EPISODE 257

The Keto Reset Diet: Burn More Fat & Become Metabolically Flexible – With Guest Mark Sisson

Shawn Stevenson: Welcome to *The Model Health Show*. This is fitness and nutrition expert, Shawn Stevenson, and I'm so grateful for you tuning in with me today.

This episode is so important and so special because we're talking about something that is hot on the streets, and by 'the streets,' I mean the Internet. Alright? And it is the ketogenic diet.

There are so many questions out there, and so many people are taking action to get on board with this approach because it works. It works for a lot of people, but it's also causing some big issues for a lot of people as well, and we're seeing some of the same kind of up and down falling off the wagon things happening for folks that were getting some outstanding results.

And so we're going to talk about what some of those pitfalls are, and how to do this right if this speaks to you. Because what today is all about, it's about options, and being - what you're going to learn today - metabolically flexible, alright?

So for you to have this option as something that's a go-to in your superhero utility belt, you need to learn from the best person around in the game, and that's who we have on the show today.

Before we do that, I want to give a quick shout-out to our show sponsor, Organifi. Head over to www.Organifi.com/model and you're going to get 20% off all of their incredible supplements, and green juice blends specifically, which is my favorite thing.

I take the go-packs with me on the road. I'm here in Malibu, California right now, far from home, but in my book bag, in my knapsack like Dora the Explorer, I've got my Organifi go-packs in there.

And I do this because this is how I get my bioavailable vitamins, minerals, trace minerals, and this is from earth grown nutrients.

This isn't like the synthetic stuff you get from- when I was growing up, I had Flintstone vitamins, alright? Flintstone vitamins. They taste yummy, but those are from synthetic sources.

It's just like do your cells even really recognize what those are? And I also remember even as a kid, when I'd go pee after having those Flintstone vitamins, my pee would be like Ninja Turtle green. Like it would be like the weirdest color.

Maybe not green. It would be like, 'Shawn, you're dying. How'd you make it?' It was more like neon yellow, alright?

So with Organifi we're getting a blend of very powerful green superfoods, and I think every single human being needs to be on a green superfood blend.

So we've got spirulina, which is clinically proven to increase something called stem cell genesis. It's a very rare nutrient called fikosianin, alright? You're not going to find that in Pop Tarts, alright?

So we've got fikosianin, we've got also a great source of magnesium in beta carotene. Plus they've got chlorella in there with chlorella growth factor, great for detoxifying heavy metals. We've got moringa in there, we've got ashwagandha.

It's just an incredible formula, and it actually tastes good, alright? That's the key. You have to keep that in mind because these green blends out there, some of them taste like what they sound like. They taste like swamp water, alright? But this one actually tastes amazing.

So head over, check them out, www.Organifi.com/model and you're going to get 20% off. This is kid-tested, mother-approved. My kids love this as well. Do yourself a favor, and make sure to head over and check them out.

On that note, let's get to our topic of the day and our special guest, the one and only Mark Sisson. And he's the best-selling author of 'The Primal Blueprint' and several other bestselling books in primal and paleo living.

If you've heard the term 'primal,' it's probably come from this guy. His blog, www.MarksDailyApple.com is one of the most visited health information websites on the Internet, and Mark's efforts to promote primal living is also extended to a health coach certification program, a line of healthy kitchen condiments, and nutritional supplements.

You'd better believe I have his condiments in my home. The mayo is bananas, and we'll probably talk about that today. And he also has a chain of fast casual primal style restaurants, alright? So we're taking the fast food and turning it upside down, and providing real food for folks.

And Mark is also a former 218 marathoner and a fourth place finisher in the Hawaii Iron Man Triathlon, and he lives in Malibu, California where we're hanging out now. And I'd like to welcome to *The Model Health Show*, the one and only Mark Sisson. How are you doing today, man?

Mark Sisson: It's great being here, Shawn.

Shawn Stevenson: I'm very, very happy to connect, man. Thank you for having me at your beautiful place here.

Mark Sisson: My pleasure. I'm glad you got a chance to experience some of the Malibu lifestyle.

Shawn Stevenson: Yes, yes, yes definitely. Definitely. So when I was driving out, of course I was like thinking, 'Malibu Barbie, Malibu Ken.'

But you're not actually from Malibu, come to find out. I just found out in your book.

Mark Sisson: No, no I'm from Maine originally. It's about as far away from Malibu as you can get, I suppose.

Shawn Stevenson: Yeah, yeah.

Mark Sisson: I just- I'm a fan of warm weather, and I'm a fan of warm water.

Shawn Stevenson: Right, right.

Mark Sisson: And of a tropical environment. And so-

Shawn Stevenson: What a concept.

Mark Sisson: Yeah, really. But you know, it's interesting because my background as an endurance athlete is one of the reasons I wound up in California.

I literally spent a decade training 100 miles a week, putting on ten pounds of clothing to go out and run in five below weather training in New England. And it just got a bit much for me, you know?

I thought I'd head to warmer climates where I could hone my running skills and craft, and that's kind of what got me out here thirty plus years ago.

Shawn Stevenson: Wow, that's an incredible story. So in kind of researching and reading your book, you hit the ground running literally with all of this endurance type of training.

Mark Sisson: Yeah.

Shawn Stevenson: So what was the inspiration for you getting into that style of exercise? And how did you transition to what you're doing today?

Mark Sisson: Well so I was a scrawny kid. I couldn't put on any muscle, I was too small to play football, or baseball, or basketball, or hockey which is big in Maine.

And I literally sort of gravitated to running because it was an easy way to get home from school quickly. I could actually run home and get home faster than if I took the bus.

So I started it as a practical means of transportation, and shortly thereafter realized that it was a skill that I had, a talent that I had that would enable me to get on the track team.

So if I couldn't play those major sports, I could participate in track and field, and so I wound up winning the mile and the two mile in the high school events, and then parlayed that into a career in college as a track athlete, and then as a cross country athlete, and then eventually as a road racer racing 5k's, 10k's, marathons, and things like that.

But it was sort of a natural transition through the years to increase the amount of distance that I was running because it seemed like I wasn't very- I didn't have speed, but I had good endurance. So the longer the event, the better I was in terms of competing at it.

Shawn Stevenson: Yeah.

Mark Sisson: What's ironic is that a lot has changed since then. I'm now 64, I quit running competitively when I was 30, and I shifted away from endurance and more toward speed and strength, which was sort of like an unusual concept because you think, 'Once a skinny gone endurance athlete, always a skinny gone endurance athlete.'

But I was able to make that transition to the point where now I feel pretty confident as a strong, lean guy who performs pretty well in the gym, but also I sprint.

I play Ultimate Frisbee with 20-somethings and I can keep up with them most times.

Shawn Stevenson: Yeah, that's amazing.

Mark Sisson: You know, based on a shift in the type of work that I chose to do.

Shawn Stevenson: Now you made that shift initially though. This was kind of out of necessity, right?

Mark Sisson: Oh yeah, no I got so injured and beat up from the training for endurance sports. Some of it was in retrospect very obvious, you know?

You do that amount of- put that amount of miles on your knees, and your ankles, and your hips, and it has a negative impact.

So there was the overuse part of it, but also- and this was really what became kind of my life's work, was this discovery that trying to fuel all those miles with a high carbohydrate diet, with a lot of sugar intake because we assumed that the muscles needed to have a lot of sugar to burn, it was when you parse that sort of diet, you realize it's a highly inflammatory diet.

So I had a lot of inflammation in my body. I had arthritis in my feet that wasn't just the result of the running.

Shawn Stevenson: Right.

Mark Sisson: I had tendonitis in my hips, which wasn't just a result of the running, it was partly a result of the diet.

I had irritable bowel syndrome, I had an 'itis' if you will in my gut for like forty years that I thought was a direct result of my being a type A stress prone individual. Turns out it was largely a result of my highly inflammatory diet.

And I could go on with an even greater litany of all these maladies and diseases that I had that were a result of how I chose to eat, and you know were basically killing me. And yet I was thinking that I was doing myself a favor.

I was putting in miles so it was good for my heart, I was eating lots of carbohydrates because everybody said complex carbohydrates was the way to go.

But when I got injured, and when I had to stop training, and then had to quit competing because of the injuries, that's when I kind of took a step back and reassessed and thought, 'You know something is wrong here. I'm trying to do all the right things, but these aren't leading me down this path of health, and fitness, and strength.'

They're leading me down a path of decrepit, old before my time, in pain constantly, digestive issues. It was terrible. It was a real slap in the face to be thirty years old and to think, 'Wow I've dedicated so much of my life already to this pursuit, and it's taken me down the wrong path.'

Shawn Stevenson: Right.

Mark Sisson: So I sort of re-dedicated my career to finding out ways that I could be that strong, lean, fit, healthy, happy, productive human with the least amount of pain, suffering, sacrifice, and discipline.

Shawn Stevenson: What a concept.

Mark Sisson: You know, and who knew? Because I mean you sort of think, 'Well no pain, no gain, right? And you must have to suffer, you must have to struggle to get all of these wonderful health benefits.'

And the answer is no you don't have to struggle, you just have to know some critical information and then implement it.

Shawn Stevenson: Right. And also with your dedication, it's just like if you're not getting the result, you must have to try harder.

Mark Sisson: Oh and that's classic, isn't it? Especially in the endurance community.

Shawn Stevenson: Yeah.

Mark Sisson: You know you race, and you don't have a good race, and you think, 'Well it must be because I'm not putting in enough miles,' and you're already beating yourself up with way too many miles.

Shawn Stevenson: Right.

Mark Sisson: I mean if I had to do it over again I would cut back, I would maybe 60% of the miles that I did, maybe less. I'd eat differently, I'd look at my recovery a whole lot in a completely different light, I'd pay much more attention to sleep as a major element of recovery, and I'd maybe pay more attention to- certainly more attention to the diet in terms of how it was promoting inflammation, and I'd have transitioned away to a diet that was anti-inflammatory in nature, and then ultimately which we now know, and is the essence of everything I talk about now, a diet that was contemplated to make me better at burning fat, and less reliant on glucose and sugar.

Shawn Stevenson: Right. That's exactly what I want to talk about now. Right now obviously there's this- and I mentioned this in the intro, ketogenic, it's hot. Right? The name is hot but this has been around a very long time.

As a matter of fact, we're talking even early humans.

Mark Sisson: Yeah.

Shawn Stevenson: Early versions of humans were eating this way.

Mark Sisson: Yeah.

Shawn Stevenson: So let's talk about what does a ketogenic diet actually mean?

Mark Sisson: Yeah.

Shawn Stevenson: And what are the kind of principles behind it?

Mark Sisson: Well to me, a ketogenic diet means a diet in which it promotes metabolic flexibility. It promotes primarily your sort of God-given factory setting at birth, which wants you to be good at taking your stored body fat and using it as fuel.

So 'The Keto Reset Diet' is about using a ketogenic diet strategy to train your body to be so good at burning fat that you don't need so much glucose, or glycogen, or carbohydrate as a substrate.

To train your body to be so good at extracting energy from fat that it can also take some of that fat and make a super fuel out of it in the liver which we call ketones, or ketone bodies, and that super fuel can be used by the brain, by the muscles, by the heart, and it's an endogenous fuel.

We make it ourselves, but we have to train our bodies how to do that.

And so the book is really about how do we train ourselves to become this metabolically flexible machine that's good at generating energy from stored body fat, or fat from your plate of food, generating energy from glucose if glucose is present, generating energy from ketones if ketones are the only thing around, and not so prone to tear into muscle tissue and become catabolic because your body is expecting you to have glucose, and if you don't eat carbohydrate to create glucose, then all of this cascade of hormonal events take place that are not pretty and cause issues with a lot of people.

Now I don't want to confuse your audience with that scenario, but basically if you go back and you think back two million years, humans are basically two and a half million years old. We evolved from lesser apes, but there's been about two and a half million years of human evolution.

By the way, hundreds of millions of years of evolution before that all leading up to this ability to consume excess calories. So we're wired to see a big thing of food- could be a grove of fruits, could be a mastodon that we just killed, could be some roadkill that some other animal got, but we're wired to eat and we're wired to overeat because the body was- in this crucible of evolution, we had periods of feast and periods of famine, and so during the periods of feast, you're wired to overeat.

The beauty of that is we are so adept at taking excess energy and storing it as fat on our bodies. Now almost to a fault today, right?

So many people are adept at storing fat. But our ancestral- our predecessors were also great at taking this stored fat, and when there was no food for a day, or two, or three, take this energy that we'd stored as body fat, and then put it back into circulation, burn it as fuel, and use it to live on for days or weeks at a time.

So it was this sort of elegant back and forth ability to store fat, take it out of storage and use it, and that's really the skill that we're trying to develop here.

We have the skill already, we all know we can store body fat, but many of us have lost the skill to be able to take that fat out of storage, and burn it as fuel, and reduce the amount of stored body fat on our bodies, and trend toward our ideal body composition, and take that energy and not have to eat a meal every four hours all day long, but to be so metabolically flexible and metabolically efficient that that energy is always there for us whether or not we're eating, whether or not we're eating enough.

That energy is always there for us in the face of a business meeting that gets in the way of lunch, or a trip across the country in a plane that doesn't serve food, or just choosing not to- 'I'll skip dinner tonight because I'm not hungry. I'm not hungry, why should I eat?'

Shawn Stevenson: What a concept is that, too?

Mark Sisson: What a concept, right? And in developing this metabolic flexibility, we also- and like this is the greatest side benefit of all; hunger, appetite, and cravings get suppressed.

Shawn Stevenson: Right.

Mark Sisson: You no longer live your life from one meal to the next going, 'Oh lunch was great, but what's for dinner? Shawn, where are we going for dinner?'

You think more in terms of like, 'I've got plenty of energy, I'm building muscle or maintaining muscle, I don't get sick, I'm not hungry. A) Why do I need to eat right now? Or why do I need to eat because it says it's 6:30 and that's always dinnertime?

It opens up this amazing new freedom and flexibility to allow you to untether yourself from hunger, and appetite, and cravings.

Shawn Stevenson: Oh man, this is- first of all, I'm hungry. Second of all, this is really powerful because I would liken this to- in accounting class, I remember a concept called LIFO FIFO.

Mark Sisson: Yeah.

Shawn Stevenson: And LIFO is last in, first out. And if you're constantly eating carbohydrates, your body is not going to do that work, all the work it has to do to go break down fat and use it for fuel. It's going to jump right to those carbohydrates.

Mark Sisson: As long as you're continuously supplying fuel to your body, the body goes, 'Why do I need to tap into my storage stuff? I'm just getting regular supplies of energy all day long. I don't need to burn off body fat.'

So this is one of the basic tenets of a modern lifestyle, is that we've had this assumption that we need to have carbohydrate to live, that the brain needs carbohydrate- which it converts to glucose, which we know is blood sugar or blood glucose.

That the brain then requires a ready and steady supply of glucose all day long, sometimes 120 grams a day for the average sugar burner, and that's the term that we use for people who are really good at burning sugar and not good at burning anything else.

If that's the path that you go down, and you live that life, which 99% of people do these days, then yes you always need to be constantly refilling that glucose tank to be sure there's enough glucose for the brain to operate.

Now how you train yourself out of that paradigm is to gradually restrict the amount of glucose, the amount of sugar, the amount of carbohydrate that you take in, and force your body to go, 'Hm, there's not going to be a lot of glucose around for the next couple of hours, or maybe the next couple of days, or weeks.'

So we have to tap into that ancient wisdom that is in the DNA, we have to flip on genes that build more mitochondria because mitochondria are these little powerhouses of every cell where the fat gets burned.

So when the body says- recognizes there's not going to be a lot of glucose, it says, 'Let's make more energy from the fat. And in order to combust that energy, we have to build more mitochondria.'

So it's an amazing response. We call it mitochondrial biogenesis, the manufacturing of more mitochondria.

It happens as a result of the signals that you're giving your body from the types of foods you choose to eat.

It's so elegant, and so beautiful, and so perfect, but it requires an adherence to an eating style that suggests that you have to eliminate or dramatically reduce carbohydrates, you have to eat healthy fats, not unhealthy fats, and there's a distinction, and quality sources of protein.

But as long as you're providing enough protein for your body to maintain muscle, and build more muscle, and make enzymes, it's not that much, by the way. It's not that much protein on a daily basis.

As long as you're providing enough glucose that the brain doesn't have to get too antsy. And you can go down to zero glucose, but we're not suggesting that, you can go as little as fifty or sixty grams of carbs a day to make the glucose.

Then you're forcing- and then make the difference up with fat, with the healthy fats.

Then you're creating a situation where the body is- it knows exactly what to do. You don't have to cajole it, or take any meds, or do any surgical intervention. The body knows exactly what to do.

It says, 'We're going to take a triglyceride,' which is a form that fat takes throughout the body, 'we'll strip off the glyceride- the glycerol part. We'll make glucose out of that. We'll take the three fatty acids, we'll combust those in the muscles, and we'll use that for energy. And if we have more than we need of that, we can send the rest of them to the liver and the liver can make ketones, and then that can be sent to the brain to fuel the brain and offset the need to take in any form of carbohydrate to make glucose.'

It literally becomes a closed system that you could go- if you train yourself to do this appropriately, and this is what we talk about how to get there, you could go for days without eating, and I'm not even recommending that, but people choose to do it all the time. It's called a fast, right?

You could go for days without eating, and maintain muscle mass, create these ketones to fuel the brain, and have- actually many people would report greater energy during this phase, and have energy to get through the day, and have more clarity, and mental clarity, and more productivity.

It's like it's almost unbelievable that you could access this state, and yet it is like the default state of human beings.

It is what we're wired to do if we give ourselves the right training, if we send the right signals to our cells.

Shawn Stevenson: Yeah, absolutely. I was just wanting to ask you about specifically how is this actually good for your brain?

But one thing just popped in my head, which is if you think about- you know we talked about our evolution, we didn't really even have this kind of access to these carbohydrates in the first place.

Mark Sisson: No, that's the irony. People think today, 'Well you know, you need carbs to live, and especially if you're an athlete you've got to get 500 carbs a day.'

And you know, looking back over human history for the most part, we did not have access to a lot of carbs, and what carbs we did have access to were typically very- what we would call low glycemic index, they were locked in a very fibrous matrix.

So any form of carbs that you got were accompanied by a lot of fiber, which is a great thing. It's a good thing for digestion and for feeding your gut bacteria, but that's not what we face today.

In modern society with the standard American diet, we've got access to cheap carbs that convert to glucose almost immediately in the bloodstream whether it's processed grains in the form of wheat flour, and corn flour, and things like that, or whether it's the pastas, and the cereals, and the breads, and the cakes, and the pies, and the candies, and the sugars, and the sweetened beverages, and all of the forms of sugar that we take in.

By the way I use the term carbohydrate, and sugar, and glucose sort of interchangeably. Carbs turn into glucose in the bloodstream to the extent that a bowl of Skittles and some whole grain bread kind of have the same glucose impact in the bloodstream.

The body doesn't care where the glucose came from, it just sees it's glucose and recognizes it as blood sugar.

That dose of glucose causes a rise in insulin because in the average human body, there's only ever about five to six grams of glucose in your entire bloodstream at any one time. That's like a teaspoonful of glucose.

Now if you think about how much sugar we take in, if we're consuming liters of Coke or soft drinks in a day, and we're consuming lots of bread, and pasta, and cereal, and Eggos, and waffles, and toast, and sandwiches, and it adds up.

And yet the body doesn't want more than five grams in the bloodstream at a time. And the body takes amazingly evasive measures to make sure that the amount of glucose in the bloodstream does not get too high.

It raises insulin and then that insulin drives the excess glucose into the muscle cells and stores it as glycogen, but in most people the muscle cells are like, 'We're full. There's no room at the inn. Get out.'

So the muscles become insulin resistant. They become resistant to the signaling of insulin.

So the body goes, 'Well where do we- how do we get rid of the excess glucose? Well let's store it in the fat cells.'

The fat cells remain insulin sensitive for a lot longer in most people, and that's how people get obese. They get these excess nutrients, in large part which are carbohydrates, they're glucose, get shunted into the fat cells.

When the fat cells get full, they can become insulin resistant as well, and the fat cells can even say, 'Whoa we're like a huge balloon about ready to burst. No more room here,' and that's when the real danger starts.

That's when the sugar accumulates. That's when the glucose accumulates in the bloodstream, and that's when you've got type 2 diabetes, that's when you start to get the neuropathies, the retinopathies, the amputated limbs, the loss of circulation, and all of the nasty stuff that comes with type 2 diabetes.

And it's all a result of putting too much sugar through a system that can't handle that amount of sugar.

Shawn Stevenson: Right. Simply wasn't designed.

Mark Sisson: It was not designed to handle that amount of throughput of sugar. It was designed to have a little bit of sugar in the form of fruit.

By the way, fruit for the most part is fructose, and fructose doesn't even get converted to glucose that much. Fructose typically goes to the liver where it's either stored as glycogen if there's room, or it becomes triglycerides.

And if it becomes triglycerides, in the context of evolution it gets stored as fat. So if you think about ancient humans at the end of the growing season coming into winter and the scarcity of food in the winter, it makes total sense that eating a lot of fruit which turns to triglycerides and gets stored as fat would be the perfect way to fatten up for the coming scarcity of food.

Shawn Stevenson: Yeah.

Mark Sisson: It's so elegant. When you think about evolution and you think about how we survived these long periods of not eating a lot of food.

It's not that elegant when you think about our access to unlimited amounts of food today.

Shawn Stevenson: Right. That's crazy, crazy you put it in those terms.

Now with the ketogenic approach, there's- and I just saw this the other day, I was watching TV and there was some random- this is why I don't watch TV that often.

It was a drug commercial and they were like, 'You know if ketoacidosis occurs,' and I'm just like, 'Huh, people are going to confuse these two things.'

So let's talk about the difference with ketoacidosis.

Mark Sisson: Yeah, okay so first of all the idea that the body can make ketone bodies by itself. So we don't need an outside source of fuel or food to make ketones. We can make it through stored body fat.

So the body has this opportunity to make this super fuel in the liver, and over time when you restrict carbs enough, the amount of ketones that the liver can make increases.

In fact the liver can make up to 150 grams of ketones a day. That blows my mind because that's like 700 calories worth of ketones. That doesn't even count the fat that we're burning in our muscles.

So the body has this amazing ability to make these ketone bodies. The body also has this sort of innate knowledge that it can take the ketones and burn them at a rate that makes sense.

So there's a tendency not to overproduce the ketones, right? So as you become more and more fat-adapted and keto-adapted by virtue of restricting carbohydrates, you make more ketones and initially the muscles will use the ketones in addition to using the fat, but as the muscles become fat-adapted, become more metabolically flexible, as the muscles increase the number of mitochondria that burn fat, that muscles go, 'We don't even need ketones. Send the ketones off to the brain.'

So the ketones that are made are then mostly used by the brain. Now the brain doesn't have this huge swing in energy demands throughout the day.

If you go to the gym and you do a heavy leg day, your energy demands in your legs go from like 1x to 15x or 30x, right? While you're doing that workout you're going to burn 1,500 calories in that workout, right? But that's all going to happen in your legs.

The brain doesn't have that sort of wild swing. The brain just sort of has a steady state usage all day.

When the body becomes good at making ketones and the brain becomes adept at using ketones, then the signaling process and the feedback loop goes, 'Hey you know what? We'll just make enough ketones for the brain throughout the day.'

And so over time people have been really cutting their carbs way back for long periods of time, and had been in what we would call ketosis, are actually producing very few ketones.

They're just becoming so efficient they only make the ketones that they need. They don't overproduce the ketones.

Now people who are new to a ketogenic diet, the first couple of days or weeks the body is going, 'Whoa, what's going on here? You're restricting glucose. We're not really ready to burn a lot of fat because we haven't built that metabolic machinery yet. But we're going to make ketones because we know how to make ketones, so we'll make a lot of ketones, and we'll overproduce ketones.'

So the early days of being in ketosis people will go, 'Oh I took a blood ketone test, and my numbers are really high, and I'm really succeeding at this thing,' right? Or people might use the urine strips and say, 'I'm peeing purple. It's great, look at how purple this thing is.'

It means that you're peeing out the ketones. You're making so many ketones, the body isn't using them.

Now some people might say, 'Well that's a good thing because you're wasting energy. You know, if I want to lose weight, I want to spill out these things that could be burned as energy.'

On the other hand if you want to be metabolically flexible and efficient, you don't want to waste energy. And from an evolutionary standpoint, wasting energy is the worst thing that any animal can do because energy is expensive, and you want to hold onto it. That's why we store fat.

So over time you make these ketones, and there's a regulatory system in the body whereas the brain's ability to use ketone improves, and as the muscles' requirement for ketones subsides, you reach this nice little homeostatic level of ketone production.

Now to further add a level of interesting element to it, shall we say, insulin turns off ketosis. So if you take in an extraordinary amount of carbs- not even extraordinary, if you take in like forty grams of carbs in one meal, the body will go, 'Hey that's a lot of sugar. We don't need to make ketones, let's stop ketones immediately.'

So that amount of glucose causes insulin to rise up because it's more than the bloodstream can handle. That insulin then cuts off the production of ketones. So it's a beautiful kind of system here, right?

Now there is an issue when the body overproduces ketones. If the body produces ketones, and makes more and more ketones, and doesn't know how to use them, and hasn't built a metabolic machinery, if the ketones accumulate in the bloodstream at a higher and higher rate, it causes the pH, the acidity of the blood to increase.

The pH goes down, the acidity goes up. So this is a condition known as ketoacidosis. It happens in rare instances with type 1 diabetics who cannot make insulin, and so if they don't eat for a long period of time and the body starts to make ketones, it not only makes ketones, but whenever the liver is making ketones, it makes a little bit of glucose too.

So now you're making ketones and you're making glucose from not having eaten, but both of those cause the acidity of the blood to increase, which is a dangerous condition, and can be deadly if not controlled.

Now if you inject a little bit of insulin into that type 1 diabetic, it comes right back down, everything is fine.

So it's dangerous for type 1 diabetics who have not eaten regularly, who have not become keto-adapted, who don't have access to insulin. But anybody who has- who makes any amount of insulin endogenously, whose pancreas makes any amount of insulin, that is a zero issue.

There is no issue with this ketoacidosis. It's completely a positive negative feedback system that stayed in check.

The other group that would be negatively impacted by this is some of the people that take the drugs that you saw on the TV show apparently, and let's just say severe alcoholics who have issues with their livers, and there's a problem there.

Shawn Stevenson: Right, right. You know what's so interesting? And you didn't know I was going to ask you this next, I was going to ask you are there any populations of people that this wouldn't be ideal for?

And so that's a couple of them. Is there anybody else that might want to be a little bit more mindful when they're attempting to take on a ketogenic approach?

Mark Sisson: Sure. So the way I answer that is we're all wired to be able to benefit from some sort of a keto reset, from some sort of a reduction of carbohydrates and improvement in the efficiency of our energy systems; this metabolic flexibility that we talked about.

So virtually everybody is kind of wired to benefit from that. Now some people are based on how old they are, how much metabolic damage they've done to themselves over a lifetime, the medications they're currently taking because of the damage they've done to themselves over a lifetime, based on sex.

Some women have different hormonal cycles, and some of those hormonal cycles have been impacted by the damage they've done to themselves over a lifetime.

And so those are cases where I would say if you want to engage in this keto reset, share this information with your physician, and just say, 'I want to take advantage of this whole fat burning thing that's the new big thing. I want to do it under your supervision, so I want your blessing, and I would-'

I guarantee you'll find a physician who will be willing to take that on. It might not be your current physician, but you'll find one that could do that.

Shawn Stevenson: Exactly, yeah.

Mark Sisson: You know and then it's a matter of being just smart about how you do it, and stair stepping your way in. I wouldn't take anybody and say, 'We're going to go all in. You're going to go cold turkey on carbs, and you're not going to have- you're going to go from your 350 to 600 grams of carbs a day down to 20 grams of carbs a day. And it'll hurt for a couple of days, Shawn, but once you get past it, it will be fine.'

Well you know, that's not the way we like to do it. That's a real shock to the system. So we like to make it as comfortable, convenient, and stair step people into it.

We want to be sure that you're good at burning fat before you earn the right to go into full ketosis.

So we actually have a process, it's 21 days to reset your metabolism first, and then there's literally like a midterm exam in the book that you have to pass. You have to get a 75 or more on this midterm exam to earn the right to go keto.

And when you- and the exam is basically questions like, 'How do you feel in the morning? Can you go past like 10:00 or 11:00 in the morning without having breakfast and not get hangry, or not get moody or depressed?'

Shawn Stevenson: Yeah.

Mark Sisson: Or have lightheadedness. If you can do that, then it's a sign that you're good at burning fat. You're waking up burning fat, you don't need as much glucose to get your day off to an arousing start.

Can you go to the gym and do a workout and not have a pre-workout meal or a post-workout meal and be fine?

And there's a reason that we actually encourage that as the best way to work out. Other questions, 'Are you getting enough sleep?' Because sleep can interfere- or bad sleep can interfere with your ability to become good at burning fat. When you don't sleep, that's a stressful situation.

It creates this whole feedback system that causes the adrenal glands to secrete cortisol, and that leads you down a path of storing fat, and burning more sugar, and creating more sugar which is completely antithetical to a fat burning keto lifestyle.

So what you want to do when you're keto is control stress hormones, and so a lot of that has to do with how you're sleeping. Again what sort of stress management practices are you incorporating in your life otherwise?

So we have this whole series of questions that kind of- like I say, you sort of have to pass, and once you pass it we go, 'Okay you're ready.'

It's almost like scuba diving. 'Okay you're ready to go on a deep dive now because you've done all the basics.' Right?

Shawn Stevenson: You know, I was going to ask you- and this is bananas how you're doing this.

Mark Sisson: Bananas are not keto, by the way.

Shawn Stevenson: No kidding? No kidding? So- and even when you were talking about it earlier, and just the fruit that we have access to, and you know some folks are eating twenty, thirty bananas a day. It just blows my mind. But you know, again-

Mark Sisson: No judgment.

Shawn Stevenson: Right, no judgment. No flex zone here. But I was going to ask you what are some of the major pitfalls that people fall into? And actually I want to get more into that, because a lot of people take this on and something happens.

So we're going to talk about that right after this quick break, so sit tight, we'll be right back.

Alright we are back and we're talking with the primal superhero himself, Mark Sisson.

Before the break we were talking about some of the big pitfalls that can happen when people take on this ketogenic approach.

Again there's a lot of different protocols out there, a lot of different programs, but they're missing out on key parts here because we want to make sure this is something that is attractive to you, that you get the right information, and that you're aware of the places that you can fall a little short and maybe kick yourself out of ketosis, or something even worse.

So let's talk about some of those pitfalls, and the first one I want to talk about is the stress component.

Mark Sisson: Sure, well as I said, stress is devastating throughout the body for a lot of reasons, and it's almost- if you looked at lifestyle factors and reasons that people get sick, bad diet is right here, stress is like right below that, and the inability to manage stress is a huge component of- it's what we call the etiology of disease.

So you could talk about the stress component of some autoimmune diseases. You could talk about the stress component of type 2 diabetes. You can talk about the stress component of obesity in general, and metabolic syndrome.

What happens under most conditions of stress- and by the way, stress is not generally a bad thing. I mean you build muscle as a result of stress, which would occur in the gym.

Shawn Stevenson: Exactly, hormetic stress.

Mark Sisson: Yeah these are hormetic stressors, these are acute stressors that when controlled actually cause the body to respond positively.

But- and the best example I'll give you is that when I was a runner, the occasional hormetic stress was going to be contemplated to make me better at what I was doing.

But doing the same thing day in and day out, fifteen to twenty miles a day every day, ultimately destroyed me because all it did was accumulate damage. It was an accumulation of stress.

So when we talk about what happens to the body under stress, the biochemistry of it is that there's a signal sent from the brain to the adrenal glands to secrete hormones.

Adrenaline, norepinephrine, epinephrine are the common ones that we think about, but cortisol is this sort of long-term stress response that has interesting consequences.

So when you're under stress, the body secretes cortisol, cortisol tears down- it tears down muscle tissue first of all, so that the amino acids in the muscle can be sent to the liver to be made into glucose so the brain can have more glucose and the muscles can have more glucose to run fast.

It basically shuts down a lot of bodily functions. So cortisol suppresses the immune system. Cortisol from the perspective of evolution would be like, 'Okay why would I invest in resources that might save me in a year or two with an immune system when I might not live the next hour or two?'

Cortisol basically shuts down a lot of reproductive processes. Again the body goes, 'Well why would I invest in reproduction when I might not even live the next couple of hours?'

So cortisol decreases the uptake of calcium by bones. Again you want to divert the calcium to the electrical channels that are causing nerves to fire and hearts to beat rather than building a structure that again will have no use if I don't survive the next couple of hours.

So cortisol has all of these sort of consequences that make sense in terms of a short-term event, like I'm being chased down the plains of Africa by a saber-toothed tiger. I've got to survive the next two hours.

And if it takes me a couple of days or weeks to repair the short-term damage, to improve the uptake of calcium by bones, to reset my immune system back to where it should be, then so be it. I just need to survive the short-term.

So that makes sense in the context of like these occasional traumatic stressors.

Now fast-forward to modern times, 'Oh my God, the bill is due. The mortgage payment is due. The noisy neighbors next door. The traffic on the way to work.'

All of these things that we take on as stress. 'My relationship isn't where it needs to be.' 'I'm worried about the kids.'

We all find ways in which to generate this same signal in our brain that causes the same secretion of chemicals that has the same devastating effect, except now it's not just once in a while.

Shawn Stevenson: Right, it's chronic.

Mark Sisson: It's chronic. It's all the time.

So one of the effects of cortisol is that it encourages the deposition of fat, and it also encourages what we call gluconeogenesis, the manufacturing of glucose by the liver.

So if you're trying to burn off fat, and yet you've got these stress hormones that are causing you to make more sugar in your liver, and also causing you to want to retain the body fat that you already have and not take it out of storage and burn it, those two things don't jive.

Shawn Stevenson: Yeah.

Mark Sisson: They don't go together, so we need to figure out ways to reduce stress.

So that's one of the things- that's one of the reasons that in the book we talk a fair amount about the fact that you could get all of the macros and still sort of be at a

plateau or not have the results you want because you didn't correct some of the other lifestyle factors that we need to address.

Shawn Stevenson: I love it. It is so important but it's so overlooked. To be included in a 'diet book,' it's really profound and super important, like I said. But you know- and I just want to encourage everybody, this is a call to action in a way that if you're going to- this approach is incredibly attractive because it works, and it's something that your genes expect, but you have to mind- if you're working 100 hours a week, and you hate your job, and you're struggling with your relationships, or whatever the case might be, if you're going to take this on also take on the other part, the stress management.

Mark Sisson: You have to, otherwise- you know, it's not like it's a complete waste of time, but you might not get the results that you want, and that's really- you know, if we're taking on this fairly significant lifestyle change, we want the results. We want to get the best results possible.

So you asked about some other issues or complications with some of the ways to do keto. I say in the book there are a lot of ways to do keto wrong.

There's a couple ways to do keto right, I've got one of them, but one of the ways that people do keto wrong I think is they assume that fat- they read all about the benefits of fat, and how fat becomes this amazing macronutrient, and they start to increase the amount of fat like way beyond what should be a realistic amount.

And then they complain that they're not losing weight.

Well at some point you still have to create a deficit. You have to burn off more fat than you store. So even if you aren't storing any more fat- and that happens a lot.

People will say, 'Gosh I'm eating 3,500 - 4,000 calories a day, I'm not gaining weight. This is awesome. I'm not burning off, I'm not losing any weight either. Why is that?'

Well because you're giving yourself so much energy in the form of food on a regular basis, you haven't created the need for the body to take your own fat out of storage and burn that.

So you've built this metabolic machinery, and you've done the work, and you've built the mitochondria, and you've become good at burning fat, and you've become good at manufacturing ketones, you just haven't created the deficit that requires your body to go, 'Hey you know what? We could go days without eating and we wouldn't be phased one bit because we're so good at burning fat, we're so good at burning ketones and making ketones, that we've got the systems in place, but you have to create that deficit.'

So a lot of people who go keto, they might hit a point where they stop losing weight, or they plateau because they're still assuming that they can get away with eating a lot because they're keto, right? So that's one thing.

Another thing that people do sometimes is they eat too much in the way of protein. You know, we don't need that much protein. If you look at the body's requirements in general for protein, thirty to forty grams a day is probably used for structural- for rebuilding muscle, and connective tissue, and making some enzymes.

You don't need much beyond that, and so even if you're like a bodybuilder or a weight lifter and you say, 'Well you know, I'm doing all this hard work. I must need more protein.' I'm going to suggest you probably don't need more than 120 to 130 grams a day.

And yet there are people who are doing keto who are getting 150, 160, 180 grams a day of protein.

Now what happens to that excess protein? It gets converted to sugar in some people. Again, the process of gluconeogenesis, it gets converted to sugar and sort of gets counted as a carb almost when you're trying to reduce carbs.

Shawn Stevenson: Wow.

Mark Sisson: So there's- we have an equation for figuring out how much protein you need on a daily basis.

And by the way, the interesting thing about protein is that you don't need it meal to meal. You don't even need it day to day. As long as on a weekly basis you're getting X amount of protein, the body has all these ways in which it can serve amino acids and has this amino acid pool, this amino acid sink, this ability to recycle amino acids.

And when we get too much and take in too many amino acids, we pee them out in urine. We deaminate them and get rid of them. Well that's a waste.

So one of the things that people tend to do initially on keto is they say, 'I can eat all the fat I want, and I can eat lots of protein, as long as I cut my carbs down.'

You're not going to get the best results if you take that approach.

Shawn Stevenson: Wow, so with that said, what are the types of fats that we get to eat? Now I want to preface this by saying the beautiful part about this is it's really actually difficult when- the fats you're about to share, it's difficult to eat a lot of them because you're so satiated.

Mark Sisson: Yeah.

Shawn Stevenson: So it's a lot harder to get in those 4,000 calories or whatever. So you'll find yourself at a natural place where you don't really desire to eat that much in the first place, so that calorie deficit becomes easier.

But also I just want to say something too, it flies in the face of what- I was literally taught this in the university setting, that if you don't eat breakfast your metabolism is not even on.

Mark Sisson: Yeah, the most important meal of the day.

Shawn Stevenson: It doesn't- if you're alive, your metabolism is on.

Mark Sisson: Yeah.

Shawn Stevenson: But I literally- this was gospel to me.

Mark Sisson: I know, it's a scary thing. And most people who are really into keto, or a lot of people I should say, possibly most only eat two meals a day because three just feels like too much.

It just feels like it's way too much food. Because I wasn't that hungry for the first meal, I'm definitely not hungry for the second meal, and forget about it on the third meal.

So a lot of people choose a compressed eating window. I get up in the morning, I have a cup of coffee at 6:30 - 6:45. I start- I read two papers, I do a couple of crossword puzzles and things like that to get my brain going for the day.

Then I go to work, I might break at 9:30 or 10:00 to go do a workout. I do the workout clearly fast, I don't eat after the workout, and I don't eat my first meal until 1:00 in the afternoon, and that's typically a salad with some kind of protein on it and a healthy fat on the dressing.

And then I eat my last meal of the day around 7:00, so I have a six hour compressed eating window. That's the time that I'm taking in calories. The other eighteen hours is when all the good stuff happens in the body.

That's when the body goes, 'Hey I'm going to burn off some stored body fat. I'm going to repair some of the damage to the cells, I'm going to do some housecleaning in the cells. I'm going to actually consume some of the damaged proteins, some of the damaged fats. I might do some repair to the DNA, because all of this stuff happens in the absence of calories.' Right?

So that's the concept of intermittent fasting, the concept of reduced or compressed eating windows has become kind of the new way of looking at fuel, and energy systems in the body, but you have to have done the work to build the metabolic machinery.

Because once again, hunger just takes everything off the table. Hunger destroys this whole concept.

The fact that you can create a system that so suppresses hunger that you have to sometimes think, 'Wow geez, I haven't eaten yet. It's 4:00, I haven't eaten yet today. Maybe I'd better eat something.' Right?

'I could go all tonight or tomorrow, but I'll eat something.' It's a whole different concept from being tied to this three meals a day, breakfast is the most important meal of the day, if I don't eat breakfast then I'm off to a bad start, and my metabolism won't fire.

By the way, one of the things that I find fascinating- and this is part of my research in this book. This sort of assumption that we need to build a fast burning metabolism. Like that's what I want is a fast burning metabolism, right? Where did that come from?

Because that's so- again antithetical to conservation, to conserving energy, and yet most people would say, 'What's the most amount of food I can eat at this meal and not gain weight and not feel like crap? You know, what's the most amount that I can eat?'

Shawn Stevenson: Right.

Mark Sisson: Most people- a lot of people, I go to the gym and I see people on the treadmill. Like 450 calories read out on the LED, or 600. 'Dude you're like sweating and struggling and suffering. Why do you do that?' And you know what the answer is? 'Because I like to eat.'

Shawn Stevenson: Oh.

Mark Sisson: Are you kidding me? Dude you would rather put yourself through that amount of misery just so you could take a couple more bites of something you probably shouldn't eat in the first place? And yet this is how people tend to kind of orchestrate their day and live their lives.

There's this inherent gluttony in Americans in particular. Yes we're hardwired to overeat, but that's a survival mechanism from two million years ago. Yes we're hardwired to be able to burn that off, but we have to train ourselves to do that.

So I just find it fascinating that people would say, 'So I'm in the gym mostly to build a fast metabolism. I want to waste food. I want food to pass through me quickly. You know, I don't want to absorb it, I want to be able to eat as much food as I possibly can.'

And look, I enjoy food as much as the next guy, in fact I make a bold and brave statement. I mean look, I enjoy every bite of food I put in my mouth. I don't eat anything that doesn't taste great, you know?

Because I want to, and I deserve it, it's one of my great pleasures in life.

Shawn Stevenson: Yeah.

Mark Sisson: But I also know when to cut it off. I know when I'm no longer hungry for the next bite.

You know, there's a certain- I don't know, intuitive understanding that you know, there's going to be food whenever I want it, so I don't need to finish my plate just because there's more food on the plate.

I can easily wrap it up, take it home, I can easily share it with my partner, I can easily give it away to whatever. I could easily just throw it down the disposal. I really don't need to eat everything that's on my plate all the time.

That's one of the things I've noticed about myself over the past year and a half of doing this, is I get by on probably 30% to 35% fewer calories than I thought I needed, certainly than I used to eat even as recently as four or five years ago. And again it's so-

Shawn Stevenson: It's conditioning. You know, I remember when I was a kid same thing with, 'If it's on your plate, eat it all.'

Mark Sisson: Yeah.

Shawn Stevenson: You know? And instead today, sometimes we'll use ourselves as the garbage disposal or the trashcan.

Mark Sisson: No, I mean it's- and again, like you go to somebody's house, and they serve you this big piece of cheesecake and your brain goes, 'Well they must think that's a serving size, so I'm going to have to- I'll be fine, I have permission to finish that.'

You know? And somebody else might give you a tiny little sliver, and it's the same thing. 'Oh that's a serving size. I'll finish that.'

What makes the difference is how your brain responds to this food. So with a piece of rich creamy cheesecake, the first bite might be, 'Oh my God, that is so good.'

By the way, I'm going to partake in that. So that first bite might be a ten on a scale of ten. Then the second bite, it might be- it's an eight. Okay, I've got it, I got the tanginess, I got the sense of it.

By the time you get to the third or fourth bite, it's a five, or a six, or a four maybe, and now you're just- now we're just arguing over how much you can stuff down your gullet.

You got the sense of what it was, you got the sweetness, you got the tartness, you got the experience. Where does it end? Where does it stop?

So that's kind of a skill that we develop within this keto reset program is like understanding where that- where the satiety factor ends and you're just becoming a human garbage disposal and gluttonous.

And you know, sometimes nothing bad will happen from you having consumed that, it's not like, 'Oh my God, you've screwed everything up.'

It's just what's the point?

Shawn Stevenson: Yeah.

Mark Sisson: And if you cleaned up your act, you'll also get to the point where you go, 'You know what? I know that if I have more than say three or four bites, my heart is going to start racing, I'm going to start sweating, I'm going to start secreting some insulin, I'm going to start doing- I'm going to go back to a pattern that is uncomfortable to me, and it's going to last for a couple of hours.'

So is three extra minutes of gluttonous pleasure worth four or five hours of like, 'Oh jeez, I probably shouldn't have done that.' You know?

Because you become so attuned to nutritious nutrient dense good food. Does that makes sense?

Shawn Stevenson: Yeah, absolutely. I'm just thinking about when- I think we just created a new tee-shirt here, 'Human Garbage Disposal,' like for the holidays. You know put that shirt on and just let it be known this is what you're going to do. You know?

It's so fascinating. And before- and I don't want to forget this. When you mentioned about training and then essentially fasting until your feeding window after that, it immediately reminded me of something I came across awhile back about human growth hormone being upregulated with that.

Do you know anything about that?

Mark Sisson: Yeah so of course. So that's another just side benefit of not eating, is human growth hormone and testosterone get pulsed up a little bit.

The way I utilize that in my training is that's why I train fast. So when you do- let's say you do a heavy leg day, or you do a full body workout, MetCon type workout once or twice a week, the reason you're doing that is to get better. You're not doing it to beat yourself up, unless you love that kind of stuff and you might be a CrossFitter who goes in and does that every single day.

But- and I'm not picking on CrossFit, I'm just saying three days on, one day off. That's a lot of work, right?

So conceivably you're doing this because you want to get stronger. Well how do you get stronger?

Well you get this hormetic stress, this acute stress that we talked about earlier, you get micro tears in the muscle. It's all good provided you get this upregulation, this pulse of human growth hormone and testosterone, and that's what's going to cause the muscles to get stronger, and bigger, and bring the amino acids in to create the new muscle tissue or to repair the damaged muscle tissue.

Now one of the things that blunts this pulse of growth hormone and testosterone is insulin.

Shawn Stevenson: Yeah.

Mark Sisson: And so the concept of a post-workout meal- and again there's no right or wrong answer here, these are just choices.

Shawn Stevenson: Yeah.

Mark Sisson: So one choice in the old days, my old way of doing this would have been, 'Alright I just did a hard workout.' And it was like a ten mile run hard, or it was an eight times one mile on the track with a half mile rest in between, and I've exhausted all my glycogen.

Shawn Stevenson: Right.

Mark Sisson: And I've got to go run twenty easy tomorrow, easy being a relative term.

Shawn Stevenson: You've got to replenish.

Mark Sisson: So I'm going to go replenish my glycogen stores. So in replenishing my glycogen stores, to be able to do it again the next day, that was probably a smart move.

Now conversely in the gym you go, 'Well I did a heavy leg day. I want my muscles to repair.' I'm not going to repeat this thing tomorrow, because if I did it right, I won't even be able to do it for three more days. I'll move onto a different body part.

But you know what I mean? I won't be able to do it. I'll have done enough work that I'm so sore that I need to spend the time to repair.

So the last thing I want to do is blunt that hormonal response with the growth hormone and the testosterone by taking a post-workout meal. Because by taking a post-workout meal, all that's going to do is increase my glycogen.

But I'm going to build back glycogen anyway, regardless of whether I eat or not, I'm still going to replenish glycogen, it's just going to take a little bit longer.

But as long as I'm not going to do it tomorrow, then I don't care that it takes two days or three days, because I'll be at the same place in terms of glycogen if I do a hard workout, another leg set in three or four days, that I would have been had I done the post-workout meal.

But now by choosing not to do that, I'm taking advantage of this ketogenic type response, which is a pulse in growth hormone and testosterone, and a maximizing of the benefits of the workout. Does it make sense?

Shawn Stevenson: Absolutely, yeah.

Mark Sisson: And again, not a right or wrong answer.

Shawn Stevenson: Yeah it just depends on what your goal is, what your training method is. There are so many different factors to take into consideration, but I want people to know that that's an option because it's very counter culture.

But I want to go back too and talk about the food. I want to talk about some of the healthy fats versus the not so healthy versions. So if we're going to be eating a higher ratio of fats as a percentage of our macronutrients, which ones should we be going for?

Mark Sisson: Yeah so you know, in the old days, the first real boom that ketogenic diets had was with Atkins decades ago. And Atkins was a great- ahead of its time in terms of science, it was a great idea. The execution was a little bit poor.

So what it did was it sort of said, 'Okay fats are fine, so all fats are good.' Well people got- you know they were effectively consuming bad fats and good fats. You know, you have a cheeseburger with plastic cheese on it.

Shawn Stevenson: Exactly what I thought about. My friend- and this was when I was in college and I was working in a casino, he was one of my friends at the casino.

Which if you value your sleep, don't work at a casino because I was literally hearing the 'ding, ding, ding, ding' in my head.

But anyways, he slimmed down all of a sudden. You know, I came over to his house, we were playing *Madden*, and he came out and he had two- and I'd never seen this before, it was the first time, and this was like in the year 2000 or 2001.

He had two burger patties, and that plastic cheese sitting on top of it, and I was like, 'What are you doing, man?' He was like, 'It's Atkins, man.'

I was like, 'Okay.' And I was like, 'It must be working.' You know but of course he hit a wall.

Mark Sisson: Yeah so that's a good point that it's not just about the gross macronutrients, it's about the quality of those macronutrients, it's the quality of those foods.

So when we talk about this being a high fat, moderate protein, low carb eating strategy, the high fat part is important to understand.

We're getting rid of the industrial seed oils. So we're getting rid of those oils that are harshly extracted from corn, from soy, from rapeseed which is canola oil that are high in omega-6 fats or fatty acids which are highly pro-inflammatory.

So we're cutting those out, we're cutting out clearly the trans fats that we all know to be the partially hydrogenated fats and oils. And in their place we're consuming avocado, we're consuming organic eggs, we're consuming wild fish which have lots of omega-3 fats.

We're consuming grass-fed meats. These are meat that are grown on their native diet, not corn fed and on a concentrated animal feed operation.

So we're getting quality fats there. For oils and cooking oils we're using extra virgin avocado oil, extra virgin olive oil, butter is wonderful, ghee which is clarified butter, lard even.

Again saturated fats aren't necessarily an enemy. Saturated fats are actually wonderful for us if they come from the appropriate sources.

And it's one of the things we talk about in this book and also originally in 'Primal Blueprint.' I make a big deal the fact that saturated fat is not the proximate cause of heart disease. Just get that out of your mind.

Saturated fat is not the enemy. In fact most of the way we store fat on our bodies is saturated fat. I mean that's the method of choice that we store excess fuel in our own bodies is as saturated fat.

So the idea that you can identify certain healthy fats, incorporate those healthy fats in your diet, is what makes this strategy so compelling for a lot of people.

Imagine having, like I do every day, a big salad. Because this amount of salad, green leafy vegetables, and some beans, and some cherry tomatoes, and some radishes, and some celery, and some red peppers; there's not twenty grams of carbs in that entire big bowl.

And on top I put 25 or 30 grams of protein. I might put chicken breast, I might put steak left over from last night, I might put tuna fish on, or some eggs, I put some nuts on and I douse it with a healthy salad dressing.

And I make this Primal Kitchen dressing for me. I make it for me because I want something that I can use with reckless abandon on my salad, and have that salad be even healthier as a result of the oil that's in the dressing.

So we use avocado oil which is the healthiest of all the oils.

Shawn Stevenson: And you might be the only company that I've come across that does that.

Mark Sisson: Yeah.

Shawn Stevenson: This is why I'm a big fan of it, and you know even my son, my six year old eats the ranch dressing.

Mark Sisson: Oh great, awesome. Glad to hear that.

Shawn Stevenson: So why the avocado oil though?

Mark Sisson: It is the healthiest of the oils. So we chose avocado oil for a number of reasons.

First of all, mayonnaise was this sort of Holy Grail of condiments that anybody who's eating clean for the last thirty years goes, 'Ugh I'm eating clean. I can't have store bought mayo, and I hate making it myself. Half the time it doesn't turn out, and when it does turn out, it only lasts three days and then it goes so bad it can kill you.'

So there's all these reasons that people just got mayonnaise out of their lives. And what did that mean? They couldn't have chicken salad, they couldn't have potato salad, they couldn't have tuna salad, cole slaw, egg salad.

All these things were off the menu because mayonnaise was such a sort of nasty kind of condiment.

Well we looked at that and said, 'How can we change the way we eat? How can we bring this amazing flavorful condiment back on and make it healthy?'

So our mayonnaise is like 70% avocado oil, it's eggs from cage-free hens, it's organic vinegar from non-GMO beets, it's sea salt, it's like a five ingredient wonderfully healthy condiment that you can put on just about anything. And believe me, people are putting it on just about everything.

Shawn Stevenson: Yeah, I can imagine.

Mark Sisson: Yeah.

Shawn Stevenson: And you know, you literally just told my story. Because we were making the mayo, it's just such a headache, so a lot of times we'd skip out on those recipes, you know? And so now it's so great to have that on hand.

And all of this- everything we've covered and so much more is in the book; the recipes, the meal plans, the protocol on how to do the whole process and do it right.

Mark Sisson: Yes.

Shawn Stevenson: The midterm as well to know which steps you're going to take, and it's just amazing. So everybody, make sure to pick up the book like yesterday. You definitely need to have this in your repertoire.

I've got a couple more quick questions for you.

Mark Sisson: Okay.

Shawn Stevenson: I want to ask you about one of the big hacks that folks are talking about today that can get you into ketosis faster just taking exogenous ketones. Alright so let's talk about that.

Mark Sisson: Yeah so there are companies making these exogenous ketones, and they're basically- it's basically beta hydroxybutyrate which is one of the forms in which the body uses ketone bodies.

They taste pretty nasty so you have to put a lot of flavor in them.

Look, I actually use exogenous ketones once in a while before a hard workout. I did the work, I have built the metabolic machinery, I'm able to access ketones in my muscles and my brain, so I actually use these as a performance enhancing substance, but in advance of doing a hard workout.

And by the way, most workouts which are not like ultra hard, I don't do them. I'd rather my body be making its own ketones, and I'd rather be tapping into that system because I want to continue to refine that metabolic flexibility.

Shawn Stevenson: Right.

Mark Sisson: Now people who take exogenous ketones to get into ketosis, again all we're doing is we're- yes you're going to take this and your body is going to show you have excess ketones in your bloodstream. That's the definition of ketosis. Ketosis means an excess of ketones in the bloodstream.

It doesn't mean you're burning fat. It doesn't mean all of the things that you're trying to accomplish.

So if you're taking these exogenous ketones to raise your blood ketone level, yeah they'll do that. Now will they prompt you to be better at burning fat? I don't think so.

In fact I would argue that exogenous ketones in the bloodstream sort of take that feedback- that intricate feedback loop and say, 'Hey you know what? We don't need to do anything. We've got enough ketones. We don't need to take fat out of storage and make ketones. We don't really need to burn- we actually don't even need to burn that much fat. So until we get rid of these exogenous ketones, we'll hang loose.'

So I'm not aware of many people who are benefitting from the use of exogenous ketones in a dietary manipulation with the intent of short circuiting or hacking their way into ketosis.

Yes you'll show big numbers on your pee strips. Yes you'll show big numbers on your ketone blood monitor, but you're not burning fat. You're not actually properly burning fat by doing that.

Shawn Stevenson: I think the first thing is, and you mentioned this very early in answering the question, is that you're fat-adapted.

Mark Sisson: Yes.

Shawn Stevenson: That's one of the first important parts.

Mark Sisson: You've got to do the work.

Shawn Stevenson: Yeah.

Mark Sisson: You know, that's the thing. And by the way, once you do the work, you can actually cruise for awhile. So I don't even stay in ketosis. I don't- you know

some days I'm thirty grams of carbs, which would be almost by definition in ketosis. I never measure anything anymore.

Some days I'm 175 grams of carbs, way out of ketosis. Who cares? What's the difference? I feel the same either way. My brain works the same either way. My workouts are the same either way. I don't get this woozy coozy feeling.

Now some people who claim to be in ketosis for long periods of time, and then they say, 'Well if I have 75 grams of carbs I get kicked out of ketosis and I feel like crap for four days.'

Dude you haven't built the metabolic flexibility yet.

Shawn Stevenson: Yeah.

Mark Sisson: You've got to do the work, and part of that work is doing the stuff in the gym. It's part of it is doing the low level aerobic activity, the low level exercise. You know 180 minus your heart rate. We talk about that extensively in the book as well.

It's a combination of things, but it's all about training the body to be metabolically flexible so it can use whatever fuel substrate you present to it with equal ability and not be- imagine again our ancestors who were keto, and keto-trained, and keto-adapted, and had that flexibility, and then they come across a huge supply of honey, you know?

Shawn Stevenson: Forget it.

Mark Sisson: Well they wouldn't say forget it, they'd overeat.

Shawn Stevenson: Of course, they're going to crush it.

Mark Sisson: Yeah they're going to crush it.

Shawn Stevenson: They wouldn't say forget it.

Mark Sisson: And then- but you know, are they going to feel like crap for four days? Is that the way it's supposed to work? You know maybe, but I don't think so.

I think this is about being efficient with the use of fuel, being able to store fat when you have excess calories, being able to take that fat out of storage when you don't.

That's the flexibility that we want to build and develop. Now once you build it, it's almost like when you first go to the gym and you get to a certain level of- you have to work hard to get to a certain level of fitness. But once you're at that level, you can maintain that on 40% of the energy it took to get there.

Right? As long as you don't slide way back and do nothing, your body will say, 'You know what? I know how to do this.' Well that's how I look at this keto reset.

So when I talk about the keto reset diet, I'm talking about using this way of eating, this strategy which is very tasty and again mitigates hunger, appetite, and cravings.

I'm talking about using this as a strategy in your entire lifestyle so that let's just say you do a reset once a year the way some people do a cleanse.

As long as you don't go back to eating whole loaves of cinnamon bread and icing, as long as you don't go back to eating dozens of cookies at a time-

Shawn Stevenson: You're talking about my old diet again.

Mark Sisson: Most people's diet. But as long as you don't go back there, as long as you stay within reason, and within reason in my case means I can go up to 175 to 200 grams of carbs a day, I could probably go up to 250.

You know it takes a lot of effort for me to get past 250 grams of carbs a day because that means I'm eating outside of that healthy range of options.

Shawn Stevenson: You've got to check out these recipes in here. They look amazing. They've got shredded beef cabbage cups, they've got macadamia crusted Mahi Mahi.

Mark Sisson: That's my favorite, man.

Shawn Stevenson: I knew it would be. Will check it out right there. And there are those cabbage cups. We've got primal cheesecake. I'm showing the camera guys. Make sure you check this out on YouTube if you're not so you can see how handsome Mark is.

By the way, you didn't even share how old you are chronologically.

Mark Sisson: No, I'm 64.

Shawn Stevenson: 64. People would literally give one of their fingers, probably their pinkie. You know, twenty year olds, man.

So we've got chocolate bark, avocado mousse, some amazing recipes.

Mark Sisson: Yeah it's like this is not any sort of sacrifice. These are comfort foods and foods that you're used to eating just made in a way that incorporates the healthy fats, the clean sources of protein, the herbs and spices, and all of the methods of preparation that make food so interesting and delicious.

Shawn Stevenson: Final question on this; what about nutrient deficiencies? Should that be a concern if you're not eating carb dominant foods that have certain vitamins and minerals?

Mark Sisson: No, no. First of all if we're looking at macronutrients, we've got those covered, right? We've got the healthy fats covered, we've got the clean proteins, we've got minimal amounts of carbohydrate.

Now in the forms of carbohydrate that I'm recommending- like for instance that salad that I make every day. That's more a source of fiber than anything else. It's not really big in carbohydrates- it's like again fifteen to twenty grams of carbs, but there's a lot of fiber in there.

That's the fiber that's feeding my gut bacteria, what they need to thrive, and to make those short-chain fatty acids in the gut that fuel the cells' lining in the gut

Those vegetables that I have for lunch as well as the three servings of broccoli that I might have for dinner, and again total of twelve grams of carbs in that entire three serving smothered in butter serving of broccoli.

Again, a lot of micronutrients, a lot of things that you wouldn't otherwise be able to get from the old way of doing say the Atkins' thing.

Shawn Stevenson: Exactly.

Mark Sisson: You know, we've got a lot of micro nutrition here, so we've got phytonutrients, we've got vitamins and minerals, and the fiber is all covered in the way that we're eating in this particular keto reset strategy.

So it's- now you might find- and this is one of the things that we notice is that with the reduction in inflammation and the reduction of water that people want to up their intake of electrolytes.

So I mean salting your food to taste, it means maybe putting a bouillon cube in some warm water and sipping on that once in a while. It might mean taking a little bit of extra magnesium or potassium.

But those are really the only short-term deficiencies, and those are more a result of not having access to the sorts of vegetables and produce that we used to have fifty years ago that actually had potassium and magnesium and stuff in them. Right?

Shawn Stevenson: Wow. Love it. I love it.

Mark, I just want to thank you so much for- and I know this is going to sound crazy, I want to thank you for running yourself into health problems, because then eventually-

Mark Sisson: Yeah, no I wouldn't take any of it back.

Shawn Stevenson: Yeah that eventually led to you just being a total game changer for so many of us. And thank you for continuing to share your story and for being such a gifted presenter with the science, and speaking to my man brain, and as well as everybody else listening too, and helping all of it to make sense for folks, and just thank you so much and continue the great work.

Mark Sisson: Thank you Shawn, it was great hanging out with you, man.

Shawn Stevenson: Now one final question.

Mark Sisson: Okay.

Shawn Stevenson: What is the model that you're here to set for other people with the way that you're living your life personally?

Mark Sisson: You know what? I've said for a long time that nobody has ever asked me this before, but I want to show people what seventy is supposed to look like.

Shawn Stevenson: Perfect. Mark Sisson, thank you so much.

Mark Sisson: Alright, thanks man.

Shawn Stevenson: Everybody, thank you so much for tuning into the show today. I hope you got a lot of value out of this. This is about having options and understanding that we don't have to take the same conventional weird but riddled with crazy obstacles line to find our health and fitness.

There are many great options out there, but we need to look to people who actually have the results, and learn from people who are doing this at a high level, and that's what we have the opportunity to do today, you know?

Ten or twenty years ago, even when I was in college, we still had the Dewey Decimal System, alright? I had to go to the library and like look for these cards and try to find books.

Today we have access to any kind of information that you can think of. If you have the question, you can find the answer, and learn it from people who actually have the results.

I think that is such a simple thing to notice, but it's something that we look past just because we're oftentimes looking for a solution. And Mark is definitely one of those people that has figured a thing or twenty out. So make sure to check him out.

Follow him, we'll put all of his information in the show notes for you to check him out at www.MarksDailyApple.com and also make sure to get yourself a copy of 'The Keto Reset Diet.' I think this is going to be a game changer for you for many years to come.

I appreciate you immensely. We've got some amazing show topics and guests coming up, so make sure you stay tuned. Take care, have an amazing day, and I'll talk with you soon.

And for more after the show, make sure to head over to www.TheModelHealthShow.com. That's where you can find all of the show notes, you can find transcriptions, videos for each episode, and if you've got a comment you can leave me a comment there as well.

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And take care, I promise to keep giving you more powerful, empowering, great content to help you transform your life. Thanks for tuning in.