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KETO

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Supplements for a Ketogenic Diet

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Wendy: Hello, everyone. Wendy Myers here from [liveto110.com](#). Thank you for joining the Medicinal Supplements Summit. Today, we're discussing the benefits of a high fat, low carb ketogenic diet and supplements that can enhance that diet. Today, my friend and special guest is Jimmy Moore.

Jimmy more catapulted on to the health scene in 2004 after a phenomenal 180-pound weight loss that enabled him to come off of prescription drugs for high cholesterol, high blood pressure, and respiratory problems. He is also the energetic personality behind the uber popular *Livin' La Vida Low Carb* and the host of the longest running and one of the top-rank iTunes health podcasts, *The Livin' La Vida Low Carb Show*.

Jimmy also hosts two other active podcasts, *Keto Talk with Jimmy Moore* and *The Doc and Low Carb Conversations*, along with a retired podcast, you can listen to, *Ask The Low-Carb Experts*. He has interviewed over 1,100 of the world's top health experts and has dedicated his life to helping people get the best information possible about living healthy so they can make the right decisions for their health.

Jimmy is also the international bestselling author of the ketogenic cookbook, *Keto Clarity* and

Cholesterol Clarity, along with the upcoming October 2016 release of the *Complete Guide to Fasting*. You can learn more about Jimmy and his work at [livinglaavidalocarb.com](#).

Jimmy, thank you so much for joining us on the summit.

Jimmy: Hey, hey, Wendy. I'm getting tired just hearing you name all those things.

Wendy: I know. You have a lot of accomplishments, a lot of things going on.

Jimmy: I have been busy, a busy little boy.

Wendy: Yeah. Why don't you tell the listeners a bit about your story and how you got into health?

Jimmy: Yeah. It was 2003 when I weighed over 400 pounds and was, literally, a ticking time bomb, Wendy. I was on a one way track to an early grave at that point at the age of 32. I didn't care about what I put in my mouth. I didn't care about really my health. I had just pretty much just kind of walked through this life eating whatever I wanted, not really understanding the consequences of that action.

That year, though, I had a wakeup call of sorts. I was substitute teaching at a school that year. And one of the boys in the back of the room said, "Man, Mr. Moore, you're really fat." Ouch, how's that for

brutal honesty? But it kind of shook me a little bit because I was like, "Okay, yeah, yeah, you're right, kid."

Now tell me something I don't know, Captain Obvious." That was one thing. And I kept getting in and out of cars and ripping pants. And if you've ever bought big and tall pants, you know that's not a fun or cheap proposition either.

And I had tried so many diets over the years, Wendy, mostly predicated on low-fat healthy whole grains, exercise until you drop, those kinds of things. I watch my momma in the 1980s, she bought in to the low fat lie; hook, line, and sinker. And I watched her eat rice cakes and all this like low fat stuff. And I was like, "Okay, that's how you're supposed to lose weight and get healthy." And yet that's how I would try, but I would always miserably fail.

So when this 2003 came along and all these things started happening to me and it was waking me up, I'm like, "Okay, well, what do I do?" Well, it was fortuitous that for Christmas of 2003, I got a diet book for Christmas. Want to guess who gave me that diet book, Wendy? It was my mother-in-law. So yeah, I love her, she's awesome but, at that time, she was trying desperately to get me to lose weight. She didn't want me to die early on her lovely daughter who I married. And so I was like, "Okay, well is this book you've given me?"

So the book was called, Dr. Atkins' New Diet Revolution. And I had heard about the Atkins Diet and I remember in 1999, I pretty much ate a no-fat diet and did pretty well losing weight on it. I couldn't sustain because I was starving all the time. But I remember people in the midst to that, because Atkins was kind of getting popular then, they said, "Oh, you must be doing that Atkins' diet," and this is no lie, I said, "No, I would never do that diet. It's the worst diet you could possibly be on." Of course, famous last words because was it five or six years later, I would be starting that very diet.

So it was January 1st, 2004 that I decided, "You know what I'm going to give this Atkins Diet a try. It's kind of quacky. All right, you're going to lower your carbs, how are you going to have energy? You're going to raise your fat, aren't you going to clog your arteries and give yourself heart disease?" But I threw all that caution to the wind and just said, "You know what? I've never tried this before. Let's give it a go and see how it does." So January 1st, 2004 was a New Year's resolution to lose weight. It ended up, Wendy, actually turning into a new life resolution to get healthy.

And that's exactly what happened to me in 2004. I was able to lose a pretty substantial amount of weight, 180 pounds. But I would say, the bigger achievement was I got off of not caring about my diet and how it related to my health to tremendously caring about my diet and how it relates to health.

So I was able to be very successful at losing the weight and I caught the attention of the Atkins people, obviously, and they featured my story on the front of their website. And I started getting all these emails, "Hey, where's your book? Where's your blog? Where's your...?" I said, "Will you people leave me alone?"

So 2005, I started – I had a buddy that had a political blog at that time, health blogs weren't really big in 2005, but he said, "Why don't you start a blog?" and I didn't know what a blog was. He said, "Oh, just rant. Just talk. Write your thoughts," and I was, "Oh, I can do all that." And so I started The Livin' La Vida Low-Carb blog in April of 2005 and one year later, this guy said, "You need to do a podcast," and again, "What the heck is a podcast?"

In 2006, not many people are out there. Robb Wolf wasn't even out yet, Sean Croxton, none of the big guys were not even podcasting yet. And so, I was like, "Okay, but I don't know how to do this. I have no training in this." I did a little bit of Christian radio in the '90s. "That was Michael W. Smith. Now, here's Amy Grant." That was about all I did. There was no interviewing like I do now.

So I started The Livin' La Vida Low-Carb Show. And now, as you said in the beginning, it's the longest running health podcast on the Internet, coming up on 1,200 episodes and counting. I'm not stopping that any time soon. I'm having too much fun.

But that's kind of my claim to fame. And then 2012, a major publisher came around and said, "Hey, you want to write some books?" I was like, "Uh, yeah."

So they were like, "What do you want to write about?" and the first thing out of my mouth was "Ketogenic Diets." And they're like, "Oh, that's too niche."

Nobody is going to care about that topic. It's too small, got anything else?" I was like, "Really? I think you're missing the boat on this one, but okay. How about the cholesterol?" "Yes, cholesterol. Write about cholesterol."

So they gave me the contract for *Cholesterol Clarity* and it did pretty well. And then I was like, "Can I please do the keto book?" And they said, "Okay, but we still don't think it's going to do that well," I said, "Well, let's see." So Keto Clarity came out in August of 2014. And in one week, it sold more copies than *Cholesterol Clarity* did the whole first year.

Wendy: Wow.

Jimmy: And needless to say, they quickly became big fans of ketogenic diets and gave me a follow-up cookbook, which became an international best seller. And, yeah, now they've told me I can write as many books as I want for them for the rest of my life. So that's pretty cool.

Wendy: Well, good. So what is all the hype surrounding the ketogenic diet? What is it exactly?

Jimmy: So a ketogenic diet is, in a nutshell, you're just basically trying to fuel your body in a different way. So most people walking around, I'd say 90- something percent of the world's population is walking around as a sugar burner. You're doing it by default when you eat mostly carbohydrate as your source of nutrition.

And that's what the nutritionist and the dieticians and doctors and everybody is telling you to eat: "Most of your nutrition should come from carbohydrates." So healthy whole grains, they say, and all of these other foods that they say are very nourishing for your body. I disagree with them, but that's what they say. And so when you eat mainly carbohydrates as your nutritional intake, then you are a sugar burner.

So what you're doing with the ketogenic diet is you're trying to shift from being a sugar burner, mostly, over to being a fat and

ketone burner. So how do you do that? Well, you got to eliminate the sources of sugar in the diet. And so, the obvious first one is, duh, sugar. You want to cut that way down, if not all the way out. Really, all carbohydrates turn to sugar in the body, so you've got to find what that level of carb tolerance is.

So for somebody like me who's extremely insulin resistant, I can only get away with maybe 25 to 30 grams of carbs in a day and that's it. Otherwise, if I go over that, my body starts producing sugar, which makes it anti-ketogenic. So that's the first big one is cutting down on the carbs to your tolerance level.

The big one that most people told me after they read, Keto Clarity, Wendy, that they said that they didn't realize was causing them problems was the protein. A lot of people, they hear, protein, good. So they say, "Oh, well let's load up on the protein."

They're drinking these protein shakes. They're having a big old chicken breast with broccoli. "Oh, that a great low carb meal." Yes, it is a great low carb meal, but is not a great ketogenic meal because it's too much protein. So why is too much protein a problem? There's this big long G word – there will be a test at the end of the show, just kidding – called gluconeogenesis.

So gluconeogenesis is where the body takes excess protein, in other words, your body only needs just so much protein and then it can't do anything with that protein and then it has to try to store the protein. Well, it doesn't store protein. It has to convert it into something that it can store. And what it converts it to is glucose, which is sugar. So that gluconeogenesis is where the protein goes to the liver and the liver converts it into excess sugar.

So if you're eating 150 grams of

protein and your body only needs, say, 80 grams of protein, all of that extra protein is getting converted over into sugar. So if you're trying to shift over to being a fat and ketone burner, and you're producing sugar because of too much protein, that can be detrimental to you trying to be ketogenic.

So the goal of keto, the goal of that is to simply shift the partitioning of your fuel from being sugar burner to fat burner. There are a lot of benefits that we talked about in Keto Clarity to doing that, not the least of which is mental clarity. A lot of people have moodiness and crankiness and got the brain fog, all of that goes away when you go on a ketogenic diet.

Wendy: I like that you mentioned that excess protein converts into sugar. A lot of people don't realize that, that they're eating these kind of a Paleo -type diet or high fat, low carb. A lot of people eat way much protein, they don't need that much.

Jimmy: You know where that came from? Actually, it was Dr. Atkins. And I love – bless his soul – I love that he put it out there that you need to keep your carbs low. He was dead on about that one. But the mistake that he made and the different between Atkins' Diet and a ketogenic diet is he said, "Eat unlimited fat and protein."

Now, of course, in his mind, he was thinking, "Okay, people will understand fat is going to be very satiating, so you should eat a lot of that, and that you would add in just the appropriate amount of protein," but what he didn't take into account was we have grown up, over these past few decades, in a fat-phobic society.

So when you tell people to eat unlimited fat and protein, what do they turn to? They turn to mostly the protein. And they skimp on

the fat because if low carb is good, some people surmise in their heads that low carb, low fat must be better. And that is the exact wrong way to do this. It's a low carb, moderated protein, high fat diet that will produce adequate amounts of ketones that will fuel your body.

Wendy: Let's talk about some of the health benefits of the ketogenic diet, because there's so much in the research now how the ketogenic diet could be used to help so many different health issues that are plaguing our society.

Jimmy: I think the big one that's not talked about enough and it's actually the one that's used as the "this is why you shouldn't do a low carb, high fat diet" is cardiovascular health. All of the markers on your cardiovascular health, and we talked about this in my 2013 book Cholesterol Clarity, but all of those markers that are relevant in your heart health actually get better.

The main one is the triglycerides. Everybody focuses on LDL, cholesterol, and total cholesterol, because that's what their doctor freaks out about and pushes the medication on them and blah, blah, blah. But what really matters is that triglyceride, and if that triglyceride is under 100, optimally under 70, you're in great shape. I mean, you have no real risk of anything related to cardiovascular health damage that's going to happen.

So that's a biggie that happens when you go on a ketogenic diet. In fact, it's a telltale sign that you've cut your carbs enough. If your triglycerides are over 100, you're eating too many carbs, you got to back them down. Back away from the carbs and nobody gets hurt, that's the first thing.

The other thing that happens when you add in more fat into your diet is your HDL cholesterol also goes

up, which is a good heart health thing. And when your triglyceride to HDL ratio is one or less, which if you have a 70 HDL and a 70 triglyceride, that's 1.0 ratio, that is excellent, which shows that you have a very good, or very low risk of cardiovascular disease.

And then in conjunction with that, you can run some advanced panels, the small LDL particles of your LDL go way down. Your actual inflammation, which can be measured in several ways, but the main way is an hs-CRP, high-sensitivity C-reactive protein, and that one will be under one pretty easily if your triglyceride to HDL ratio is under one, that is one major thing.

You always hear, "Oh, you can't go low carb. And all that fat's going to clog your arteries and give you heart disease." It's just the opposite. It's actually very heart healthy for you to be eating this way. So heart health is one big thing.

People with diabetes and insulin resistance is another big reason. Your blood sugar will get under control. Your insulin more importantly than the blood sugar, blood sugar is just kind of an ancillary measurement. We put too much emphasis on the blood sugar, it actually should be on the insulin. And insulin goes way down as well when you're truly ketogenic.

And that's a huge thing, even for a type 1 diabetic who still needs to take insulin because they're totally insulin dependent and can't make it anymore, but they'll find that they don't have to take as much anymore. And I don't know if you've ever priced insulin, but it's pretty expensive. So that's a huge saving, as well.

Wendy: I know. I used to buy my father's insulin.

Jimmy: So you know. How much did it cost when you had to buy it?

Wendy: Well, all his medications in total that his insurance didn't pay for was \$900 a month.

Jimmy: Whoa.

Wendy: Yeah.

Jimmy: And on a fixed income, probably no doubt.

Wendy: Yeah. And so it's one of those things. You had the whole shebang and the tablets for your high cholesterol, diabetes, high blood pressure, everything. So a lot of meds he was on.

Jimmy: Wow, that's terrible. Unfortunately, it's not atypical. And most people are dealing with that kind of thing, which is why I think a ketogenic diet, at least, should be an option in the toolbox of nutritionists, dieticians, doctors, people that are actually working with patients because this is a powerful modality.

Is it a panacea for everyone? Obviously not, but I think it can provide enough benefits to try it for a period of time to see if it's going to help improve some of these things that, unfortunately, we're putting people on medications for now, when maybe they just need to make a few lifestyle and nutritional changes.

And all of those things that they thought were going to be maintenance drugs they'd have to take for the rest of their lives become irrelevant.

Wendy: Yeah. I want to talk a little bit about some of the signs that you're in ketosis. So you're on the diet, you're eating a high fat, extremely low carb diet. What are some of the signs that show that you're in ketosis?

Jimmy: So the best sign is actually a test. And this is the good news, we live in a great technological age now, Wendy, and there are actually a whole lot of new technologies coming in the coming years in this realm. But right now, there are three different ways to measure for ketones. You want me to go all over those three?

Wendy: Yes, absolutely.

Jimmy: Okay, good. So the first one, a lot of people will be familiar with the keto sticks. Those are the pee sticks, you pee on them and they turn pink to purple. What that's measuring for is a ketone body called acetoacetate. So acetoacetate will show up in the urine when you first start on a ketogenic diet.

So a lot of people get started, the first couple of weeks, they're trying to make that transition over from being a sugar burner to a fat burner, which for most people it tends to take about two to four weeks for that transition to happen. So during that transition, you will see these ketones, the acetoacetate in the urine, spilling over into the urine. And so that's why you show a color change on those keto sticks.

Unfortunately, it's not very reliable after the first couple of weeks of being on ketosis. That's why you need to start measuring in another way. And there's two other ways you can measure. The gold standard is blood. You have to test blood ketones. So the blood ketone is called beta-hydroxybutyrate. And the reason why the blood is so important and the reason why urine doesn't work anymore is the urine ketone, acetoacetate, actually can get converted over into the blood ketone, beta-hydroxybutyrate, very easily after that adaptation period.

So people pee on the stick and they see nothing and they think they're doing something wrong when

they've done something exactly right, which is they've become keto adapted. And that's why testing the blood is so important because you'll see the exact amount of ketones and, in this case, it is the beta-hydroxybutyrate that are in their body.

Now, what you're aiming for on a very, very minimal end is 0.5 on this Precision Xtra monitor, that's the name of the main monitor that you can use here in America. If you have international listeners, it's called FreeStyle Neo overseas. Test for that and you'll see your level of ketosis. I try to stay between 1 and 2, ideally. There's definitely no added benefit to being above 3, for example, but anywhere between 1 and 3 tends to be pretty good.

And so the only downplay to the Precision Xtra monitor, Wendy, is it's so freaking expensive, those strips can be upwards of \$2 to \$4 a piece, which can add up really fast if you're testing like a mad man. I did for a whole year, morning and night and sometimes every hour on the hour, that got very expensive very quickly.

Wendy: Yeah.

Jimmy: So for people that can't do that or don't really want the precision, you just want to know, "Am I burning fat for fuel? Am I really actually in ketosis?" There is a final way that you can test and it's in the breath. The name of the ketone body that's in the breath is called acetone. And right now, there's only one monitor that will test for acetone in the breath and that's called Ketonix, K-E-T-O-N-I-X, go there, dot com and you'll find them. It will measure for the acetone.

Now, acetone does not correlate with beta-hydroxybutyrate, unfortunately, not on a one-to-one basis, but it will tell you if you're producing enough ketones that

show you're burning fat for fuel. So if you want a yes/no answer, you can test with the Ketonix. And that will give you the breath analyzer results. If you want to know precision of, "I want to know am I 1.5? Am I 1.9?" you want that precision, you've got to do Precision Xtra or FreeStyle Neo if you live overseas. And then if you're just starting off, you use the keto sticks to measure for acetoacetate in those first couple of weeks. Wendy: So is that one of the signs that you're on ketosis, is if your breath smells like nail polish, because it's made of acetone?

Jimmy: Well, sometimes you will have a little bit of that in the transition period. And a lot of what that is, that smell, and some people say even their skin smells, I never experienced any of that. Did I ever experience that Kristine? Did you ever smell my skin? No. I'm talking to my wife, Kristine, over there. She said, "No."

But some people have reported all these kind of dastardly things and it can be a sign they transition. But once you're fully keto-adapted, you shouldn't have those side effects anymore.

Wendy: Okay, good. Let's talk about some of the best supplements to enhance ketones or to enhance a ketogenic diet. What are some of your top few that you like?

Jimmy: Oh, my gosh. If you're going to be in a state of nutritional ketosis and you're not cooking with – and I'm just going to start with a real basic one; it's not really a supplement, but it's making sure you get enough of this. If you're not eating adequate amounts of fat in your diet, then you're not going to be able to produce ketones. So this is where butter and coconut oil and lard and full fat, really, any kind of oils like that. Now, obviously, not the vegetable oils and we

can talk about why that's a bad thing. But avocado oil, all of those things, again, while technically not a supplement, they are hugely important to creating adequate amounts of ketones.

Now, there is one fat that you can add as a supplement that will quickly boost your ketone levels. And that's MCT oil. A lot of people know the MCT oil from the bullet-proof coffee, Dave Asprey's big baby. So if you put MCT oil into your coffee, you're going to see a spike in your ketone levels because those medium chain triglycerides, MCTs, easily get converted over into ketones. So that's a big one that you could do.

I would think also, anything that would lower your blood sugar levels, so there is this supplement out there called berberine, which can lower blood sugar, of course cinnamon is well known to lower blood sugar. But anything that would lower blood sugar is going to give you also a boost in your ketone levels as well.

And then one final one that I would mention is there's this new technology out there known as exogenous ketones. So have you seen some of these exogenous ketone products out there?

Wendy: Absolutely. I was going to ask you about some of those. I think some of those people are trying to use those, trying to get cute and trying to get into ketosis by eating ketones, while still consuming carbohydrates...

Jimmy: Yeah, I don't like that. That marketing is horrible.

Wendy: Yeah.

Jimmy: The way I use these exogenous ketones is, if it's somebody that's struggling and there's something going on that

they're eating low carb, they're moderating their protein, they're eating high fat and they're still not seeing the ketones and they want to feel those effects that we talked about earlier, then, yeah, use these exogenous ketones.

And while it doesn't technically put you in a state of nutritional ketosis, it does provide you a boost of ketones, where you will feel it and you'll be able to see the effects. And maybe it's a psychological boost for you to make those changes that would make it happen for you nutritionally.

I do really like the Keto//OS product. I actually have a website for people, that want to learn more about it, called getmoreketones.com, if you want to check that out. But, basically, it's just this powder that you mix with drinks. Some people mix it with LaCroix, the flavored water, or just plain water. And you drink it. And I've actually tested my ketones, both before and after. When my ketones are kind of low, let's say 0.3 or 0.4, and I drink that, about an hour later, it'll be 0.8. So you're in that level of nutritional ketosis at that point, so you feel those effects.

What I did find, Wendy, though, is that at higher levels, if I started at 1.5, it only goes to maybe 1.7. So if you're already producing ketones well, doing it nutritionally, then you're probably not going to get as much of a benefit from these exogenous ketones as if you were on the cusp of it on the lower end. So it seems that the returns of it are only good if you're not already doing it nutritionally.

Wendy: What do you think about the supplement, KetoForce?

Jimmy: Honestly, I have not tried it. Those people haven't reached out to me, so I don't know anything about that.

Wendy: Okay. Are there any other products that you like that you would recommend to help enhance a ketogenic diet?

Jimmy: There are so many companies coming out with varying products that are out there. I'm thinking about the low carb Adapt bars, those are over from South Africa. It's actually the first ketogenic bar that's come out. So it's pretty good. It's very high in fat, only two grams of total carbs. So yeah, that's one that comes to mind. You're going to get me in trouble because I have a lot of companies that are out there doing stuff.

There's another one, dropanfbomb.com is the name of the website – yeah, it's a cute name, and they sell these FBOMB. And basically, they sell MCT oil, macadamia nut oil, coconut oil and it's like little pouches that you can bring with you to make sure that you have ample amounts of fat, especially like on an airplane. A lot of airplane stuff has nothing you can eat, and it's typically very low in fat. So you drop and FBOMB on it and at least gives you some healthy fat on there.

Pretty much anything that would be low in carbohydrate, high in fat is going to fit the bill. And I encourage people to try to stick to real foods as much as possible, realize that there will be some shyster companies out there, not the least of which is the Atkins Nutritionals Company. Please don't ever buy anything from them. They don't care about low carb, high fat.

And I actually cornered their marketing person on this at a conference earlier this year. And I asked her on a panel, why they were promoting such crap products? And she's like, "Well, our consumer base wants high fiber, high protein." And I'm like,

"Well, okay, that's great, but that's not Atkins, that's not low carb, high fat." And she's like, "Well, we got to sell what the consumer wants." And I was like, "Okay, that's disappointing." It's all on video.

Wendy: Yeah. I looked at their bars, I looked at them in the grocery store the other day and they have grains in them.

Jimmy: Yes.

Wendy: What? That's not...

Jimmy: And all kinds of fillers and all kinds of sweeteners. It's sad that a company like that...And, of course, Dr. Atkins sold the company many, many years ago, long before his death. And yeah, it's sad what has happened.

But that's why the consumer has to be smart about this stuff. Don't just see that something has Paleo on the front of it or keto on the front of it or low carb or Atkins on the front of the packaging and just believe it inherently. Read. Do what Wendy did. Turn it over on the back and look at those ingredients always first and then look over at the nutritional label. And, yeah, your eyes will be opened.

Wendy: Yes. You can be a very, very smart consumer.

Jimmy: Always.

Wendy: And that leads into my next question, are there any other supplements that you think that should be avoided?

Jimmy: I mean, the supplement to what you need. I think sometimes people think, "Well, I just need to supplement everything." I would say, try to supplement your diet by eating real food. And if you're eating enough real food and getting enough variety from a lot of sources, you may not need to take

as many supplements as you think you do.

And I think it's a shame that we have gotten to the point where we think taking a synthetic vitamin in a pill form is a lot better than consuming green leafy vegetables or consuming some kind of awful, like liver. All of these things are going to be healthier for you in the real food form than they ever will be in the synthetic form. So as far as what you shouldn't take, if you're eating real food, you shouldn't have to take too many vitamins anyway.

Wendy: Yes. And so I was going to ask you about a questionable supplement that's very, very popular called the Raspberry Ketones.

Jimmy: Oh, don't get me started on Raspberry Ketones.

Wendy: Well, yeah, please get started. Tell me what your thoughts are because that is a big selling supplement. And I think because it has the word "ketones" in it, it misleads people to think that's going to enhance ketones perhaps or enhance weight loss.

Jimmy: And ironically, it has absolutely zero to do with nutritional ketosis, zero to do with boosting your ketones. Yeah, this actually came to popularity because Dr. Oz, good old Dr. Mehmet Oz, talked about it on his show one time. And it just took off.

And I'm going, "What in the world is he doing here?" It's a weird product because they use ketones in it. Most people, when that came out, they didn't have any clue what ketones are. There's actually no ketones in the product. So I don't know how they call it Raspberry Ketones, it's just a gimmick in my opinion.

I don't see any inherent benefit.

And definitely, if you're trying to be on nutritional ketosis, some of those supplements, the Raspberry ketone supplements actually have sugar in them, so it's actually going to be very anti-ketogenic. So yeah, steer clear of that. Again, it's one of those things, the media hype doesn't match what it could actually do for you from a health perspective.

Wendy: Is there anything else you want to add to our conversation about the ketogenic diet, the benefits, supplements, et cetera?

Jimmy: Yeah. I mean, it's one of those things that if you've never tried it before, it's definitely a modality that can't hurt you. We're just talking about real food here. And if people want to start a ketogenic diet and don't really know how to, I actually put in Keto Clarity an acronym for KETO, that will help you get started and help you remember the principles that will help you do well on this.

So KETO, K is keep carbs low. E is eat more fat. T is test ketones often. And then the O is overdoing protein is bad. So if you follow those four principles, K-E-T-O, and want to start it, give it about two to four weeks to work for you, test and see how you're doing, and you'll be surprised.

I think the first thing that most people, definitely shifting from the standard American diet, but even from a Paleo-style diet of you want to try to lighten it up and be keto, the first thing you'll notice is your hunger and your cravings will just almost disappear. You'll have no cravings, no hunger. It's amazing how quickly that happens, especially if you're getting that adequate amount of fat.

And then being able to just have the mental clarity and all those brain health benefits. If for no

other reason, then the brain health benefits, Wendy, doing ketosis, that's why I would do it. That would be the reason I would do it. Even if I got no other benefits at all, all of the brain health benefits, it just makes it so worth it.

Wendy: Oh, and it's supposed to help Alzheimer's and dementia and these...

Jimmy: Oh, yeah, Parkinson's.

Wendy: ...devastating diseases because they are, in part, metabolic disorders.

Jimmy: Yes. Traumatic brain injury, I know Robb Wolf has talked about that quite a bit with ketogenic diets being helped with. Because the brain, quite frankly, thrives on ketones. A lot of people don't realize it, but the brain is 70% fat. So if you're depriving your body of fat and you're making it a sugar burner, that sugar burning actually is very detrimental to your brain. Whereas if you are a fat burner, it's a lot cleaner burning fuel for your brain, which is why the ketones thrive.

It's why also, within the context of cancer treatment, ketogenic diets are starting to be looked at a lot closer, as well. The theory is that you're starving the cancer cell of the very fuel that it can use very well and will grow the tumor and that's the sugar, whereas the ketones don't grow the cancer and the cancer dies off and yet you get fueled and energized.

Wendy: Yeah. And that's such an incredible benefit because I think a lot of people don't realize that a lot of cancers are fueled by insulin, not by sugar so much but by the insulin as a result of high blood sugar. Can you talk a bit more about that because cancer is devastating so many families. My father died of cancer and the statistics are just

through the roof and ketogenic diet is a big part of the answer to preventing cancer.

Jimmy: Oh, my gosh, all of these tumors are what's called glucose dependent. So if you're feeding your body sugar and, again, when I say sugar, I don't just mean the white table sugar, I'm talking about anything that would turn to sugar. So that includes the carbohydrates that turn to sugar, that includes that gluconeogenesis with the protein as well, which is why a lot of these researchers, people like Dr. Tom Seyfried, out of Boston College, they're talking about the 90% fat diet and then the carbohydrate and protein combined is about 10%. Again, this is for therapeutic use against cancer.

So this isn't for the faint of heart. This is a lot more intense than even what I do, because I'm not having to do it for that purpose. It's pretty intense, but you know what, they're seeing results. They're seeing results with epilepsy the same way. There's this organization called The Charlie Foundation that has been out there for many years and promoting a very high fat, similar to the 90%-10% I just explained.

This is something you don't play around with. Dominic D'Agostino down in South Florida is doing a lot of research into this. And like I said, Dr. Tom Seyfried is also – and both of those guys were experts in Keto Clarity.

Wendy: I've read a lot, over the past weeks, of Dominic D'Agostino and he is doing absolutely amazing work. Can you talk about a little bit about – isn't he doing research about how the ketogenic diet helps with seizures and other things like that?

Jimmy: He's doing so much research right now, Wendy, I'm not sure about the seizure research.

I know he's done a lot with the exogenous ketones that we talked about earlier. He was the first one to pretty much put that on the map for me. He's also worked a lot with the Navy Seals in trying to enhance their performance on the field.

He's done the cancer stuff. I'm not real familiar if he's doing seizure research, but that wouldn't surprise me. Yeah, he's definitely one to watch. Dom D'Agostino is his name, and you're going to hear a lot more from him in the coming years.

Wendy: I read that, too, that he was helping with the Navy Seals. I thought was really, really interesting.

Jimmy: Yep, yep.

Wendy: Because a lot of high performance athletes, also, like Ben Greenfield and other people, they're all also reaching a state of high performance by burning fat for fuel on a ketogenic diet.

Jimmy: This is kind of a big, big area that not a lot of people are talking about yet, but I think is the future of keto. It started off as, "Oh, that's a nice way to lose weight." And then some people started talking about, "Oh, okay, well, it can enhance your health."

But now we're getting into the athletic aspect. I mean, we have some pretty major names in professional sports that have at least attempted to lower their carbohydrates and eat more fat. I'm thinking very famously, LeBron James did it a few years back during a summer time and just vastly improved his weight and health at the time. And dude's a stud. I mean, he's already in good conditioning. And yet he saw the value in that.

And a lot of some of these older athletes, I know Kobe Bryant before he retired, he went full on keto

and was able to extend his career few more years before he blew out his knee. And so we're seeing that. And Dr. Jeff Volek up at Ohio State University is actually doing a lot of this kind research on these athletes.

I see athletic performance with ketogenic diets kind of being the next ground for pushing this forward. We've seen the weight loss push, we've seen the health push, but the next one is going to be improving performance. And I think, secretly, Wendy, there's a lot of professional athletes, maybe even some of those Olympic athletes at the Olympics, that are using this way of eating, burning fat for fuel to make themselves better athletes.

Wendy: Yeah. It makes complete sense. It makes your brain work better. Your body can run on either carbohydrates or fat, so...

Jimmy: Oh, and can I give you a statistic?

Wendy: Yeah.

Jimmy: Guess how many calories worth of energy you have if you're a sugar burner and you're carb loading before a race, how many calories worth of energy can you store if it's sugar? You probably know the answer, because you've heard my talks before but it's 2,000. So you have 2,000 calories before you have to refill. Which is why when you see these runners, they're having to constantly put goos in their mouth and all these stuff. They have to refuel so often.

But if you are a fat and ketone burner, you've made that switch over from sugar burner to fat burner, guess how many calories worth of energy that you have at your disposal? It's not 2,000. It's not 10,000. It's not even 20,000. It's over 40,000 calories worth of energy,

which if you are running a race and you need some fuel in the tank, guess what? 40,000 is greater than 2,000, all day every day.

Wendy: Oh, yeah. Just say no to goo.

Jimmy: Just say no to the goo.

Wendy: Yeah, I used to be a big walker. I've done these like ultra walks. And I would see the goo at the store to enhance performance. That's not happening. I don't care how much energy it gives me.

Jimmy: And never mind what it does to your stomach. I've heard it from enough athletes I've interviewed on The Livin' La Vida Low-Carb Show that used to do that. And then they switched over to, say, macadamia nut butter and they'll do that in the middle of a race, maybe a little bit of MCT mixed in with it. And, yeah, it's so much better a fuel source than this synthetic sugar that all it's doing is just spiking your glucose.

Wendy: Yeah, I'll take an FBOMB over some goo any day.

Jimmy: Drop an FBOMB.

Wendy: Well, Jimmy, thank you so much. Is there anything else that you want to add to our conversation or you can just tell us where listeners can learn more about you and more about ketogenic diet?

Jimmy: Yeah. So, I'm not hard to find. If you Google my name, Jimmy Moore, actually like the first page and a half, two pages, of Google is literally all of my stuff. But livinlavidalowcarb.com is my main website. It should have all my podcasts and books and everything listed right there.

I'm working on a new book coming out later this year that's sort of related to ketogenic diets and it's

called *The Complete Guide to Fasting*. And so it's going to be another way that people can boost their health. And, obviously, if you're not eating food, you're going to be producing ketones. This is kind of a dirty little secret that even the vegans don't talk about a lot, is when you don't eat, guess how your body is subsisting? It's ketones.

Even if it's low levels of ketones, an overnight fast, if you stopped eating at 6 o'clock and then you don't eat until 8 o'clock the next morning, you're burning some ketones in your body. So, if you think ketosis is dangerous, sorry, you're going to have to stop sleeping, because you're producing ketones overnight.

Wendy: Well, fasting is really, really popular, intermittent fasting. Why don't you talk a little bit about – and it's something a lot of people can do to get their body producing more ketones and burning fat and improving their health overall. Why don't you give us a few pointers about fasting, something the listeners can start today to start improving their health?

Jimmy: I think the main thing... And my co-author on that is Dr. Jason Fung, he's a nephrologist out of Toronto, Ontario. And he's put over a thousand patients on some kind of a fasting protocol, be it an intermittent fast, like you described, maybe the 12- to 24-hour fast; maybe an alternate day fast, where you kind of eat on Monday, don't eat Tuesday, eat on Wednesday, so forth and so on. And then even some of these longer fasts.

So I attempted a long fast recon work for the book. I said, "You know, I'm going to do a long fast," I set out to do 21 days, back in September last years. I only made it 17 and a half, but 17 and a half was pretty good, considering the longest I've ever gone before then was seven. And then in January this

year, I did another one that was 28 out of the 31 days in the month of January. Again, doing it just to see what would happen.

So tips for fasting is just don't over think it. If you want to try to see how you would feel in a fasted state, just try skipping lunch. So if right now you're eating breakfast, snack, lunch, snack, dinner snack. Knock out all the snacks. Knock out the lunch meal. Eat a little more at breakfast, maybe slightly more at the second meal of the day. And you'll find you probably do okay. And some people, just with that small little tweak, will see tremendous benefits, Wendy.

So that's one thing. And then another thing is just on occasion, try not eating for three days. Now, it's going to be hard. If you're ketogenic, the first day should be super easy because you're used to being able fast very easily anyway.

Day two is the day when it's going to be very hard. Day two is when, "Okay, I'm going to need some bone broth." So yeah, on this fast, don't think it's just water. Some people do water-only fast. You can actually get away with having some bone broth with some sea salt to help with the electrolytes. I also add in a little bit of Kombucha, as well. But the total calories are well under 200 calories. Technically not a fast, but for the sake of what Dr. Fung is doing with his patients, he said, "You're still going to get the benefits that you want from a fast."

So be willing to do those things to kind of get through the fast. And you'll see the benefits. I'm still kind of actively kind of implementing it and using this in my own life to try to tweak some things in my health. And it's amazing how quickly all of these things change over of you just give it a try.

I think a lot of our misconceptions,

the myths that are in our heads, "Oh, I'm going to be wasting muscle. And it's all water weight that you'll lose. You'll gain all of the weight back," a lot of these things we are addressing very heavily on the book. And they're just not true.

Wendy: Yeah, I mean, when you stop spending all those energy digesting food, which takes a tremendous amount of energy, fat energy can then be spent cleaning up your body and auto feeds you where your body is cleaning up dead cell debris and reducing inflammation.

So I try to do one day every a couple of weeks where I don't eat for 24 hours. And I can tell the inflammation of my body goes down dramatically, because I have a bulging disk. And so it gets inflamed periodically. And so the fasting really helps me. I think it's great for people with pain and inflammation to do that.

Jimmy: And I used to be the biggest antagonist to people that would talk about fasting. When I first heard about it, I was like, "Really? You're not going to eat? What?" And so it seems so weird to me and, in the book, I actually tell my story about how I've come around on this.

But you know what it was, I interviewed Tom Seyfried, the cancer researcher we talked about earlier. I interviewed him way back, I think like 2009 on The Livin' La Vida Low-Carb Show. And in our interview, he threw something in at the end. He said, "Yeah, if you want

to prevent cancer, try fasting one week out of every year."

And I thought, "Well that's kind of interesting," one week out of every year, a week fast to prevent cancer? That doesn't seem that difficult. And so I did it. That was the one week that I tried and he actually put it in his book, All About Cancer, where I had tried this. And it's amazing, if you just give it a go and you get past that couple of days where it can be a little rough.

It is amazing how quickly your body says, "Okay, I'm all right." It freaks you out the first couple of days, but then by day three, four, five, six, seven, you're like, "This isn't hard. Why did I fret about this?" And yet most people, they don't get to that point because they don't like the pain at the beginning.

Wendy: Yeah, until you get over that hump.

Jimmy: Get over the hump. Even with like the ketogenic diet, you're going to have a little bit of pain in the beginning. Although we can't talk about some of the things. The biggest pain, the keto flu, so-called "keto flu" that a lot of people deal with, it's mainly an electrolyte imbalance. So if you drink a lot of water, because you will lose water when you first start keto; if you eat more salt, yes, don't fear salt, you need salt, get that salt in your body; get some potassium from, say, an avocado a day; and then get magnesium to help you sleep at night.

You do those four things, you're going to ward off a lot of that pain that's usually associated with a ketogenic diet. And it will make it so much easier once you become keto-adapted.

Wendy: Well, Jimmy, thank you so much for your contribution. I am a big fan of the ketogenic diet and fasting also. And I really encourage the listeners to at least attempt doing a ketogenic diet, or definitely reducing their carbohydrates, the very least.

Jimmy: There's no downside.

Wendy: Everyone, thank you again for joining the Medicinal Supplements Summit. The ketogenic diet has so much research supporting an array of health benefits including cancer disease treatment and prevention. A diet 100% worth to try, especially if you suffer from weight issues, metabolic syndrome, diabetes, seizures, and many other health conditions that we have talked about today. And the ketogenic diet is shown to dramatically improve them.

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The Top 7 Benefits of a Ketogenic Lifestyle

Gez Agolli, MD, DrPH, ND with David Jockers, DNM, DC, MS

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Dr. Agolli: Welcome to the Keto Edge Summit, where we are dispelling the myths and empowering you, overcoming hurdles, and helping you get your brain and your body by utilizing the ketogenic lifestyle and improving your overall health. Joining with me today is Dr. David Jockers who started the Keto Edge Summit. I'm Dr. Gez Agolli. I'll be interviewing him.

David, I want to welcome you to the Keto Edge Summit. It was your vision.

Dr. Jockers: Yeah.

Dr. Agolli: Your passion. We came together as a team. We supported each other. And this is a little bit different because today I'm going to be interviewing you.

Dr. Jockers: That's right.

Dr. Agolli: By the way, you've done an amazing job...

Dr. Jockers: Thank you.

Dr. Agolli: Interviewing all of these great speakers. What a powerhouse. If you're listening to us for the first time and you're getting excited about this, this is just an amazing opportunity for you to learn, to galvanize into action, and to really take the information

and take it to the next level. So we want to welcome you guys for joining us.

So Dr. David, I want to just get right into tell us your story personally how you got into natural health.

Dr. Jockers: Yeah.

Dr. Agolli: I know that you've got a great story, and I want you to share it with our listeners.

Dr. Jockers: Yeah. Number one, guys, I'm super excited to now be interviewed after doing all these other interviews. My story is this is really growing up my mom was a naturopath. I was into health. I was living a healthier lifestyle than most people I knew. And I was a personal trainer and I developed irritable bowel syndrome to where I was eating all this food, 5000-6000 calories that I thought I had to eat in order to maintain my muscle mass. And all of a sudden, the muscle mass started going away. I started losing weight quickly. In about a four-month period of time, I dropped 30 pounds. And I went from being about 170 pounds down to roughly at 135 at my lowest weight. And I would have orthostatic hypotension where I'd go from sitting to standing and I would have to hold onto something. So I realized, my goodness, there's a lot wrong with what's going on in my health.

And a chiropractor actually helped me by correcting my spine, working

on my spine, started shifting my nutrition. I read a book called The Maker's Diet that my chiropractor had turned me on to, written by a friend of ours, Jordan Rubin. And I read that book, started applying those principles and was able to regain my health.

So then I went into graduate school, super excited. I wanted to own my own health clinic and really just have a huge focus on community wellness and change as many lives as I could. So I opened my clinic Exodus Health Center right outside of Atlanta in 2009, right after I graduated from graduate school. And I actually lived in my clinic and I was working 80-hour weeks.

You know how it is when you're a young entrepreneur. I was single. All I did was work seven days a week pretty much from the time I woke up to the time I went to bed. And I had a lot of success from the world's standards. I had a successful clinic. But when you're imbalanced like that, it's going to affect your health. And for me, I ended up developing a skin cancer, a big nodule on the side of my nose.

And I was looking at it in the mirror every single day. And really, cancer... And I know you lost your father to cancer. I lost my grandfather. He was really the first person that I ever saw actually suffer and die from a chronic disease that was close to me in my life. He died from metastatic skin

cancer. So it was a skin cancer that killed him.

I grew up in Florida, on the beach, surfing and being in the sun a lot. So I've been sunburned more than somebody should be in the course of their life. So I had all these risk factors. And I just looked—I was looking at myself in the mirror. I was seeing this nodule. I thought it was acne. I was hoping it was just acne, it would go away on its own. And I realized as it continued to get worse that it wasn't, that it was something a lot more serious.

And I just took inventory of my life. And I realized that I was out of balance. I was overworking. I wasn't taking good care of my health and started making really a lot of shifts and changes in my mental outlook, my spiritual life, removing toxins. And one of the key things that I found was this ketogenic lifestyle.

And I realized that when I healed my irritable bowel I had gone really low carb for a period of time there. And I was able to—so I took out the carbohydrates. I started implementing things like intermittent fasting. And that really helped me heal my gut. So I said, "You know what? I'm going to really, really lock in and go back to that." And that's what I did and really in a matter of about four months, that nodule withered away and I was able to basically just be healthy and strong. My energy went through the roof. My brain function.

And it was a sign for me from God that our body can heal itself, and I had seen that now twice with two debilitating conditions really being healed naturally through this ketogenic lifestyle.

Dr. Agolli: I think it's a powerful story, David. I love what you said about balance. And what's interesting is that most Americans don't have balance. It's something

in medicine we call homeostasis where everything's in balance internally regardless of external factors. The body can do that. But obviously, you weren't in balance at that time with your blood pressure, orthostatic blood pressure going up and down and probably weakened adrenals.

What I love about your story is you've lived it and now you can transform what happened to you to others, and so it's powerful. And in my 25+ year career, I found that some of the best physicians—patient, heal thyself—is a doctor who actually experienced and can relate to you. Not necessarily you have to get sick to be a good doctor, but my point is your belief system transforms in the way you communicate. So what a great story, David. And I'm not glad that you got sick like that, but that was a wake-up call for you.

Dr. Jockers: Yes.

Dr. Agolli: And that was a wake-up call, and that started you on your journey. So tell me, when did you first learn about the ketogenic diet and the benefits it offers to others and really the science behind it?

Dr. Jockers: Yeah. For me, I really started when I had my irritable bowel issue. I realized when I stayed away from food, when I just focused on hydration, basically when I fasted, nobody was talking about fasting back then. This was 2004, 2005. I didn't read anything about fasting. I just started realizing that when I stopped eating, when I would drink, I would drink a ton of water, and I would eat my meals between 3 pm and 7 pm at night that I felt amazing, and I started to heal faster.

When I ate breakfast in the morning, I felt crummy all day long. My digestion was off. I just felt inflamed all day long. So for

me, it was self-experimentation at first. And then, really, the research started coming. The research was out there, but it started coming into more the mainstream or it started becoming more available for researchers like myself really around 2011-2012. And that was right after I had kind of overcome my own health condition with the skin cancer that I started actually finding real literature out there on this and realized, wow, there's a term for this kind of low-carb, fasting lifestyle that I've been applying and it's called the ketogenic lifestyle.

And so, I started really diving into that in more detail and writing articles. Created my website DrJockers.com which is really one of the most trafficked websites with information pertaining to the ketogenic lifestyle. And I've just been really immersed in studying this in more detail since then and working with patients all around the world, helping them adopt this ketogenic lifestyle.

Dr. Agolli: Well, that's powerful how you've done the research because there's a lot of research out there. And for those of you who are joining us for the Keto Edge Summit, there's so much research. And this is one of the reasons why Dr. Jockers and myself want to put this out there is to bring the science because there's science involved. So I want to get into the term you just said right now: ketogenic lifestyle. What other components are there besides just a diet?

Dr. Jockers: Yeah, absolutely. So when you look at a ketogenic lifestyle, number one, we talk about ketones. And everybody thinks about the ketogenic diet, and the diet is important because we've got to make sure we've got really the right nutrients, the right fatty acids in there, to some degree the right macronutrients, so we're eating a

lot of high fat, moderate protein—not a high protein diet—low-carb diet. That's extremely important.

But really, when we adopt the whole lifestyle, the lifestyle incorporates things like intermittent fasting. And when we have elevated ketones in our blood stream and we're using those for energy, we're going to have more satiety and less hunger and cravings. And that's really one of the great benefits of this is that our desire to eat all the time, every several hours, goes down significantly.

So you're able to go long periods of time without food, and that's just a natural part of the ketogenic lifestyle. Eating itself produces inflammation. Eating is an inflammatory thing. We have to eat, obviously, to live, but it produces inflammation. So by withdrawing from food, by doing things like intermittent fasting and taking time between meals, we actually down-regulate inflammatory pathways in our body which is super key. So incorporating the fasting.

Also, hydration and getting the right amount of electrolytes. In our brain and our hypothalamus, which is like the antenna of our brain, our hunger center and our thirst center are right next to each other. When we eat food, food has a dopamine effect, a dopamine-stimulating effect kind of like cocaine does.

Meaning that, naturally we feel high. We feel great when we're eating food. And this is a natural advantage to us. It kind of makes us have this drive and this desire to eat which keeps the human species alive.

So we get a high, a natural high, when we consume food. We don't get quite that same high when we drink water. So today's day and age, we have pantries. We can literally get this dopamine high by

eating all day long, just continually stimulate this pathway all day long and we forget about drinking. So what happens is the brain has this principle where if you don't use it, you lose it. So there's this component of neuroplasticity where the brain cells will start to change and shift. And so that hunger center starts to grow into the thirst center.

So when your body really wants water and electrolytes, salts, you experience it as "I'm hungry. I want that Danish over there. I want that soda or whatever it is, that fruit drink that's right there because I need that because my brain is telling me that." So with a ketogenic lifestyle, it tells us, hey, let's really focus on hydration which is super key because I always tell my clients we don't eat for energy. You drink and take in electrolytes like salts for energy.

Water and electrolytes is what conducts electrical current throughout our body. That's what really allows us to feel great energy. When we have a lot of energy, it's really good neural conductivity that's taking place in our body; whereas we eat for adaptation and recovery. So it's important to understand that. We want to eat to adapt and recover from the stress of the day so we can rebuild new, healthy cells but not to stimulate energy.

So when we're drinking, getting electrolytes in, that's when we're going to notice we have better energy. And so, just hydrating really well, exercising, moving our body. We were made to move. We want to have really high-energy thought patterns. If we're stuck in stress and fight-or-flight and we're not grateful for our life, that's going to throw off our blood sugar. If we're thinking in a low-level way, if we're bitter, if we have unforgiveness in our hearts, those things stimulate fight-or-flight.

So whether you know it or not, your body thinks you're in a survival mechanism. When you're in a survival mechanism, it's going to elevate your blood glucose. It's going to cause more inflammation in your body, throw off your adrenals. So a lot of it has to do with the way that we think. So thinking right, being in a state of gratitude, and really expressing love and generosity is super critical to the ketogenic lifestyle.

So we want to kind of incorporate that mind/body/spirit approach to taking care of our body because you and I both agree, [inaudible], our body is really the temple to the spirit that God put within. So the ketogenic lifestyle and the way that we use that term really embodies this mind/body/spirit approach.

Dr. Agolli: That's such a great comment, Dr. David, because I love the fact that you mentioned the hypothalamus which is basically the part of the central nervous system, it creates a feedback mechanism. The best example I give that is it's like having your temperature and your thermostat and if you want it to be a certain temperature and if it's not, it kicks in. And that's what the hypothalamus does. It sends these messages in the body which is great because it does control our hunger and our thirst and you mentioned satiety which is so important in our society of gluttony right now.

The question is, are we living to eat or are we eating to live? And it's really important to understand the difference there. There's individuals out there that just live to eat.

Dr. Jockers: Yeah.

Dr. Agolli: And that's where your approach...

Dr. Jockers: Yeah, it's like a drug addict.

Dr. Agolli: It's totally a drug addict.

Dr. Jockers: Constantly stimulating that dopamine.

Dr. Agolli: And the fact that you talked about that neurotransmitter which is a huge problem—dopamine—in our society. And this is a lot of these drug addictions happen right now. So you're right about the food. Let's talk about some of the top research. Give me like the seven top research on the benefits that you've seen scientifically on the ketogenic lifestyle.

Dr. Jockers: Absolutely. I love this. Personally, I love taking time to just look at research. And when you look at the ketogenic diet, number one thing is fat-burning. So when we look at fat-burning, really this is the definition of what a ketogenic diet does because you can produce ketones when your blood sugar goes down and your insulin... Insulin is basically this hormone that comes out, takes sugar out of the blood stream, puts it into the cells, tells the cell to use sugar as energy and to store fat.

When insulin goes down, because we're on this low-carbohydrate, high-fat, moderate-protein diet, now what happens is your body, your liver starts to take fatty acids. And that could be fat from food we eat like avocado or coconut oil or it could be body fat. So it takes your own body fat and brings it to the liver, metabolizes it, brings these triglycerides to the liver. The liver converts them from a fat-soluble compound into a water-soluble compound that crosses the cell membrane, gets into the mitochondria, and your body uses it for energy.

When people are really overweight, they have a lot of energy reserves, but they're not energy-efficient. Their body does not know how to

use the stored body fat. So we want to teach the body to use stored body fat for fuel. Like me, I'm 8-10% body fat. I'm really lean, but I could survive for days, for weeks, on the amount of body fat that I do have, believe it or not. And so, we want to be really good at utilizing that body fat for energy. That's the number-one thing that is well-researched in the ketogenic world, is using fat for fuel.

Now, the second thing actually works with this because a lot of people are like, "Well, I don't really want to lose weight. So is the ketogenic diet right for me?" So if somebody's looking to lose weight, the ketogenic diet is absolutely amazing, and most people know it for that. But if you don't want to lose weight, like myself. I don't want to lose weight. I want to maintain my muscle mass. I work hard for that. I want to keep it. Is the ketogenic lifestyle right for me?

Well, here's the thing. When your body is using these ketones as an energy source, you actually elevate blood leucine. And leucine is this branch chain amino acid that tells the body to maintain muscle mass, maintain lean body tissue. So it'll help you preserve your muscle tissue and your bone tissue. Most people that are real lean, their body is very catabolic, meaning that it's constantly breaking down protein and breaking down muscle mass and breaking down bone tissue as well in order to elevate blood glucose, in order to elevate blood sugar.

When we get that blood sugar stable, get that insulin down, and produce the ketones, blood leucine goes up, now we're able to maintain that lean body tissue. So you're really able to take on your ideal physique. You're going to notice that you're stronger, that you perform more effectively. It's going to help preserve your bone

mass. So if you're out there, you're concerned about osteomalacia or osteoporosis, one of the best ways to help prevent that is elevating up those blood ketone levels. So that's the number-two benefit.

Number three, let's talk about energy. So basically, what we know is that ketones are very energy efficient fuel sources. And so, the other big thing is when we are producing ketones, when we're keto-adapted, a big thing that happens is we become—we actually have a process called mitochondrial biogenesis that takes place. And the mitochondria within every cell, basically, they are a little factory that's constantly producing energy.

So with a ketogenic diet, we actually increase the amount of mitochondria. In rat studies, it's been shown to increase between 50-60% in somebody who's keto-adapted compared to somebody's who's not. 50-60% increase in mitochondria, that's a huge increase. So our body's going to be much more effective at producing energy levels. What does that mean to you? That means you just have more energy throughout the day. You have less fatigue. You're not feeling rundown. You're going to be more resilient to the stress that you're under. That's what it means to you. So that's number three.

Number four is brain. Lots of research on brain. You and I both know the original research done on the ketogenic diet had to do with epilepsy.

Dr. Agolli: Yes.

Dr. Jockers: It started coming out and what they found was that it was remarkable at how the ketogenic diet, when these epileptic kids went on a long-term ketogenic diet, the reduction in these debilitating seizures and the success that they had with that. In fact, research has

shown that 50% of epileptic kids see a significant reduction in the frequency and the intensity of their seizures after being on a ketogenic diet for six months. So with that, so 50%. And then, after being on it for two years, it's a 90% reduction. So the longer that they get keto-adapted.

Dr. Agolli: That's great research. That's just amazing.

Dr. Jockers: It's incredible.

Dr. Agolli: It's incredible research for the brain function.

Dr. Jockers: Yeah. And that's significantly better than any medication that's out there for seizures.

Dr. Agolli: By far.

Dr. Jockers: There's no medication out there.

Dr. Agolli: By far. There's no medication that can even touch that.

Dr. Jockers: And medications have tons of side effects. So it's unbelievable the research on that. Now, let's talk about other brain conditions because we've got that research on epilepsy, so we should be trying to extrapolate that and think, Ok, how can it also affect other areas of our brain? And what we know is that basically the brain is the most mitochondrial-dense tissue in our body.

So when we're keto-adapted, again, we're producing more mitochondria. So better energy. Also, the ketogenic diet—recent research shown in 2017 here. Research out of Nature Communications actually showed that it down-regulates—when you're keto-adapted it down-regulates what's called the neuro-inflammasome which is kind of

this group of proteins that triggers inflammation in the brain.

So what does it do? Downregulates that which downregulates—this is part of the innate immune system. So you've got things like interleukin-1 beta, tumor necrosis factor alpha. These are pathways that scientists and pharmaceutical researchers are working on a ton of different medications that are very expensive medications in order to downregulate these inflammatory pathways.

Dr. Agolli: I'll also make a comment on that.

Dr. Jockers: Yeah.

Dr. Agolli: That's a powerful statement you made. And a lot of these pharmaceutical companies, they're doing the best they can, but they only have one pathway. And what we find with the keto lifestyle, especially when we're talking about the brain, it is all about inflammation. And you used that word "innate." It's basically your immune system doesn't have a memory. It's just going, going, going, and it's causing the degradation. And we're seeing a lot of these brain cells just dying off. And now we're seeing an all-time high where we're seeing dementia and Alzheimer's. And now we're calling Alzheimer's type 3 diabetes.

Dr. Jockers: Type 3 diabetes.

Dr. Agolli: So this is powerful information that you're bringing along. Could you imagine a medication that had multiple pathways? You're just not going to see it. So I think it's really important that we continue this dialogue, Dr. David, because it's powerful. Because without proper brain function, the body doesn't function as well, and we don't have that healthy, long lifestyle and the functionality.

Dr. Jockers: Yeah.

Dr. Agolli: So we have to do a better job in our society, talking about these issues on brain function. And now we're seeing the Baby Boomers are really, really scared because they were taking care of their family, and now they know they're next.

Dr. Jockers: Yeah.

Dr. Agolli: This, adapting to this ketogenic lifestyle can make probably the biggest impact with brain function.

Dr. Jockers: Yeah, it's so huge. That last study I was just mentioning actually is out of Scientific Review. And that was again—no, it was August of 2017.

This other research I was just looking at yesterday, September of 2017. This was in Nature Communication. And there's this inflammatory pathway called nuclear factor-kappa beta. So basically, when we're producing a lot of energy through glycolysis, through burning sugar, it will increase activity in this nuclear factor-kappa beta inflammatory pathway.

So by being keto-adapted, we actually downregulate that nuclear factor-kappa beta pathway which is one of the most potent inflammatory mediators. So it's so critical when we see research like that that we then start to look at, ok, well, how is it affecting these sorts of chronic diseases like neurodegenerative diseases, Alzheimer's, dementia, and different things like that. So there's great research in Nutrition and Metabolism back in 2009. And what they did was they took 152 people with Alzheimer's disease. Didn't do any dietary intervention in the study. So not a ketogenic diet. All they did was added exogenous

ketones. They added in a ketone into the...

So they weren't going to lower insulin which is what the diet does which is really the best way to apply this. All they did was they added in ketones and MCT oil into that person's diet. And what happened? They saw significant improvements in their cognitive ability when they did that.

Dr. Agolli: That's powerful. You're not going to see that. This is a big, big problem in our society right now. And it's actually fearing a lot of Americans, which it should be by the way. We need to do better research. But these studies you just quoted, we need to continue trailblazing forward because all of these pathways we're talking about, whether it's going to be NF-kappa B which is the gateway to all inflammation. Inflammation, having chronic inflammation—acute inflammation is necessary for healing. But chronic, past 72 hours, actually is like having a smoldering fire continually going on in your body. And it is rampant right now in our society.

Dr. Jockers: Yeah.

Dr. Agolli: And what I've read myself and with you quoting these studies, I'm encouraged. I'm encouraged if we can get more integrative doctors believing and talking about this. And that's really encouraging to hear about these exo ketone bodies because it is difficult for elderly patients as well maybe to do the diet. I think it's the best way to do it. But this is encouraging.

Dr. Jockers: Yeah. You could just go right into a nursing home, bring MCT oil in there, put it on their food every day, and based on this study, you're going to see changes.

Dr. Agolli: We're going to see

some positive results as well, much better.

Dr. Jockers: It's so powerful. And so you think about what that means to the average person out there. What the science is showing is that being keto-adapted is going to improve cognitive acceleration, just your cognition in general. Your ability to think sharply, quickly, improve your memory, your learning, and of course reduce your risk of developing neurodegenerative states.

And then, we've got to talk about mood. And that's really the fifth thing that I want to focus on is mood. We have an epidemic of depression and anxiety in our society. And so, one of the key things that being keto-adapted does—not only does it downregulate inflammation in the brain, and we know that depression now is really neuroinflammation, meaning that it's inflammation in the brain when this neuro-inflammation that I had talked about before, when that's activated and elevated which is what we find when we actually look at the brain tissue of people who are depressed that they have higher levels of inflammatory activity there. That becomes downregulated by a ketogenic diet and a ketogenic lifestyle.

So the other big thing is we've got these neurotransmitters. One is glutamate; the other is GABA. Glutamate is an excitatory neurotransmitter, meaning that it helps us think sharply and quickly. So I'm doing this presentation; I need to think sharply and quickly. I got a lot of glutamate activity going on. However, if glutamate gets out of control and it just continues to go really, really rampant and we have a lot of glutamate, it actually excites the brain tissue to death. You may have heard of things like monosodium glutamate, MSG,

which they put in a lot of Asian food and processed foods.

And people used to go to the—well, they still do—Asian buffets, and they would come out with massive migraines because they had this glutamate excitotoxicity that would take place. So what balances glutamate is this other neurotransmitter called GABA, gamma-aminobutyric acid. And it's inhibitory. It helps balance us and calm us. What we find is that people with anxiety, they have high glutamate, low GABA. They don't have a good ratio. Same thing with depression.

So what a ketogenic diet does, when we're keto-adapted, it helps balance out the glutamate to GABA ratio and creates stability there. What does that mean to you? That means you're going to be able to think sharply and quickly but you're not going to get out of control. Your brain's not going to be going too fast. You're not going to be at risk for anxiety, for depression in the same way. You're going to notice just an improved mood, more emotional balance.

You think about domestic violence out there and just the amount of...

Dr. Agolli: It's an all-time high right now in our society we're seeing.

Dr. Jockers: Anger and frustration in our society.

Dr. Agolli: Road rage, we're seeing a lot of...

Dr. Jockers: Yes.

Dr. Agolli: Our younger population just have unexplained fits of anger, turning to substance abuse because it really is about balance in the brain. And this is what I love about the keto-adaptogenic lifestyle.

Dr. Jockers: Yes.

Dr. Agolli: It's just a balance, and it makes a lot of scientific sense. Now, with all these years and all these studies, we're starting to really understand the science. So I want to get into describing a life of someone that you've seen and worked and coached with on this keto adaptation.

Dr. Jockers: Yeah. Absolutely. Just kind of like what we're talking about here. So basically, when we start to look at the lifestyle, if we're able to balance out that glutamate to GABA ratio... I want to really just jump back to that. This is huge because we've got a massive amount of domestic violence, anger, frustration, things like that. As a society, we let little things offend us and get us angry. And whenever I see that, when I see people doing that, one of the big things I think is their blood sugar is probably off. Their blood sugar is out of whack.

Because when you're keto-adapted, when you are actually following this lifestyle, you are much more resilient to that stress, much more resilient to it. And so, you start to see life differently. It really helps you grow a lot mentally, emotionally, spiritually. You're a lot more balanced. And I think that domestic violence, all this kind of stuff will go down significantly if we're really able to get this message out to more people. So that's a big thing.

Also, we've got to look at just inflammation in general. If we are saying, hey, the research is actually pointing this out that it downregulates these inflammatory genes, it has this epigenetic effect where we actually impact the genes related to inflammation, then I believe even though the research isn't out there on conditions like rheumatoid arthritis, like eczema, that are all associated with chronic inflammation. There's not a lot of research on how a ketogenic

lifestyle and becoming keto-adapted affects those types of conditions.

However, as a clinician, I'm not going to wait for the research to come out there. I'm going to extrapolate what I'm seeing with the downregulation of inflammation in the brain, and say, I think that person that has rheumatoid arthritis is going to have a significant reduction in inflammation because we know that being keto-adapted downregulates nuclear factor-kappa beta, tumor necrosis factor alpha. And I think they're going to see significant reductions in pain. I also think that that person with eczema or acne that they're going to see changes in inflammation in their skin. Somebody with Hashimoto's would see changes in inflammation around their thyroid.

So we've got to start to extrapolate what that information means.

Dr. Agolli: It's a great hypothesis, and I will definitely postulate with you. Because through everything I've read I have to agree that all of these diseases that are increasing, these autoimmune diseases, and a lot of physicians think, Ok, it's autoimmune. Let me shut down the immune system. How counterintuitive is that? And really based on the fact that we need to find out what's causing these inflammatory pathways and look for strategies. And I couldn't think of a better strategy than the ketogenic lifestyle.

We talked about this adaptation. What are some of the challenges that you've seen individuals experience as they try really hard to get to that keto adaptation? What are some of the challenges?

Dr. Jockers: Yeah. The biggest challenge with keto adaptation is you've got to switch from

burning sugar to burning ketones. Whenever your body's got to go through an adaptation period, there's uncomfortability that comes with it. It's kind of like exercise. You don't get in great shape without getting uncomfortable. You've got to go through some pain to get there.

So as you're adapting from being a sugar-burner to being a fat-burner, there is uncomfortability. And we call that the keto flu where people start to go through where their blood sugar drops and they start to feel dizzy. Sometimes they're hungry. Oftentimes, they will deal with a lot of fatigue, headaches at times. These are all classic things that people will experience as they're trying to keto-adapt. And it can last anywhere from a day for some individuals that are more metabolically flexible and their bodies are better at converting fat for energy to sometimes weeks. Two to three weeks for some individuals as they go through this process.

The more insulin-resistant your body is... We know insulin resistance through the condition of diabetes. The more insulin-resistant you are, oftentimes the more challenge you might have with it. Also the more stress you've been under, the more challenge you may have with keto-adapting.

Sometimes we've got to go through this uncomfortability in order to get to the other side. And I know you and I have talked a lot about strategies that people can take in order to buffer that so you notice less of this uncomfortability.

Dr. Agolli: And definitely. We're going to talk about those strategies. My next question's going to deal with that. But I also wanted the viewers to understand that you have to go through some type of process. You know the old saying,

“no pain, no gain.” But the reality is if you are insulin-resistant, which we know leads to type 2 diabetes. And need that insulin, as Dr. David said, to unlock into the cell and to drive... It's really all about energy. So there is hope. There is hope.

For those of you that are having difficulties with a week to two weeks, I want to just give you hope because Dr. David... The next question I have is going to help answer that. During this keto adaptation, what are some of the supplements that you've seen can support this keto adaptation? Because I think this is critically important, and it's a gamechanger for some of the viewers that are experiencing. Because no one wants to have the keto flu for a couple of weeks.

Dr. Jockers: Yeah, exactly. Number one, the first thing I want to do is really just talk about some lifestyle things. One big mistake I see a lot of people make when they try to get keto-adapted is they're not hydrating well. We talked about the importance of water and using electrolytes. Salts, healthy salts like pink Himalayan salt is really my go-to or maybe a Celtic sea salt.

Something along those lines. Really good, high-quality salt. Why is that? Because when your insulin goes down, you start to excrete more electrolytes, more minerals. Your body gets rid of them. Your kidneys flush them.

Most people are on a high-carbohydrate diet. When you're on a high-carbohydrate diet, your insulin's high. So therefore, you retain more sodium. So in our society, most people have high insulin, high-carb diet. So they're retaining all this sodium, so what do the doctors say? Be on a low-sodium diet, low-salt diet. So everybody hears that and they think that's across the board. Not at all.

If you are starting on this ketogenic journey, you need more salts. You need to get those electrolytes because your body's going to excrete more of them. So a lot of water and electrolytes will really, really help with curbing any sort of issues that take place with the keto flu.

Also, what you can do is in the beginning phase, try to consume a ketogenic meal every three to four hours. So if you're used to eating six meals a day and you try to drop to two meals a day, that could be a big shock for your body. So in the beginning, go from six meals to maybe four meals. Try to do every three to four hours and make it a ketogenic meal. High fat, moderate protein, low carb.

So again, you're eating six meals a day; cut it down to four for the first few weeks. Then cut it down to three. Then cut it down to two. It may take you a month, month and a half, four to six weeks or so to get down to that point where you're really able to implement that intermittent fasting and just reduce your overall meal timing. So I think that's a huge tip.

Now, as far as supplements go. A couple of things. MCT oil can be really, really helpful. Medium-chain triglycerides which are processed from coconut oil can be really helpful because they turn into ketones fairly quickly in the body. The downside of MCT is that some people have a lot of gastrointestinal issues. People that are more prone to that need to start very slowly, maybe like a half of a teaspoon, a really small amount to start to increase the ketones. And you can put that on your salad as a salad dressing. You can put it in your coffee and make like a fat-burning coffee, keto coffee. That's a great strategy for it. It really has no taste. You can actually cook with it. It has no taste, no flavor at all, but it

elevates ketones in your system. So that's a really great strategy.

There's a new product called SCT oil which is short-chain triglyceride oil. That tends to be a little bit better on the gut, and it's kind of made from grass-fed butter so it tastes really good, kind of like a ghee. And that's another strategy.

But what I found to be the most effective is actually using exogenous ketones. So these are ketones that are produced in a lab that you can then take in a supplement form and it immediately elevates your blood hydroxybutyrate. And what research has shown—because there are a lot of companies that are producing this. Research has actually shown that it's better to take exogenous ketones in combination with an MCT powder, medium-chain triglyceride powder, so you don't just get this massive spike of ketones. But instead, you get this steady rise of ketones in your blood stream.

And again, when you get those ketones elevated in your body, you're going to notice that you're less hungry. So you don't have the cravings. You don't have the hypoglycemic kind of panic attack where your heart starts racing, you start sweating, you have a headache. You won't have that because now you've got the elevated ketones. Your body realizes that.

Dr. Agolli: And a lot of research is compelling because we talked about that in previous interviews where it's all about digestion, absorption. And that strategy alone, a lot of these other companies, these exogenous ketones, they're not looking at adding for the body to adapt efficiently. It's all about efficiency, and that MCT, because it's a medium-chain triglyceride which is going to help you get into

ketosis as well. But when you add it with the exo ketone bodies such as beta hydroxybutyrate, it's just like a very, very slow. I almost describe it as a time-release. And it just floods the body, and it passes the blood-brain barrier. And it's just an amazing combination, Dr. David.

When I read the research you've done and the discussions you've had, this is a great combination. So that's fantastic.

Dr. Jockers: So we combine that. Then other things... We need the minerals. We talked about that. Minerals. So super key. A good exogenous ketone product. The ketone itself, the beta hydroxybutyrate, should always be combined to different minerals, and we really like magnesium, sodium, and calcium for that. Very important to combine that so we get the benefit of the minerals and it's necessary for optimal absorption.

Also, adaptogens. Adaptogens are super key. So there's a lot of them out there. If you're listening, you may have heard of things like ashwagandha, rhodiola, maca, reishi, lion's mane. These are really, really powerful adaptogenic herbs. And adaptogens are basically plant compounds, plants, that have adapted to geographical stress. They've adapted to extreme temperature ranges. They've adapted to predators, to all different types of things that would in a sense threaten their survival.

And they've developed compounds. In particular, one of the most well-studied is triterpenes, these powerful compounds that give it an ability to adapt and get back to homeostasis or balance so that they can continue to grow, be nourished from the soil, and thrive in harsh conditions. So taking a group of adaptogens, and you find kind of the ones that you like the best. In

a product that you and I made, we used six adaptogenic mushrooms, organically grown.

So cordyceps which is one of the most powerful ones. It's renowned for performance. Reishi. We've got lion's mane. King trumpet which is amazing for circulation. What else do we have in there? We've got shiitake...

Dr. Agolli: Shiitake.

Dr. Jockers: Which is one of the best things for the immune system.

Dr. Agolli: Absolutely.

Dr. Jockers: So adaptogens. Getting adaptogens into your diet whether it's the mushrooms, whether it's ashwagandha, whether it's rhodiola or holy basil, getting those in regularly will really help you with keto adaptation because it will get your body closer to homeostasis and balance so you're not like way out here where you're burning up sugar and you're stuck in fight-or-flight. It helps balance your nervous system, so that's really key.

I also like branch chain amino acids. So things like leucine and isoleucine, valine can be really, really effective for preserving lean body tissue and just really giving you more energy, drive, helping you with tissue recovery. So that's another thing that can be helpful. And then phospholipids.

Phospholipids are really every cell of our body is made up of phospholipids. They're right on the outer membrane. And part of downregulating inflammation is rebuilding cell membranes.

And so, phospholipids are one of the key backbones for that. We can consume phospholipids when we consume things like egg yolk. That's a really good source of phospholipids. Grass-fed butter.

But also sometimes taking some supplemental phospholipids will help us downregulate inflammation and improve brain function, neurotransmitter function in our brain more effectively and quickly. Those are some powerful supplements.

Dr. Agolli: Those are powerful supplements. There's no doubt. And I love the fact that you and I have been discussing, and we want our listeners and our viewers to know that it is about adapting and it is about getting the body to adapt into extreme stressful situations. The reality is we all are dealing with stressors, and there's several different types of stressors: environmental, chemical, and of course emotional. So this is what's great about these nutrients because we're not saying you're never going to have stress. We are going to have stress, but there's good stressors as well. So I love the fact that the research you've done, Dr. David, and this formulation is just amazing.

So let's talk about food because food is powerful. Hippocrates talked about food, "Let your medicine be your food and your food be your medicine." I want to hear your favorite five ketogenic foods because one thing that really impresses about you is that you've taken it to the next level. Because a lot of doctors will say, "Oh, yeah. Go on this diet." But you've actually helped and get some recipes out there. So let's talk about your favorite five foods.

Dr. Jockers: Yeah, my five favorite—I love coconut. Really pretty much anything coconut. You take a coconut. The meat is ketogenic. It's high fat, moderate protein, low carb. The milk, so if you have coconut milk, high fat, moderate protein, low carb. In fact, there shouldn't really be any protein in the coconut milk. Just

got to make sure it's unsweetened. That's super key.

Coconut oil. Really good. Turns into ketones. That's really one of the best sources of MCT, medium-chain triglycerides, to begin with. You've also got coconut butter which is real versatile. You can make a lot of recipes with that. You can make fudge, all different types of stuff with coconut butter. You've also got coconut flakes, so you can just grab a bag of coconut flakes, stick it in the freezer. It's like candy chips, and they taste great. Fully ketogenic.

The only thing about coconut that's not is coconut water. So you've got to be careful if you're doing coconut water. I will do fermented coconut water which comes out and it turns into a coconut water kefir, and the bacteria go in there. They actually eat the sugar, break it down, and produce B vitamins and organic acids which are really good for your gut and energy production, and they reduce the sugar content. So if you're going to do coconut water, do fermented coconut water. Coconut water kefir. And again, consume that in moderation because it does still have some sugar in it which can throw you out of ketosis. So coconut.

Avocados. I love avocados. I usually have one to two avocados every day, if not more. I'm a huge fan of guacamole. I also use them and make chocolate pudding with coconut milk, with some sort of healthy chocolate protein powder, and they absolutely taste amazing. Avocado is loaded with potassium and magnesium. Two carotenoid antioxidants, lutein and zeaxanthin, that are super good for the body. Also, avocados are very rich in fiber. And when you're on a ketogenic diet, people are like, "Where am I going to get my fiber if I'm not eating starchy carbohydrates?" Well, avocados, phenomenal source of fiber and

electrolytes. Really good for bowel motility. Love avocados.

Grass-fed butter. Got to love grass-fed butter. It's loaded with fat-soluble vitamin A, retinol. A lot of people think, Well, I'm going to get my vitamin A from carrots. And I'm not against carrots. I think carrots have a place in a diet because they are a healthy food. On a ketogenic diet, you wouldn't want to eat carrots very often. And if you did, a very, very small amount of them because they are higher in sugar. But the type of vitamin A that's in grass-fed butter and egg yolk is retinol, fat-soluble retinol, much more potent and effective than beta-carotene which is what we find in the plant foods.

Dr. Agolli: And it stores better. That's the key right there.

Dr. Jockers: Yeah, it stores better.

Dr. Agolli: Because it's fat soluble, so that's a great point.

Dr. Jockers: And you think about the name: retinol. You have a retina, right? And so, super powerful for the eyes. So you think about glaucoma, cataracts, things like that. One of the most important nutrients is that nutrient we find in grass-fed butter as well as egg yolk. It affects that. Plus, the eyes are an extension of the brain. So anything that impacts and improves the eye is going to improve the brain. And they're also partially an extension of the skin. They all come from the same embryological origin, the ectoderm. So it's going to help improve the skin too, getting that in.

Now what else is in grass-fed butter? Conjugated linolenic acid, really good for the metabolism. It's an anticarcinogen, helps your body destroy cancer cells.

It's also got omega-3 fatty acids as

long as the cows were eating grass which downregulates inflammation in the body. Vitamin K2. Vitamin D in there. It's got choline which is really powerful for the brain. So I love grass-fed butter. And I'll do like steamed cruciferous vegetables, and that'll be my fourth. I'll take broccoli, cauliflower, Brussels sprouts, something like that. Steam it up. Breaks down the outer cellulose, the outer fiber, makes it easier on your digestive system. Those plants are really tough on the digestive system if you're just eating them raw.

So if you were just to eat raw broccoli, actually very tough for your digestive system. You need a lot of enzymes to break it down. If you steam it, it breaks down that outer cellulose, makes it easier on your gut, and then you cover it and melt grass-fed butter all over it. It tastes amazing. Put some herbs on it, maybe some fresh-squeezed lemon. Tastes incredible. Great carrier for the butter.

Dr. Agolli: You're making my mouth water right now. I'm, like you, still fasting, so we'll have that later on today.

Dr. Jockers: Yeah, exactly. That's right.

Dr. Agolli: Those are superfoods.

Dr. Jockers: They're amazing.

Dr. Agolli: Those are amazing superfoods.

Dr. Jockers: Exactly. That's right. And my last one is going to be olives. Just olives in general are awesome. So you can put those on salads. You can use olive oil. Things like that. I could talk on and on. We could talk about lemons and limes, apple cider vinegar. I can go all day on this.

Dr. Agolli: That's awesome. That's

just great, great advice, Dr. David.

Dr. Jockers: Yes.

Dr. Agolli: And listen, if you're joining us and you're encouraged with the Keto Edge Summit, we continue to bring this amazing information with these superfoods and the science and how the body operates. And ultimately, it's giving you the tools to galvanize you to take action. So we're all encouraged here. So, Dr. David, we're almost running out of time here. How can our viewers find out more about you and the ketogenic lifestyle? And more importantly, because of the research you've done with the Keto Edge product, how can they find out more about that?

Dr. Jockers: Yeah, absolutely. So for me, my home base is DrJockers.com. Just D-r-j-o-c-k-e-r-s dot com. I have a really active YouTube, Facebook, all the social media channels. If you're in the Atlanta area, I do have a clinic, Exodus Health Center, where we do

functional medicine, chiropractic care, health coaching, keto coaching, all that kind of stuff.

The product that you and I, we, helped formulate together with our research is Keto Edge. And you can find that on KetoEdge.com. We're really excited about it. It's one of the sponsors of this summit, and so you'll learn more about this product and really why we're so excited and what we can do with that to really help improve people's ketogenic journey and really make a dent in our healthcare system and help people get well and get that super edge in life that we hope and pray that you'll get out of this.

Dr. Agolli: We want to thank you guys for listening. And if you're encouraged like I am and you're empowered right now and you just want to take action, continue listening to our other experts. This is all about you taking that first step to optimal wellness. There is no doubt that the research is behind the keto edge lifestyle. It

is a lifestyle. We encourage you to embrace that. So continue thinking. Hopefully you'll continue educating and reaching. And I just want to thank you, Dr. David, because you started this whole process.

Let's continue to make a difference...

Dr. Jockers: Let's do it.

Dr. Agolli: One patient at a time, one cell at a time, because this is powerful stuff. Thank you so much.

Dr. Jockers: Yeah. Love it, man.

Dr. Agolli: God bless you.

Dr. Jockers: **Love it.**

Dr. Agolli: And we'll see you guys next time here at the Keto Edge Summit.



A Practical Approach to Nutritional Ketosis

Jay Davidson, DC, PScD with Jimmy Moore

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Dr. Jay: Hello, this is Dr. Jay Davidson from DrJDavidson.com. I'm excited to welcome you to this very special segment of the Chronic Lyme Disease Summit. According to the CDC, there are more people affected with Lyme disease each year than breast cancer. That's including invasive and non invasive together. Today my special guest is Jimmy Moore. And we're going to explore a ketogenic diet or nutritional ketosis. But before we do, a little bit about Jimmy.

Jimmy Moore catapulted onto the health scene in 2004 after a phenomenal 180-pound weight loss that enabled him to come off of prescription drugs for high cholesterol, high blood pressure, and respiratory problems. He's an energetic personality behind the uber popular blog Livin' La Vida Low Carb and the host of the top ranked iTunes health podcast called The Livin' La Vida Low Carb Show, which I think has been on the air forever, Jimmy.

He's interviewed over 1,000 of the world's top health experts and has dedicated his life to helping people get the best information possible about ketosis so they can make the right decisions for their health.

He's coauthored Cholesterol Clarity, Keto Clarity, and The Ketogenic Cookbook, which I believe is the newest. And I love that one, The

Ketogenic Cookbook. You can definitely learn more about Jimmy and his work at livinlavidalowcarb.com. Jimmy, I want to welcome you to the Chronic Lyme Disease Summit.

Jimmy: You think my podcast has been on a long time? You should be the one doing all the podcasts. I really feel old.

Dr. Jay: When did you first start your podcast?

Jimmy: It was funny because I had started my blog after I lost 180 pounds in 2004. I started blogging in 2005, reluctantly, because so many people were asking me how I did it, how I did it. And I was like, "Okay, you people leave me alone. I'm going to start a blog." And so I did a blog. And about a year later, this guy says, "If you talk half as good as you write, you should be a podcaster."

And of course this was 2006. Nobody really knew what podcasts were. I think some of the political podcasts were out there. But there definitely weren't a bunch in the health realm. And so he's like, "Well I'll produce you. All you've have to do is just rant." Well I said, "I can rant." So I started doing this kind of compilation podcast. And very quickly he said, "Dude, you've got to get your own show."

And I felt so unqualified. But I was like, "Okay, let's do this." I was very

reluctant because I didn't think that I, without an MD, PhD, RD, or any D after my name, had any right to say anything when it came to health. But I did have a pretty compelling story. And I do like to try to make things complex, simple. So why not a podcast? And that was in October, 2006, that The Livin' La Vida Low Carb Show was born. And now you can't shut me up.

Dr. Jay: Well, I've got to say, Jimmy, I am super excited to be interviewing you for this summit because first of all, I love somebody that's passionate about what they do. And it's clear you're passionate about what you do. But also, too, you have an ability to simplify the complex.

You are in, what I consider, the top three in the world of really understanding ketosis. You've got a couple of researchers, like Phinney and Volek. I'd put yourself right in that category. But I'd really distinguish and say this is the guy that's going to really help people actually understand, from a practical standpoint, how do you implement this rather than just almost like scientific jargon. So I really want to give you some accolades for that.

Jimmy: Thank you. And I have mad respect for Jeff Volek and Steve Phinney and Dominic D'Agostino and Tom Seyfried and all these guys out there that are doing the real research because without

the research, without all of that evidence that's there, I could sit here and talk until I'm blue in the face. But they actually are doing the footwork that I then get to translate and make into palatable language that everyday people can understand. So I think we're all playing our role. We're using our gifts and abilities in the way God intended us to.

Dr. Jay: Absolutely. So I've got to ask you a question. 180 pound weight loss in 2004, where did that come from? How did you stumble upon ketogenic? Or people refer to it as ketosis or even nutritional ketosis.

Jimmy: Yeah, so when I first started... it was at Christmas of 2003 when the story began. It actually began a long time before that because you don't just suddenly wake up one day and say hmm, I think I'm going to start a new diet and change my life forever. If only it worked that way. So it was kind of a series of things that led up.

But when I got a diet book for Christmas in 2003, that was kind of the wake up call for me. And the reason it was a wake up call was my mother-in-law gave it to me. And I was like, "Okay, thanks, Mom. Yes, I know I'm fat." And she had given me diet books over the years. I had all kinds of diet books given to me.

But this one was unlike any I had ever seen before. Most of the diets that I had done over the years, Jay, had always been predicated on a low fat, low calorie, exercise until you drop method for losing weight. And I had tried all of those things, had seen some nominal success in losing weight. But the problem was I was always hungry. I was always irritable. I didn't feel right eating that way. And I kept wondering, what in the heck is wrong with me? This is the prudent way to eat. Why

does it not feel good for Jimmy Moore to be eating that way?

So it wasn't until I read this book that my mother-in-law gave me that my eyes were opened. And that book was Dr. Atkins' New Diet Revolution. And in 2003, the Atkins diet was still pretty big on the scene. So I read this book from cover to cover between Christmas and New Year's. And I said, "This guy is whacked out of his mind. Wait a minute, you don't eat carbohydrates to the degree that authorities say you should?" They say 250, 300 grams of carbs minimum a day. And here was Dr. Atkins saying eat 20.

And I was going, okay, where do you get energy from if you only eat 20 grams of carbohydrates? Then we moved to the fat. And he says eat more fat, especially saturated fat. And I'm going wait, a minute. This guy's a cardiologist. Dr. Atkins was a cardiologist. And he's telling people eat more fat. Doesn't he know that's exactly what's going to raise cholesterol, clog your arteries, and give you heart disease?

But I've got to tell you, Jay, the compelling thing for me was this was unlike anything I'd ever heard before. And they say the definition of insanity is doing the same thing over and over again expecting a different result. Well, I had been insane in my dieting throughout my entire life. I had always been a big boy. And so I had always done the whole low fat, high, healthy, whole grain, exercise kind of methodology for losing weight. And it just wasn't working. So when I read this book that was kind of the diametrically opposite, I thought, well, what the heck. I've never tried this before. Let's see how it goes.

So January 1, 2004, I go to step on my scale in the house. And it registers an error. Now I knew it went up to about 325, 330 pounds.

And I thought I was about maybe 335. So I said okay, well I'm just a little bit over this. Let me find a scale somewhere out there. So I start driving around. I go to one gym, and they had one that went to 350. That didn't measure me either.

Dr. Jay: Wow.

Jimmy: I thought well maybe I have to go to one of these packing companies and stand on one of those scales that goes to thousands of pounds. And I was like, no, I'm not going to embarrass myself and do that. So I kept looking around. I finally found a Gold's Gym. And they had one that went to 500 pounds. I said well I'm nowhere near 500 pounds. And I step on the scale and see a 4. And my heart about drops because the cognitive dissonance about where I thought I was and where I really was became a reality at that moment.

And it was at that moment that I said, "Dammit, Jimmy, you've got to get serious about this." And thankfully the symbiosis of that stark realization of how bad it had gotten combined with this powerful new way of eating that I had never heard of before that was more palatable and delicious and, in the end, nutritious than anything I'd ever done before, it just worked out to be this kind of perfect marriage that helped me lose that 180 pounds in 2004.

Dr. Jay: And that actually rocked and rolled off of basically a New Year's resolution time period?

Jimmy: Yeah, January 1, 2004, was my New Year's resolution to lose weight. But what it turned into, Jay, was a new life resolution to be healthy. And I think far too many people take January or symbolic times to lose weight. "Oh, I want to lose 60 pounds in the next six months so I can be ready for X's wedding."

Okay, great. If that's your goal, that's fine. But know that your ultimate goal should be to be healthy. And by being healthy, you will ultimately lose weight when you get your health in order. And I think we have those two things backwards. People say, "I want to lose weight. And I'll get healthy." But I say uh-uh. Get healthy, and you'll lose weight.

Dr. Jay: I could not agree more with you, Jimmy. What really stands out from their statements is you were talking about calories and lowfat. And I've always viewed the whole counting calories as basically like you're robbing Peter to pay Paul. At some point it's going to catch up with you. But yet in America, we're stuck on this roller coaster.

And I do have to say, I love your books. Your newest cookbook, the keto bread, we just recently made the Keto bagels.

Jimmy: Two ingredients is all it is. People get freaked out when we tell them it's just two ingredients to make bread that has zero carbs.

Dr. Jay: I know. I'm like this is insane. This is amazing. Where was this even a couple of years ago? So I want to appreciate you definitely for the information you're putting out there. There's a book that I recently read called The Big Fat Surprise by Nina...

Jimmy: Yeah, Nina Teicholz.

Dr. Jay: Yeah, I love that book because it really dives into almost like a whole timeline of where the low fat thing came in, the Mediterranean Diet and how...

Jimmy: The politics of it all, yeah.

Dr. Jay: Yeah, I love that. So I'm assuming you've already read that, probably, then.

Jimmy: Oh, Nina's a good friend of mine. She's been on my podcast many times. In fact, I just recently had her on one of my Periscope interviews I did with her about the new 2015 dietary guidelines. So, yeah, she's definitely got her finger on the pulse of this whole thing. And, yeah, she's going to be someone to watch in the coming years, Nina Teicholz.

Dr. Jay: Awesome. So you mentioned Atkins. And I think there's definitely that red flag alarm that goes off in people's heads sometimes when you hear the word Atkins. Can you define Atkins diet, maybe that newer version that you picked up on in 2004? And then where does ketosis or a ketogenic diet fit into that?

Jimmy: Yeah, so Dr. Atkins, he actually was studying low carb diets pretty hot and heavy in the 60s. And he was looking at some older work that people had done with limiting carbs. He obviously looked way back in the 1800s, at this guy name William Banting that did it and actually had the very first successful international bestselling diet book. It was a low carb, high fat ketogenic diet book. People don't know that.

But it's called Letter on Corpulence. If you go online and just do a Google search of that, you'll actually find a pdf of that very book. It was like 68-page pamphlet. But it sold so many copies around the world by this undertaker who basically ate that way to lose weight and get healthy. So Dr. Atkins was influenced by him. He was influenced by a lot of different people, like I said, that had been using ketogenic diets over the years.

So in the early 70s he decided, well, I'll just make this a little more updated. And I'll share some experience. I've used this with my

patients. I'll put that into a book, and we'll call it Dr. Atkins Diet Revolution. That was in 1972. I was not even one year old when that came out. So he put that out there. And it did pretty darn well.

And of course the 1980s came along, and the whole low fat dogma became codified as the dietary guideline for Americans. And so people started quickly cutting their fat thinking that that was the answer. And about 15, 20 years later, people were like, "All right, wait a minute. I'm not getting healthier.

What's going on here?" And Dr. Atkins realized hey, maybe here's an opportunity for me to reintroduce what I originally put out there in the early 70s. So he put out Dr. Atkins New Diet Revolution, which had a little bit of updated language, where they talked about net carbs, where you can subtract fiber from your total carbohydrate intake. I don't believe in that, by the way. And we can talk about that here in a minute.

But that's what got me started on low carb living, was the Atkins Diet. But I think Atkins got one thing really wrong, which is where the ketogenic message comes into play. He got one thing really right, though. Let me tell you that one first. He said cut your carbs, and get it down to probably 20 grams to start. And then adjust from there. That was spot on.

What he missed was fat and protein are not to be unlimited. He said make them unlimited. Eat it to satiety. So guess what our fat phobic society did, Jay? They said chicken breast and broccoli is a perfectly low carb ketogenic meal. That's what was thrown out there. Yes, it's low carb. But no, it's not ketogenic because, like you said, protein. It was way, way too much protein and not enough fat.

And one thing I wish that Dr. Atkins had made more explicit, because I know he believed this, was that if you remove the carbohydrates from your diet, what do you need to replace those carbohydrates with? It's dietary fat, not more protein. And people were like, well, I thought protein is good. Aren't you supposed to eat more protein?

I see Cam Newton on TV commercials talking about eating this yogurt that has X grams of protein in it. Why is that not a good thing? Well it's not a good thing because protein, in excess of what the body needs, actually gets converted into, get this, sugar, glucose. So you don't want that. When you're trying to be a fat burner, a ketone burner, you don't want sugar to be being created. And yet that's exactly what's happening when people overconsume on this protein.

So cutting your carbs is the right message, Dr. Atkins. Unfortunately he needed to be lot more explicit that dietary fat, especially saturated fats and monounsaturated fats, are the real key to being ketogenic.

Dr. Jay: Yeah, and I want to clarify, too, just for our listeners, the reason I wanted to interview you for this summit, Jimmy, was a little selfish because honestly, I love the ketogenic diet. I like recommending it to people dealing with chronic illness like chronic Lyme disease and wanting to know more and getting the latest cutting edge tips from yourself.

But people listening, I think, can also say, "Well, I'm 100 pounds soaking wet, horrible health issues." I would say from a clinical side, ketosis is not about losing weight. It goes back to what you had said. It's about getting the body well and healthy whether somebody's underweight or overweight. Can you comment on that?

Jimmy: And here is what I would say. If, for no other reason to eat a ketogenic diet I got the mental health benefits that come from eating this way, I would eat this way if I weighed 500 pounds and yet got those mental health benefits, which, by the way, if I weighed 500 pounds, I would be losing weight. I promise you.

But, yeah, the mental health benefits are just tremendous, Jay. And what people don't realize is they walk around with this foggy brain. They're kind of lethargic, especially after eating maybe their lunch. And they're back at work, and they start getting sleepy and fatigued and can't think straight. And they're wondering what in the world's going on.

Well, what did you have for lunch? "Oh, I went down to Subway and got a six- inch sub with a salad and a cookie and a Coke." Okay, well there's your problem. You're feeding your brain tons of something it doesn't really want. And guess what it does want? It wants those healthy fats. It wants not carbohydrates to fuel itself, it wants ketones to help fuel your brain.

And when your brain is fueled by ketones... it kind of reminds me of that new TV show and the movie *Limitless*, because you really have just this turned on kind of thinking that goes on. Your brain just feels like it works so much better. And it's those ketones that make the brain thrive. And again, if that was the only benefit I ever got from ketosis, I would do it just for that.

But the good news is you get a bunch of other benefits, as well. You don't think about food anymore because you're so satiated with all of the healthy fats and the moderate amounts of protein and the carbs that aren't spiking your blood sugar and insulin levels.

You're able to be satisfied.

I remember when I first made this shift, where I really got serious about ketosis, in 2012. We can talk about that story here in a minute. But when I got real serious about it, my wife, Christine, had to remind me, Jay, to start eating again because she was like, "When's the last time you had a meal?" I looked up at the clock, and I said, "I think it was this time yesterday." It had been 24 hours since my last meal. And I didn't even notice it because I was so satiated, so satisfied.

So these spontaneous periods of what we call intermittent fasting just happened. I didn't try to force it. I wasn't pushing through hunger and making myself miserable as some health gurus say. Oh, a little hunger's okay. No, it's not. If you're hungry, that's your body screaming at you to feed it nutrients, which is why a ketogenic diet is so effective because you get the nutrients that your body wants. And then it's like, "Ahh. All right, we'll chill out for a little while. Thanks for feeding us."

So that's a huge, huge benefit, you stop thinking about your next meal. I can't tell you how many times I've been with family, and they're having breakfast, and they talk about what they're going to eat for lunch. Then at lunch they talk about what they're going to have for dinner. And then at dinner they talk about what they're going to have to eat the next day. And I'm going, "Really? Is this what life is worth living about, is what our next meal is? I don't know about you, but I want to have fun and live my passion and not worry about food."

Food is fuel. I think sometimes we overcomplicate things. Oh, food is meant to be pleasurable for us. Okay, great. You can have some pleasure eating bacon. I promise you I have pleasure eating bacon. But it's not the primary reason why

we eat. The primary reason why we eat is to fuel our bodies, and to fuel it as well as we can, which is why healthy fats, moderate amounts of protein, and low carbohydrates to your tolerance level will give you all of those benefits I've been talking about and more.

Dr. Jay: Yeah, and I think the whole Ancel Keys, University of Minnesota, back, what was it, in the 60s, where he basically said saturated fat causes arteries to clog, which is then linked with heart disease, basically you can hear that in America still, on the news, all over. So inevitably a lot of people listening are probably in a little bit of a freak out mode. And I want to back up just a little bit because you said—

Jimmy: Can I address the Ancel Keys thing real quick?

Dr. Jay: Yeah, absolutely.

Jimmy: That was in the late 50s when he did the seven-nation study. But what's interesting is in the 1980s, when all this lowfat started being codified into the dietary guidelines and the food pyramid and all that, Ancel Keys actually came out and said, "This is not at all what I was trying to promote." So even he, towards the end of his life, was going, "Uh-uh. They took my message and perverted it. This is not at all what I was trying to communicate to the masses."

So I don't know if he was having a "I'm getting close to the end of my career" mea culpa or what. But he did not support it at the end of his life. I just thought that would be a cool little anecdote about that story.

Dr. Jay: Yeah, and there are so many pieces in history that seem to be like that, from Louis Pasteur admitting on his death bed that Antoine Bechamp was right to

the guy that invented root canals, his last few years, basically going around trying to tell dentists to stop doing that. And so definitely you can see history repeat.

But to back up a little bit, you hit on this just briefly, ketones. And you talked about too much protein can turn into sugar through gluconeogenesis. Explain the difference between a ketone, or a ketone body, and sugar, and what sugar might do to immune system inflammation, all those things.

Jimmy: Oh my gosh. So most of the population right now, Jay, are walking around as sugar burners. They're eating most of their nutrition as carbohydrates, obeying all of the authorities who say oh, we need 60, 70% of our energy coming from carbohydrates. So when you're a sugar burner, your body is being fueled by glucose.

And that in and of itself is probably not a bad thing. But what happens is people get excessive amounts of glucose, which then raises insulin levels. And insulin is the fat storing hormone. So what does it do? It takes the blood glucose, and it hammers it into the cells. So that's how you get your energy as a sugar burner.

So what happens when you get too much of the glucose in your system? The insulin can't keep up. It's like if my neighbor's house was on fire right now, and then the house down the road caught on fire, and ten houses down the road from that caught on fire, could the one fire truck in the town put out all of those fires at the same time? No, it couldn't. It would have to make prioritizations and do the best that it could. But at the end of the day, some of the houses are going to burn down.

And so that's exactly what's happening when you leave

unfettered blood sugar that's in high amounts in the body. The insulin just can't keep up. By the way, that's called insulin resistance, once the insulin can't keep up with the blood sugar. And so that's the problem with being a sugar burner.

So how does being a ketone burner help with that? Well, when you eliminate the sources of sugar in the body, which is, duh, sugar, all carbohydrates that turn to sugar, and then minimizing the protein because of the big long g-word you said, gluconeogenesis, you do all of those things and then replace those foods with fat, your body makes a shift from being sugar burning to fat burning. And a byproduct of that fat burning is ketones. So the ketones are an alternative fuel source.

And I don't care what you've heard out there in the mainstream, or if you've read newspaper articles; you heard it from your doctor or your dietician that ketosis is bad because ketones are dangerous in the body, that's just pure, utter ignorance. Yes, it's dangerous within the context of one specific situation. And here it is. How many people listening, are a type 1 diabetic? Most of you probably just said no. If you said no, it's impossible for ketones to be dangerous in your body.

So let's say you are type 1 diabetic. Do you eat low carb? Again, a few of you probably said, yeah, I keep my carbs low. So if you keep your carbs low, and you're type 1 diabetic, it's almost impossible for you to get ketoacidosis. So who is this all about, this dangerous part? It's type 1 diabetics who eat a high carb meal and then don't take their insulin, which, by the way, if you're type 1, please always take your insulin, the proper dosage for whatever you're eating because that is extremely dangerous. And we'll talk about why right now.

So when you eat a high carb meal, and you're type 1 diabetic, your blood sugar goes extremely high, upwards of 240 milligrams per deciliter or above. And once your blood sugar gets that high, as a type 1 diabetic who has no ability to make any insulin at all, the pancreas is basically dead at that point, can't make insulin. They have to shoot insulin.

Or what happens is their blood sugar goes very high. And then their body thinks they're starving. So they start releasing ketones as another fuel source. But what happens is it's not these nutritional ketosis levels of ketones that we're talking about. It goes to extraordinarily high levels, over 20 millimolar of blood ketones. The average nutritional ketosis is somewhere between one and three. So extraordinarily high levels of ketones.

So that is a very dangerous place. That's what's called diabetic ketoacidosis. And that is indeed very dangerous. That type 1 diabetic will go into a coma and likely die if they don't get insulin and electrolytes and some other things very, very quickly. But, again, it was within the context of a high carb diet.

If that same type 1 diabetic ate a ketogenic diet, a low carb, moderate protein, high fat diet, guess what happens to their blood sugar? The blood sugar actually comes down, not up. And then blood ketones elevate just that moderate level of between one and three, typically. And that's perfectly normal, perfectly fine. And the body can use that as an energy source.

So I think sometimes, Jay, in this discussion about ketones, medical doctors, they mean well. But all they've been taught in their medical training is about ketoacidosis. They really haven't been taught under the tutelage of people like

Volek and Phinney what nutritional ketosis is all about. I really wish that that would become a part of the curriculum that these medical doctors had to at least understand before they could get their medical degree. But that's pie in the sky.

Dr. Jay: Well, it'll be another 10 or 15 years before that happens.

Jimmy: At least, yeah.

Dr. Jay: So it all comes back to, Jimmy, really controlling blood sugar. I heard you say that. And where you literally went 24 hours without eating, without even remembering that you ate, basically you were in a ketone burning zone.

The source of fuel was ketones. The body had it nice and steady. And you mentioned controlling blood sugar.

And when you look at research, when you're looking at brain health, which you mentioned earlier as well, too, dementia, Parkinson's, Alzheimer's, anything with brain, controlling blood sugar is one of the top priorities. But also, too, even somebody that's more concerned cosmetically about aging, I think the number one way to slow your aging down is to control your blood sugar levels, which you would say is really following a ketogenic diet to be into ketosis, or nutritional ketosis.

Jimmy: Yeah, and that's a great point. A ketogenic diet truly is an anti aging diet. And it's anti aging for several reasons. Yes, blood sugar lowering, but I would even say insulin lowering is probably the better effect that's causing that, as well as the inflammation lowering. These are all things that are contributing to aging that people that eat a crappy carb diet, as I like to call it, are subjecting themselves to.

So when you make that shift over to

making ketones your primary fuel source, you're lowering your insulin. You're lowering your inflammation. You're making your body healthier, more optimal, the way it's supposed to run and, quite frankly, how it did run for many years before the industrialized food processors got in on the "food supply."

Dr. Jay: So I want to ask a question. You mentioned ketosis, you mentioned diabetic ketoacidosis, two completely different things, which it's ironic how that's caused by too many carbs in a type 1 diabetic. I think that's interesting when you hear it in that frame of reference. Again, you're just brilliant how you simplify the complex. But you mentioned one to three in the nutritional ketosis, or the ketogenic zone. How do you measure? What's one to three mean?

Jimmy: Yeah, so there are three different ketones in the body. The one that a lot of people have heard about, Jay, is the one that's in the urine. So you've heard of these Ketostix, pee sticks. A lot of the Atkins dieters have used those for years. And what that's measuring for is acetoacetate. So that's the one that's in the urine. You pee on this stick, and it turns pink to purple and shows you your level of ketones spilling out.

And it's an okay one when you first start testing for ketones, when you're starting a ketogenic diet. It may be an okay one for a couple of weeks. But there's a problem with acetoacetate. After a couple of weeks, about two to four weeks, most people become ketoadapted and start using ketones very efficiently. And guess what happens to the acetoacetate? They start peeing on the stick, and they show nothing.

And they're going, "What in the world is going on here? What am I doing wrong? Do I need to

lower carbs? Do I need to eat more fat? I'm going to call Jimmy Moore and cuss him out. What is going on here?" And something amazing is going on here because the acetoacetate actually can get converted over into the usable form of energy in the blood called beta-hydroxybutyrate. We call it BHB.

So BHB is the one that you can test for in the blood. And there's actually a monitor, there are a couple of monitors out there, that can measure for BHB in the blood. So the one that I promote in America is called Precision Xtra. That's probably the best one. There's another one called NovaMax Plus. But I've done a side by side comparison.

And NovaMax just isn't up to par with the Precision Xtra one when you have levels that are on the lower end of ketosis, like .5 to .8. It'll just say LO. So it doesn't tell you what your actual number is. And if you're spending a lot of money on these strips, you want to know a number. So that's what I was talking about. Between the one and three is the beta-hydroxybutyrate on that Precision Xtra.

Now, if anybody's listening internationally, overseas it's called FreeStyle Neo. And I'm even seeing the Neo, the FreeStyle Neo, Jay, here in America. I saw it in a couple of Walmarts already. But it's the exact same company that makes the Precision Xtra. It uses exactly the same strips and everything.

The thing that's really bad about testing for your blood, though, is it's very expensive to get the testing strips. So I'm looking at my meter right now. The meter itself is probably about \$20. But these strips, if you go to amazon.com and put in Precision Xtra ketone strips, you're going to get sticker shock. It's about \$4 or \$5 per strip to test, which is exorbitant for most people.

So I've done a Periscope video all on how to find these on the cheap. If you just type in my name and then ketone testing strips, you should find the Periscope video that I did about how to find these on eBay and from Australia. There are definitely little tricks of the trade that I put out there to help people. I got mine for less than \$1 a piece, which is still a little bit expensive for some people. But to know where you stand, it is worth every single penny.

Now, there is one more ketone body in the body I do want to at least let people know about. And that's in the breath. It's called acetone. And you can actually test for that with one meter right now called Ketonix. It's a guy in Sweden who has epilepsy. And he didn't like the idea of peeing on a stick. He thought that was gross, plus the inaccuracy of it. And then it was painful for him to prick his finger to do blood.

So he's like, "Well, I want to do one that will test for the breath." So he's an engineer by trade. And so he created this Ketonix.com, if you want to kind of look them up. But you can test for your level of ketones in the breath.

Now is there a correlation between breath and blood? A little bit. There have been a couple of studies where they did correlate those. But it's not precise. If you want exact precision of where you stand in your ketones, you really need to test for the blood. If you just want a yes/no, the Ketonix has four levels of blinking lights. And if you're on the upper two, the red or the yellow, you're pretty much in fat burning ketosis mode as a yes/no answer. It won't tell you your exact amount, but it will give you a good indication of how you're burning fat for fuel.

Dr. Jay: So, in other words, pricking

the finger is the best way from a scientific way to actually measure if you're in ketosis or not?

Jimmy: Yeah, I think that that's the only way to really know for sure how well you're doing. Because again, you pee on the stick, it's hit or miss. Not whether you hit the stick or not, it's hit or miss whether you see good results. I thought I'd clarify that. And then with the Ketonix, blowing into that, it could change to yellow or red, but you don't know what that translates to as far as usable source of energy.

I will tell you this. If you blow red on the Ketonix, you're in pretty hard core ketosis pretty much all the time if you're always red. So that is the goal. And it's a lot cheaper. The Ketonix is only about \$150. And you can blow into that thing for thousands of times. The Precision Xtra is \$20 for the meter plus about \$1 to \$4 per strip. So that gets pretty pricey, pretty quick. And then there are the keto sticks, which are extremely unreliable, but they're very, very cheap, about \$15 for 50 of them.

Dr. Jay: You're getting some good prices. I was finding \$2 to \$3 a strip. So I'll definitely have to check—

Jimmy: I'll hook you up after we're done.

Dr. Jay: So I want to get to the meat and potatoes because so much of this sounds...

Jimmy: I don't eat potatoes, but, yeah.

Dr. Jay: The meat and coconut oil or the...

Jimmy: The meat and cauliflower mash. There we go.

Dr. Jay: So much of it sounds good in theory when you hear it. So many Americans, we're so conditioned

to want to go back to what we're used to. Obviously eating high fat, moderate protein, low carb makes the most sense. The body does the best in that situation.

But when somebody's addicted to sugar, even if they don't realize it, the people that go to the pantry after they eat dinner because they're still "hungry," the people that eat breakfast and then a couple of hours later they're hungry again, those are sugar burners. What's the best way to adapt and get into ketosis to break the sugar?

Jimmy: Honestly, I think those people have to just suck it up and do it. And I don't mean to sound cruel. My father-in-law right now has had some surgeries. And he's dealing with cancer. And he's got different things happening. And he just refuses to eat well, even though he knows what I do for a living. And my wife tries to explain to him the things that she knows would help him.

And yet he's so addicted to the carbage that I think sometimes you just have to kind of make yourself get through the first couple of days because once you get beyond a couple of days of coming off of that stuff, it's literally like heroin or crack cocaine. You're going to feel a little bit of pain coming off of that.

And I know that feeling, Jay, because I used to drink 16 cans of Coca-Cola a day. I used to eat whole boxes of Little Debbie Snack Cakes, one or two of those, every single day. By the way, they were 10 for \$10. So it was very easy for me to just down one dollar's worth of Little Debbie Snack Cakes Swiss Cake Rolls watching *Seinfeld*. It wasn't hard. Yeah. So I understand the allure of having all of this really processed nasty carbage, as I call it.

But I think that's where the fat comes into play. When people

stop being so fat phobic, embrace saturated fat, take themselves some cheddar cheese and spread some butter on it and stick that in your pie hole when you feel like you've got a carb craving, it makes that carb craving go away. It really does.

And then one of the things I've been experimenting with lately is doing some fasting, some extended fasting. So if somebody really wants to kind of get off of this and get going into ketosis, there's no better way to kick start your body into ketosis than by not eating for about three days. I know that sounds daunting.

But as somebody who's done 17 days and 12 days, I've done a lot of extended fasts lately, it's really not as hard as you might think. And these are strategies that I think could help a lot of people. We just have to get over a lot of the nonsense that we've heard out there about, oh, you have essential whole grains that you need to be consuming in your diet.

Back to my father-in-law, my mother-in-law's feeding him oatmeal every single morning because, "Oh, he needs to have a healthy breakfast." Well, that healthy breakfast is making him more hungry. And then he's not eating fat with that, so it's making him even more hungry.

It can be frustrating trying to help people understand this and know what it takes to get into ketosis and the benefits that they'll feel once they're there. It's just those few days of a little bit of pain, especially coming from a standard American diet, to shift over. I just wish I could give people the feeling of what they feel like on the other side of it all.

Dr. Jay: Yeah, and it goes back to one of the lies, too, of the whole complex carbohydrates, right? Skip

the simple carbs, the candy bars and the soda, and go after complex carbs. But just like William Davis and the Wheat Belly, I love how he says bagel butt and wheat belly, uses those terms. But 75% of wheat is amylopectin, which is basically sugar. Your saliva breaks it down into sugar.

And so complex carbs doesn't mean it's better. A carb is a carb. I would throw that in there. From a clinical side of it, when I'm explaining to people about nutritional ketosis, ketogenic, and, okay, we've got to adapt. And it's going to be a little painful at the beginning for sure because you're coming out exactly what you were saying, one of the things that I like to do in this fasting state for a few days—and it depends on how long they can go before really eating— but I like them to have bone broth, whether it's chicken broth, beef broth. Is that something you'll do in your fasted state? Or is that something separate?

Jimmy: So I'm currently in a fasted state. Let's see, I'm in my fourth day. What I've been doing is kind of fasting a period of time, taking a day off, getting back on a fast for a period of time, taking a day off. So I'm currently in day four of my current incarnation of this fast. And, yeah, bone broth with sea salt is such great way to keep your electrolytes in balance. I tried just a water only fast one time, Jay.

And by day two and a half, I had this major splitting headache that was so painful I was like what in the world. And I talked to a few of my MD friends. They were like, "Duh, you had an electrolyte imbalance, dude." So I said, "Well, if I ever do this again, I'm going to definitely drink bone broth with some sea salt."

I'm also doing some other things, obviously plenty of water. I've

got my water right next to me right here. So I'm sipping that periodically, lots of that but also kombucha, which is kind of a good fermented tea, to keep your gut health going. And then I'm using a little bit of this exogenous ketone product, beta-hydroxybutyrate salts, for a little more energy in the midst of a fast. So there are so many little strategies that you can do. If you like coffee and tea, those are also okay to have.

I'm actually writing a book about this whole fasting thing with a fasting expert coming up in November this year called—what else?—Fasting Clarity. So we'll take kind of the same concepts we did in Keto and Cholesterol Clarity and apply it to fasting. But yeah, use the strategies that it takes. It's not about starving yourself. It's about using your body's ability to tap into your own body fat stores for energy.

And a lot of us, even lean people, have a certain amount of body fat on them that they could use for energy. I think this has really opened my eyes that we eat in abundance - yes, we all knew that - but we probably could survive a lot better than we realize on our own body fat if we just allowed our body to do that in this world of abundance, where I can literally walk and get to a food place within five minutes from my house. That's how easy food accessibility is for anybody. Especially here in America, food is everywhere. Marketing is everywhere. And so we're always bombarded by eat, eat, eat, eat.

And I think it's time to buck that trend and say stop, at least for a period of time, and see how your body does. And I think in the process of that it goes back to the principles of ketogenic we were talking about. You're trying to lower blood sugar. You're trying to lower

inflammation. You're trying to lower your insulin levels. All of those things are going to provide you benefits. And fasting is just another way to do that.

Dr. Jay: So I think of the analogy that I've heard before when you were just saying that, to really tap into our fat. I've heard a reference of we're a gas semi truck that's carrying gas to a gas station. And all of a sudden we run out of gas on the side of the road. We have this giant tank of gas that we can't access, but yet we're out.

And I've heard that in relation with when you're a sugar burner, you've got maybe 2,000 carbs you could burn, glycogen. But if you're fat, even if somebody is, what, six, eight percent body fat, they have probably 30,000 calories to burn at any moment. Is that correct?

Jimmy: I've even heard upwards of 50,000 for even a lean person. So, yeah, that's why these marathon runners, a lot of marathon runners, are gravitating towards this whole ketogenic message. And several of them are now breaking records eating in a ketogenic state and fueling their bodies with that 50,000 plus fuel tank while they're running their race and not having to use all the goos and gels and Gatorade and all this other stuff to fuel their performance.

They're able to go long periods of time because a sugar burner only has maybe 2,000 calories worth of energy on their body before they have to refuel. That's why you see all these runners putting the goos and the Gatorade and everything in their mouth periodically along the way.

Well, guess what? If you're a ketogenic runner, you have 50,000 calories at your disposal, so 25 times more than your competitor who's a sugar burner. And all

you really need to do is probably replenish with some water and maybe a little salt for electrolyte balance. But other than that, you're okay, maybe small, small amounts of the gel or Gatorade or something like that but not nearly to the level that their competitors that are sugar burners do.

Dr. Jay: Definitely. I think that's the new cutting edge athletic performance too. So I think a ketogenic diet, ketosis, nutritional ketosis, ketogenic, however you want to say it, I think that's definitely the wave of the future for not only athletic performance, not only for weight loss, but just in general improving health, dropping inflammation, which can be one of the most positive things towards your health, when your inflammation at the cellular level actually drops. So I get the standpoint.

You're kind of experimenting with some different fasting, breaking in and out. As you look at the ketogenic diet, let's say somebody's been in ketosis for a few months, is there a benefit to take a day and kind of have the carb day and then go back into ketosis and then do a fasting day? I mean do you find a benefit with a cyclical kind of change nature? Or do you think ketosis, generally, most days that's what we should be in?

Jimmy: So as somebody who is extremely insulin resistant, as a former 410 pounder that drank 16 cans of Coca Cola and whole boxes of Little Debbie Snack Cakes, I would say that cyclical version of ketogenic where I have a high carb day to bring the carbs up and get out of ketosis, is unnecessary for somebody like me because it's already freaking hard for me to stay in ketosis all the time because of my insulin resistance.

Now, somebody who's relatively

healthy and can basically cut their carbs and increase their fat and see ketones of two, three, four pretty easily, and it stays there, I'd say okay. For somebody like that that wants to use a cyclical, cycling the carbs approach for performance purposes or whatever their purpose is in doing that, I'd say it's perfectly fine for somebody like them.

But my caution in saying that universally, for everybody, Jay, is people like myself. I think most of the population's probably closer to me than that weekend warrior wanting to be a stud in the performance world, which is where I think carb cycling can be beneficial, possibly, for those kinds of people. But for me, I can very easily get out of ketosis just by having a little extra protein. I don't even have to go hog wild on carbs, just a little extra protein.

Let's say I go out to dinner with my family. And I have an eight-ounce steak instead of a five-ounce steak. Well that might be just enough protein to kick me out of ketosis. So I would say it's an individualized thing. Test and see how you do. And if you're always in ketosis, and you want to try this, I'm always for people doing N=1 experiments to see how things work for them. But I know for me it would not work.

Dr. Jay: Okay, that's a great explanation. Yeah, and from a clinical side, what I see with clients, some people do better. And when I say carb load, it's not eating bread and soda, it's the...

Jimmy: Sweet potatoes.

Dr. Jay: Yes.

Jimmy: Rice, white rice.

Dr. Jay: Just to clarify for listeners but also the people that don't seem to do well coming out and doing

kind of a carb day. They seem to do better if it's more of a higher protein day and then come back in. And it's almost like the body's just like in a ready to go type of ketogenic state.

Jimmy: Yeah, I would do a higher protein day just to get out of ketosis. But, again, it happens normally and naturally for somebody like me with the insulin resistance.

Dr. Jay: Okay, last question I want to ask you. What is one of your favorite snacks? And I'll share mine: lunch meat, no nitrates, obviously, I think it's Primal Kitchen, the new mayo with the avocado.

Jimmy: I love Mark Sisson's mayo. He's got some new salad dressings, too, if you haven't tried them yet.

Dr. Jay: Oh, no, I haven't. I'll have to put that on the list.

Jimmy: He sent me some. I was like, man, I'm fasting right now, dude! You're killing me.

Dr. Jay: So a slice of meat, mayo, a chunk of cheese, and sometimes I'll even put a slice of pickle. Roll it up, and it's like the meat, cheese, mayo rollers. I'll have those as snacks, super low carb. That's one of my favorites. What's a favorite of yours?

Jimmy: You're going to hate me because I think if you have to snack, you're not eating keto right. So I don't snack. I have meals that satisfy me so well that if I feel like I need to snack, then I didn't eat enough fat in that previous meal, if I feel like between meals I need to snack. I probably eat once maybe twice a day. And so if I'm snacking, I did something wrong in that previous meal that made me hungry. That said, though, to answer your question—

Dr. Jay: I was going to say, well said.

Jimmy: My go to would be nuts, almonds, raw almonds. Please do not get those ones roasted in the horrible oils. And you'll see it. Just turn it over on the back. It'll say roasted in soybean and/or cottonseed oil. Please throw that in the garbage can. Well, put it back if you didn't pay for it. But don't eat that. Get raw almonds.

Macadamia nuts are excellent. There's this new one that is even higher in fat, Jay, than macadamia nuts - I don't know if you've heard about this or not - called pili nuts. And I found this company called Barefoot Provisions that actually sells those. And they have 21 grams of fat per serving compared to 19 for macadamia nuts. And I think almonds have about 12 grams of fat, and then next to nil carbs. But it's literally a keto nut, pili nuts. Look them up online with Barefoot Provisions, incredible.

And when I'm traveling, that's my go-to. I'll bring stuff like that just to make sure I have something on hand. Usually when I travel short flights, three or four hours, I just fast. But if it's longer—and I've done some international trips to Australia and South Africa and the UK—those longer ones I want a little something more substantive than ketones and fasting. And there's crappy carbage all over the airplane. So I bring my own stuff. And that's where the nuts really come into play.

But I also love the idea that if you have a carb craving, get that big old chunk of cheese, spread some grass-fed butter on it. Stick it in your pie hole, and all the cravings that you have for carbs go away. So that would be my answer. If I ate snacks, that's what I would eat.

Dr. Jay: Awesome, pili nuts. More than a macadamia, that's great.

Jimmy: They are, man. I was

freaking out when I saw this. It was at one of these paleo conferences I go to. And I literally took the bag, and I was walking all over that floor and said, "Guys, you've got to try these pili nuts." I think they liked me that weekend.

Dr. Jay: I was going to say, you being quiet? No.

Jimmy: I know, right?

Dr. Jay: Jimmy, I want to thank you so much for taking time out of your full schedule to join me on the Chronic Lyme Disease Summit. You're such a wealth of knowledge. We really just appreciate you.

Jimmy: Thank you, man. And Lyme disease is something that a ketogenic diet can help a lot with. I know Tim Ferriss got Lyme disease. And he started implementing the whole principles of keto into his life. And it's helped him immensely. So

I have a heart for people that deal with this. And I definitely wish you well in your journeys.

Dr. Jay: Awesome. Well, as you've heard from Jimmy, a ketogenic diet is worth a look into if not a dive into. And it's important with Lyme disease and other mysterious illnesses that we look at the body as a whole, holistically.

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