a little around the nitrogen isotope-ing and this archaeological investigations that have been done that most paleoanthropologist would now take for granted that humans essentially of all through carnivory based on that and other evidence.

Amber: 18:09 The evidence is incontrovertible based on this isotope analysis that we eat a high level of meat. So high, in fact that we would be classified as hypercarnivores. So that means either we are eating more meat than other carnivores or we were eating other carnivores in addition to the herbivores. That's a bit of a point of contention. But regardless, it's absolutely clear that we eat extraordinarily high levels of meat.

Ivor: 18:44 Yeah. And the graphs are quite impressive, I must say. I kind of like graphs and data. But to see and just for a simple explanation, you know, the nitrogen is at a certain level in the plant foods, and then herbivores enrich themselves with nitrogen isotopes to a certain level if you're a herbivore. And then if a carnivore eats a herbivore, and it's a real carnivore, it ends up with higher levels of nitrogen because it concentrates further. And on all the graphs on the bone analysis and collagen, the humans show up as actually above even many of the carnivores, as you say, a hypercarnivore who is eating carnivores, or even eating more meat.

Amber: 19:25 That's right.

Ivor: 19:28 Very good. What are you missing then? So if you look at the negatives, because I think most people will accept all the way back to meat and to veg, okay? Meat was always viewed as a highly nutritious food stuff for humans. I mean, historically, it really was. And it was also viewed as you know, that a substance that if you didn't have any, for long periods, you could very well become malnourished. So generally, the history is it's viewed as a very, very energy dense, nutrient dense food. But what are you missing though? If you eat meat only, what list of things might you be missing or more deficient in by actually leaving the plant world aside?

Amber: 20:14 Well, it's funny that you say that. I agree that meat has always, at least until recently been known as something highly nutritious. But in recent times, it seems that we've forgotten the important nutrition role of meat. When you think about where you're getting your micronutrients, if you do, for

example, a search on the internet for micronutrients, you'll get pictures of vegetables, fruits and vegetables. And vegetables have really

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gotten a reputation of being the source of our micronutrients. The only way that I can explain that to myself, in my mind, is that vegetables are so poor in calories. So basically, undesirable as a food, that in order to try to get us to eat them, people thought about, well, what can they provide? And it's true that they can provide micronutrients, but they're not necessary for those micronutrients. And that has created a lot of confusion,. Meat now has earned a reputation of only being a source of protein and fat. And that's really not accurate at all.

21:37 So I think, if you look back at even just a century ago, people like to say, "Eat the way that your grandmother did." Well, if you eat the way that at least, my mother's grandmother did, it probably didn't contain five servings of fruits and vegetables, especially not all year round. It would have been, until quite recently, we were eating mainly grains for energy, and meat for nutrition. And so if you take away those vegetables, as long as you're eating sufficient meat, it turns out that you're able to get pretty much everything you need. In fact, there isn't a nutrient that you can't get from an animal source food.

Ivor: 22:25 And vitamin C is one that would come up quite often?

Amber: 23:06 That is the favorite, because plant foods do have higher levels of vitamin C than meat. And if you look at the RDA for example and compare it to nutrition charts about meat, you might think that you can't get enough or even that you can't get any. For example, the USDA database of foods and their nutrition content actually lists them as having no vitamin C whatsoever. That turns out to be inaccurate. And if you look at the documents showing how they came up with all the different values, they actually say that they assumed it to be zero. So they didn't even measure it.

23:47 There is vitamin C in meat. It's not a lot, it doesn't compare, of course with oranges or tomatoes. But the fact is that it's been known for over a century that meat actually cures scurvy. So the Arctic explorers who were able to obtain fresh meat, it can't be canned, but fresh meat was known to be the way to cure scurvy. So how this confusion started to develop, I don't know. But it turns out that if you're eating as much meat as a carnivore

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| | | does, the meat itself will have enough vitamin C to stave off scurvy. |
| | 24:29 | But there are other reasons that might be true. For example, vitamin C, the scurvy consists… your body falling apart because you don't have the ability to make collagen without vitamin C. And collagen is in all of your tissues. So one of the things that will start to happen when you get scurvy, which takes a couple of months to develop, is that your wounds will stop healing, you'll start bruising, and your gums will bleed and eventually your teeth will even start to fall out. But the first symptom of scurvy before any of that starts to happen is tiredness. And the reason for that is that the other thing that vitamin C is necessary to create is carnitine and amino acid. And carnitine is used in all of your cells, it's necessary for getting fat into the mitochondria to make energy. So if you are deficient in carnitine, you'll suddenly start getting tired, because you won't have enough energy. |
| | 25:34 | So the first symptom of scurvy is tiredness based on the low carnitine levels. Well, what's a great source of carnitine? Red meat. So, another reason that scurvy is prevented when you eat an old meat diet is you're eating so much carnitine that it spares that role of vitamin C so you don't have to make it anymore in your own body. Or at least do not make as much. |
| Ivor: | 26:02 | I've read on that on your… actually you have an excellent summary of the carnivore diet recently released. So I must put that in the show notes as well. That's a 25-pager, going through every aspect. So, great resource. |
| Amber: | 26:16 | Thank you. |
| Ivor: | 26:18 | And the vitamin C actually, the other aspect is - which I love because it applies to magnesium also, and we'll talk about magnesium in a moment - but vitamin C, if you are not taking in a lot of glucose based foods or carbohydrate based foods, you inherently from the biochemistry have a lower need for the Vitamin C also. So that's another moderator of the amount you need. Maybe go through that a little. |
| Amber: | 26:44 | Sure, yes. One of the reasons the RDA vitamin C is so much higher than the amount you need to avoid scurvy is based on a speculative idea that extra vitamin C could be providing antioxidants that would help with heart disease and diabetes. But it turns out that when you have, as you know, if you have heart disease or diabetes, then you have metabolic syndrome. |

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| | | And that means you typically have extra glucose in the blood. And glucose and vitamin C compete for uptake in the cells. So the ratio of vitamin C to glucose can become important to determine whether or not you're getting enough vitamin C into your tissues. |
| | 27:30 | Some people have actually described metabolic syndrome as a kind of internal latent scurvy, because some of the symptoms of what happens to your tissues are like scurvy. For example, diabetics have problems with wound healing. And they will lose limbs eventually, because their bodies aren't healing. And that could be because of reduced vitamin C uptake in all your tissues. But if you just remove the excess glucose, suddenly your vitamin C to glucose ratio automatically goes up. And then you may not have as much problem with getting the vitamin C into your tissues in the first place. So just lowering the glucose and dealing with that metabolic syndrome problem can itself improve your vitamin C status. |
| Ivor: | 28:24 | And interestingly, it's becoming very clear across the world now and irrefutable that lower carb diets are an excellent intervention for people with prediabetes, or diabetes or insulin resistance. And we see amazing results and for instance Professor Volek and Phinney's incredible results. So that's becoming more mainstream. |
| | 28:44 | So yeah, if you're going on a diet that eliminates a lot of carbohydrate, you know, that's going to improve the very things that would demand more vitamin C and make the availability of vitamin C more important. So there's trade-offs everywhere here. The magnesium, potassium, sodium and the salts, that's another whole area that people may hear. If you do go on the strong elimination diet, like we're talking about, you may be missing magnesium, potassium, or sodium, which often quite a bit comes from plant food or plant world foods. |
| Amber: | 29:17 | Well, there are two different scenarios. If you're just transitioning to a low carb diet, which would include a carnivorous diet, then during that phase of so called "Keto Adaptation," there are electrolyte imbalances temporarily that can be induced. And so during that period of transition, I think it can be wise to actually supplement with those electrolytes. But once you've become stable, it seems to me less clear that you would have a continuing need. You mentioned Volek and Phinney, they did some experiments in which they showed that potassium levels can, for example, be very important, whether you can adapt to the diet if you don't have sufficient potassium |

levels. But one thing that they mentioned was that if you're cooking meat and throwing away all the liquid, you may have lost some of the potassium. So the potential to get potassium, enough potassium is there in the meat. And the same is true of magnesium. However, you have to be a little bit careful about what you're doing when you cook it if you want to get enough.

30:30 The other thing is that imbalances can be created. For example, if you're eating a lot of salt, that will increase your need for potassium. So the more that you're adding to your diet from different sources, the more imbalanced you can get. I don't know about the science behind it but I have noticed anecdotally that some ketogenic dieters who are not on a carnivore diet seem to need a lot more salt. And it may be because they're getting a lot of extra potassium or other electrolytes that have created an imbalance. It's very complex. But the potential is definitely there when you're eating meat to get enough from the meat alone.

31:23 One other factor that can come into play is that fiber and phytates strongly interfere with the ability to absorb minerals like magnesium and potassium. And so when you look at the RDAs, part of what they're trying to cover is the possibility that your diet is interfering with absorption. And so obviously, carnivores are going to fall on the very low end of the spectrum of needing to make up for fiber or phytates.

Ivor: 31:50 And there's also phthalates and other compounds and plant foods that, as you say they can deplete you or stop you absorbing so the RDA has to be adjusted to compensate. But that may not really apply when eating a whole-foods, animal foods based diet.

32:07 I tend to think of magnesium from just research I did is really important. And the potassium sodium balances a great point. And those copper and zinc balances can be really important to. Whereas my sense is that magnesium is not so much a thing that you can very easily go over on and have it really disrupt something. So we actually use magnesium citrate powder and we just put a little into all of the family meals when we're cooking. You know, we have a large family. And I just see it as a blanket way to keep magnesium a little higher than the average person. Because we know a lot of people are deficient. Would that be a fair thing to d, is just keep a few hundred milligrams floating into your meals maybe to be covered?

Amber: 32:52 I think it's unlikely to hurt and may help.

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| Ivor: | 32:55 | Well, yeah, that's what I reckon because no one has a monopoly on the truth. And this science is complex, as you say. And even with many years of research and many network colleagues around the world, filling in your gaps and knowledge, there are no simple categorical true answers for really a lot of this. So, fair enough. |
| | 33:16 | The other one is the organ meats specifically. So there's kind of two schools of thought out there on carnivory generally. And one is that you can just eat meat, once it's fatty meat. You don't want to eat too much lean meat because of rabbit starvation. But you don't really need to eat organ meats. And then there's another belief system that you must eat organ meats. And it is not appropriate to just eat, you know, steaks and cuts of meat and not eat the nose to tail pattern of our ancestors and have those kidneys and liver and all those other yucky bits. What do you think? |
| Amber: | 33:58 | Yes, you're exactly right. There is a point of contention within the community. So, there are people who have been eating a carnivore diet without organs for very long time. Periods of years and decades, even where they haven't had any organs and they haven't encountered any deficiencies, and they feel great. So it's hard to argue with observational evidence like that. |
| | 34:22 | On the other hand, we do know that organs are great sources of nutrients that we need, including those ones that I mentioned for brain development specifically. And so it does seem prudent to eat some man of organs. You brought up the fact that many of our ancestors did that. But I think when you say ancestors in that sense, what you mean is more recent societies that we have records for and we know. So for example, many people in Europe, I don't know why the Americans have issued organs; I think many of them are quite delicious. But many people in Europe still do eat organs even on their standard diets. |
| | 35:04 | On the other hand, we don't really know what people in the Paleolithic past did. It's quite possible that we ate only the parts that we found most appealing and left the rest, or that we shared it with dogs. We've had dogs in our history for a very long time. Stefansson who lived with the Inuit has claimed that the Inuit gave most of the organ meat that they encountered to the dogs. However, I've heard a contrary report so it's hard to tell which is actually true. |

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| | 35:38 | In any case, you're right, it's really an open question. There are many reasons to believe that when you remove carbohydrates, just like it affects vitamin C, it affects magnesium, and it may affect many other nutrients in our system and what we need. And so you can't simply base our level levels of need on the RDA because they simply weren't developed on a carnivorous diet. |
| Ivor: | 36:06 | And I guess this could be another scenario where you know, if you want to do this kind of diet for the benefits, which will probably wrap up with talking around some of the proof points and benefits. But if you do want to do it, you're doing it of your own volition, you know you're exploring, you should be watching your blood markers and watching for all the possible problems. But also, to play the safe side while doing carnivore, the be no harm and ensuring that you do get these nutrient dense organ meats, at least to some extent, like pâté. I'm not a big liver person, but I love pâté.. That's my way to get the liver. And I do like kidneys. There's a local restaurant, "La Bodega" near me. And every time I go, I get their tapas and it's kidneys with some chorizo. And they're actually quite tasty. But again, they're not for everyone. But if you do try and focus on getting eggs, organ meats, and nutrient dense foods like that, it's probably... it's playing really safe. Would that be a fair way to put it? |
| Amber: | 37:08 | That's true. And I'm glad you mentioned eggs. Eggs I consider an honorary organ. They have many nutrients that would otherwise only be found, for example, in liver. And I guess that's because they the components that are necessary to build a whole chicken which would include the chicken's organs. |
| | 37:31 | In terms of playing it safe, you're right that we're absolutely pioneers here. And we have to take responsibility for the choices that we make, and not just follow authorities who tell us what to eat, because that doesn't necessarily work out very well either. We have to be our own advocates. But it's not always safe to take more things. So, while you could consider it's just prudent to eat more organ meats or to take certain nutrient sources like vitamin and mineral supplements, it's also not without risk. We don't know what the results are going to be either way. Some of the long term carnivores that I've talked to who don't eat organs have actually said that they felt better when they stopped eating that level of organs that they had tried. So, we don't really know either way. But I really think it's important to do what you feel most comfortable with, given how you feel and what you believe based on the literature that you should do. Taking responsibility for your own health is the |

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| | | best thing that you can do even if you're making mistakes and learning along the way. I |
| Ivor: | 38:49 | I couldn't agree more, Amber. You know, everyone has to be their own explorer, especially when pursuing optimal health or dealing with a pernicious kind of health problem or autoimmunity issue. You really got to take big steps in many cases to try and get to the root of what's going on. And hence we, I guess we see Jordan Peterson and Mikhaila's example of quite extraordinary dramatic improvements. But again, other people may not see that, you know? It's a very individual case. |
| | 39:20 | The proof points then that brings us nicely to, we know about the famous cases, but maybe some of the anecdotes and I know I was at a conference where you went through a series of anecdotes from people in your network. Very interesting kind of knife edge changes to improved health related to this switch. |
| Amber: | 39:43 | Yes. That study that I did, it was a small survey and the population that I was trying to get was people who had specifically been on a ketogenic diet for some time. And then compare that to a carnivorous diet and what kinds of differences that they were seeing between those two specifically. And the reason I did that was to try to figure out which things were happening not just because of the low carb aspect. And the improvements that were most reported were things "Yes" on autoimmune conditions. So things like asthma, arthritis, psoriasis, Crohn's disease, other things that had to do with digestion that are not necessarily autoimmune, such as bloating and gas and discomfort that went away when they took the plants out. |
| | 40:36 | Skin issues were really big. Just from everything from rosacea, and just acne, to more serious things like eczema, which is another one of these things that nobody knows what to do with, even viral skin conditions like herpes, cold sores went down compared to just a low carb diet. |
| | 41:06 | And then the other big thing was cognition and mood. Many people were seeing great improvements in mood, even compared to a low carb diet. I know that many people get improvement in mood and cognition on a low carb diet, so we're talking about even further improvement on top of that. And personally, the reason that I've been on a carnivore diet for so long is the the total remission of a psychiatric condition that a ketogenic diet itself didn't address. |

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| Ivor: | 41:40 | I'm glad you mentioned that one, Amber, because that is one that's quite connected as you say to a low carb regime. Very connected to Quito and intermittent fasting. And I think possibly this transition over the beta hydroxybutyrate and the effects neurologically. But then this point that the elimination nature of carnivore may bring you that extra step for the most sensitive people who are being affected by certain plant world foods. Now, that dramatic kind of result that you can get, would it be, or for some people, would they look at maybe reintroducing plant foods, because I've heard mixed messages on whether reintroduction can be really successful. |
| Amber: | 42:28 | Reintroduction is a great question. For me, the risks of reintroduction have, in some ways outweighed the appeal of trying to get a specific type of food back. So I haven't done a lot of experiments personally, I'm trying to reintroduce foods that I had previously. However, I don't see any harm in doing it. I don't see any reason to eat a more restrictive diet than you actually need to. Because we want to maximize pleasure in all ways, right? So if you really love brussels sprouts and you think that your life would be better including them, then by all means you should find out if those particular foods are going to be compatible with the extra health benefit that you may have gotten from eliminating all plants in the first place. |
| | 43:22 | So, I am in favor of reintroduction in terms of something that you want to pursue and find out the specifics of what may be causing your symptoms. But on the other hand, because I know so much about the nutrients sufficiency of a meat diet, and also, it's surprisingly easy to get used to living without the vegetables. I know before I started it, I thought, "How could I even do that? It sounds so boring." But it's surprisingly satiating and satisfying. Both. |
| | 44:02 | So I think that it's an individual choice whether to try reintroducing or not. I think it's safe either way, ad it's something that you have to do based on what your higher values are and how much pleasure you think you're going to get. In the end, I'm actually most driven by a kind of utilitarian argument that says that feeling good is the highest value. And so if reintroducing something gives you more pleasure than it gives pain, then it's worth doing. |
| Ivor: | 44:33 | I'll go along with that, Amber. The only other little note perhaps for people is that reintroducing a potentially problematic food, it may be several days or even a week or two, before reaction becomes apparent. So it's not like you can introduce various |

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| | | foods every day, and then see your reaction and reverse one step. You could end up very confused very quickly unless you reintroduce one at a time and give plenty of time for a response. |
| Amber: | 45:01 | That's a really good point. With some symptoms in some people, it will be immediately apparent. But you're right. I for example, have had reactions to supplements that I tried after carnivore. And it took over a week before I realized that that supplement was causing problems. |
| Ivor: | 45:22 | Gundry occurs to me again now, yet another caveat. So, I have an interest in ApoE4. You had a good conversation, a public conversation with Steven Gundry, MD a few years ago at some conference. I wasn't there but I saw it on video. But the E4 sensitivities, they seem to be particularly towards cheese. But also there's the sense that E4s with metabolic damage who may become diabetic through the modern foods - and now they have metabolic damage - there may be some sensitivities around animal fat and/or protein and particularly, it seems, cheeses perhaps being the biggest offenders. And maybe people who have, say a high calcification score and a lot of damage, given that they're the most at risk, maybe they should tread very carefully and watch their blood markers of inflammation and other things if going to a more focused, shall we say diet like this? What do you think? |
| Amber: | 46:25 | I actually disagree with Gundry quite completely on that specific point. What I was talking to him about then was that, he hadn't separated animal fat in particular from, as you said, the dairy fats; so butter and cheeses. On the one hand, we're not sure if that sensitivity comes from animal fat in general or just from the dairy fat. But then, if you look at what the specifics are of the problem that he was looking at, that sensitivity was a high LDL. So if the only consequence that you're getting as an ApoE4 is more propensity to high LDL from animal fat, then that raises the question of whether high LDL is itself problematic. And if you don't as I don't believe that high LDL is a independent risk factor for heart disease, then it becomes a totally moot question. If you do think that a high LDL is going to be a problem as an ApoE4 then you're in a bit of a quandary, I think, and may have to reconsider. |
| Ivor: | 47:48 | Yeah, the LDL question keeps coming up. I often wonder when it'll fade away a little. But LDL is highly dependent. So having a high particle number may indicate a tendency towards a higher |

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| | | risk, but hugely dependent on many other factors. So it's very far from an independent factor, in my mind. That's one thing. |
| | 48:12 | In defense of Gundry, though, I will say that I met with the ApoE4 Group in San Diego around 18 months ago, and they clarified something for me, I think he may have shifted his focus. And they told me with absolute assurance that Gundry no longer focuses so much on high LDL or high LDL particle count. And it appears - I don't want to misdirect on him - but it appears he has focused very much more on to small dense LDL and a range of inflammatory markers and maybe LIPO-IR from the advanced panel. So I'd have to say, well, that's good, because the LIPO-IR, (Insulin Resistance) and the inflammatory markers, various ones, and the small dense LDL even, are more dependable metrics or measures of something perhaps being awry, certainly than the high LDL. So at least there's that. |
| | 49:09 | I'm hoping to get actually on the podcast, so I'll keep at it. I'd love to talk about the whole thing, you know, long format, and tease it all out. Because my own son is a double E4, who obviously has massive risk for Alzheimer's and everything else. And myself and my wife are both E4s and I haven't even tested the other four children. So we got a lot of E4 going on. |
| Amber: | 49:31 | Right. And I would definitely find those markers much more persuasive as potentially indicating problems. So then what I would really, really like to find out is whether saturated fat can be decoupled in his data from the dairy fat because dairy can have other issues like being more insulinogenic or there could be maybe just fewer adaptations, since dairy is a much newer food for humans than meat would be. So, if you can get to the bottom of that I'd be all ears. |
| Ivor: | 50:10 | I can but try, Amber. I'll snag him somewhere along the line for sure. And yet dairy, dairy has many kind of question marks around it. I think many people can have dairy and that's fine. There's the casein A1 versus casein A2 question. There's also if you're not losing weight and you're attempting to, dairy may not be a great idea to have a lot off. I've seen that myself. And then we come to this question as well, is dairy a large part of the potentially for sensitivity? And maybe less so meats and fats? And even then there's the protein. I mean, is it excessive animal protein that might connect? Or is it the actual saturated fat classic thing? But we'll come back to E4 again. |
| | 50:55 | So, I think we'll probably want to keep this this pretty tight and at least give people the knowledge around carnivore, dispel |

some of the myths which I think is has been done most excellently in this conversation. We'll direct to your excellent, large document, giving all of this and more. And are there any last things you'd say about carnivore generally as an advocate for carnivore?

Amber: 51:20 Well, I think that the carnivore diet is safe to try and can be very helpful for certain people. I don't think it's necessary for everyone. But because that kind of risk to benefit analysis shows so much potential benefit (it's so little risk) it's worth giving an experiment to especially if you're not seeing all the results that you would hope to on a merely ketogenic diet.

Ivor: 51:50 Great summary. And I do tend to say to people pretty much when they ask about it, I'm not so much advocating it, and we need more data. And that's why pioneers like yourself, Dr. Shaun Baker, and all the other people out there are actually building the data. Even if a lot of it's anecdotal, the research as to what is in the published databases is all going to get dragged out whatever is there for us to all see which is fantastic. But I tend to say to people, "Look, if you have a very persistent, very serious issue that all your dietary attempts and other interventions have failed to resolve, especially if it relates to an autoimmune type phenomenon," I say the same thing. You know, "maybe try that for a while as the ultimate elimination diet." Because given we evolved via animal foods, which the Paleo anthropologists as we say, there's no real question around that. They're probably… you never really ever hear of meat raised as to causing a problem with autoimmunity or anything else. You literally don't even hear it from the anti - meat people. So it can be a very good thing to go to the ultimate elimination diet, take out everything that might cause a problem completely. And you're left with meat, fish, eggs, right? And then see if you improve over the following few weeks without ultimate elimination diet, and then start making your decisions long term as to what you'll add back in, but at least give yourself a chance to find the baseline with everything potentially problematic removed. Get your baseline, and then use your judgment, and research to – to carefully plot your own curve from there on.

Amber: 53:35 Very well said.

Ivor: 53:38 And just before we go though, there's one more thing. Is Siobhan still in the background? The Lipid Maestro Siobhan?

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| Amber: | 53:46 | Would you like to have a word with Siobhan? We'll just see you here? |
| Ivor: | 53:55 | Will be seeing you guys in Denver in just a few weeks time, I think. And your Carnivore Conference, I almost forgot. Your Carnivore Conference has been timed to pretty much match up nicely with Low Carb Denver with Dr. Garber, so they're back to back. |
| Amber: | 54:14 | Yes, I was hoping that... because it's such a new conference, and I wasn't sure how much interest there would be, that people who are going to the Low Carb Denver conference might want to stop in since it's just the day before. And that has seemed to have worked out very well. |
| Ivor: | 54:33 | Excellent, Amber. Well, listen, thanks very much for this. And I'm sure we'll be coming back to this topic again. There are a lot of political announcements of moves around the world in the last month or two actually particularly and they are tending to push very much to the other extreme. So this is going to stay really topical. You're in an interesting field. There's no doubt about it. And no better person to be so. |
| Amber: | 55:01 | Thank you, Ivor. Pleasure to talk to you today. |
| Ivor: | 55:04 | Great stuff. Always a pleasure. We'll catch you in Denver. Bye now. |