



Transcript of “Primal Blueprint with Mark Sisson”

Bulletproof Radio podcast #101



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Dave: Hey, everyone. This is Dave Asprey with Bulletproof Executive. Today's cool fact of the day is that when wild chimpanzees share their food they have high levels of oxytocin in their urine. Researchers compared those levels to when they simply ate together in a group but didn't share their food, as well as other things like grooming, that stimulated oxytocin. When they ate their food together, the oxytocin level was elevated in both the giver of the food and the receiver. This is why you should eat your high fat, grass-fed meals together.

Today's guest doesn't really require an introduction. It is the one and only Mark Sisson. Mark is the founder of Mark's Daily Apple, the most well-known paleo and primal website on the planet, with huge, huge numbers of comments in the forum. I've learned a lot myself there. He's the founder of Primal Nutrition, the author of *The Primal Blueprint* and, overall, just an amazing guy and an amazing researcher, and he's got an amazing set of abs that he loves to show off all over the place on the Web.

Mark, it's an honor to have you on the show today.

Mark: It's a pleasure being here, Dave. Thanks for having me.

Dave: Can you talk about primal? What is the primal lifestyle? How do you differentiate it from other similar things that are out there right now? Give us the [marxis 00:01:31] in three, two one for people who are listening, but maybe don't know about it.

Mark: Yeah, *The Primal Blueprint* was my complete lifestyle viewpoint that started with an ancestral, evolutionary-based model and extrapolated out into what amounts to all facets of life. My intention is to educate people in how the human body is designed through evolution, what the expectations of our genes are, and from there to be able to make intelligent decisions. It's that simple. Really it's about choosing different ways of living one's life or different inputs throughout, and doing so with a knowledge based in the evolutionary lens, if you will.

This, just because I was looking for a cool brand to encapsulate what I talk about, *The Primal Blueprint* became that brand. Now, I've been using primal for 25 years. My first company was called Primal Urge Press, back in the mid-'80s, and then I started Primal Nutrition in 1996, and I have Primal Fuel, and I just trademarked Primal Kitchen for a new food line that we're introducing.

Dave: Cool.

Mark: Yeah, so, but Primal, in some regards, sort of ... it expands out from the basic paleo concept, in that it does encompass other lifestyle elements like sleep, sun exposure, play, how you use your brain, and all of those things that actually not only make us human, but provide the kinds of input that allow for a strong, lean, fit, happy, productive, healthy, loving human being.

Dave: That was remarkable, and you just brought something to mind I've never thought of. Were you ever into the primal scream therapy?

Mark: No.

Dave: I just had to ask.

Mark: No, but I mean, every time I do an analysis of a new term that uses primal, of course primal scream is one of the first things that comes up. It's an interesting concept and I've looked into it, but I never went down that path.

Dave: I tried it once. I was at some personal growth thing and there was a dude there who was really into it, and he's like, "No, you have to scream" and I really tried the primal scream thing, and I have to say, it totally ... It has nothing to do with what you do, but I was wondering, like, going back in time, you have almost 20 years more experience than I do in life. I'm 42. You're 61 or thereabouts?

Mark: Sixty-one in July. Yeah. Yeah.

Dave: Okay, 61 in July, so you call it 18 years. I realize that you might have gone through back when that was really big. You're not a part of that,

and it doesn't surprise me that you're not a part of that. You're totally separate and I love the way you do that, by the way, just the way you talk about it being primal, because it is about what's going on inside the body and the way we evolved.

There's something else. As a young guy, I think you had, was it arthritis in your late 20s? IBS? Upper respiratory tract infections?

Mark: Yeah, I really was the compendium of all of the afflictions that people list when they decide to embark on a paleo experiment of one. My own situation was very exemplary of the times. I was a runner and I was pretty good at it, because I wasn't good at anything else. It's funny because people say, "Oh, Mark, you're lean because you're a runner." I go, "No, I'm a runner because I was lean." It's sort of a self-selecting kind of process there.

In order to fuel the running habit that I had created for myself, and the endorphin jones that I was creating on a daily basis, it took a lot of carbohydrates, and the order of the day was, not just complex carbohydrates, but lots of heart healthy whole grains and beer. Beer was sort of the go to carbohydrate for runners in those days.

Well, the accumulation of that lifestyle of 1000 grams a day of inflammatory food was osteoarthritis and the grains themselves had been, probably, the cause of my IBS since the age of 14, so that had been a long standing issue that I thought was mostly the result of my being a type A kind of guy and carrying my stress in my gut, which is what some of the Louise Hay books would've told me.

Dave: Are you a Louise Hay fan?

Mark: Here, I'm a fan of Louise Hay simply because she, like any of the trendsetters and any of the pioneers, she sort of looked at life from a different point of view. First of all, I'm a fan because I based my publishing company on her model.

Hay House has become a huge publishing company with a woman who started self-publishing her own books, so I'm very impressed with what

she's done there. But also, as we get to paleo 3.0, we will start to see the incredible amount of influence that our thoughts have on how we live our lives and how we recreate ourselves and how we generate hormones and how we manifest illnesses. With one of Louise Hay's basic premises that a lot of your illnesses or what is ailing you, what you would call your issues, have to do with psychological factors, much more than physical manifestations of some actual disease process that came from the outside. In fact, she would say they generate all from the inside.

I think there's a lot to be said for that, and that's an area of exploration. One example, just not to ramble on too much in these early minutes here, but one example would be, the number of people in the paleo world, or the low carb world, who have hit a plateau and still have 50 pounds to lose and can't do that. I would go back and say, "Okay, we now have to look at your psyche and we have to look at your ... the history of your imprint and input over a lifetime and what are you doing to hold onto that weight that has nothing to do with the number of calories you're taking in."

Dave: It is so amazing to hear that you're into Louise's work. It's something that we used during the 40 Years of Zen, the neurofeedback kind of brain training stuff. One of the reasons that heart rate variability is a part of what I do with clients, because you can do so much biologically, but your emotions and biology are pretty well interlinked at this point. That's impressive, Mark. I appreciate that about you.

Mark: Thank you.

Dave: All right. Wow. I totally did not know we were going to talk about the psychology of food, and I'm so glad we did.

Let's see, it's like being at a candy store when you're a kid, and you actually eat candy, which I never did, and thinking like, which one do I want to ask next?

It's kind of interesting that you have these problems. I was 300 pounds, 100 pounds overweight, similar set of problems, plus Lyme disease, toxic

mold exposure, CFS, ADD, all those things. Chris Kresser, similar thing. He got really, really sick in Central or South America. It seems like a lot of the leaders in this new movement have all experienced really kind of crappy health. Like my arthritis when I was 14 was in my knees. It was grain-based, obviously, and autoimmunity.

Why do so many of the people who have become strong and focused on this, and are willing to talk about it, why are we all the ones who just had to deal with all this crap? What's the idea there?

Mark: Well, I have a couple of thoughts on that. First of all, it's kind of like that, I ran because I was skinny, I wasn't skinny because I ran. I think a lot of us were frustrated enough with the conventional wisdom and, you know, Chris has a science background. Robb Wolf has a science background. I have a science background. I'm also a cynic. Let's put that on the table.

I had spent thousands of dollars through the traditional medical system with zero really positive results, so I started to do my own research, and that's what led me to where I am today.

People have said, "Well, Mark, if you had it to do all over again, would you go back and be a marathon runner that ate a low carb or cyclic ketogenic diet? Would you train differently? How would things happen? I go, "Well, I'm not sure I would do anything differently, because I am so appreciative of how I got to where I am today, and I have so integrated this knowledge and I have so grokked it, and that's ... there's more than a couple of nuances there, but I've so gotten this intuitively that I know how to eat. I know how to work out. I know how much sun to get before I burn, and then just enough to get vitamin D. I know how much sleep to get." I would say that most of us, the Chris Kressers, the Robb Wolfs, we came to this out of frustration, and it's ... there's a real value in that kind of information that comes from a person who did it themselves, who went through that experiment of one, and got those results.

Now, the second point I want to make is that, I don't think we're that unique. I think that most of America has some litany or list of issues

that literally run their lives, and whether it's an injury that keeps nagging or whether it's a little bit of mild arthritis or whether it's a little bit of irritable bowel syndrome, or whether it's a stuffy nose all the time, or it's a itchy skin on occasion, if you were to ask every person in this country, are you 100% healthy with your health? I bet 90% of them would say, "No. There are some things I want to address."

Dave: It's like that. In my background, studying computer science and complex systems made me aware of some things in what was happening in my body. Because I come from Silicon Valley where the culture's Silicon Valley-ish and very entrepreneurial, but very tech focused, when I was willing to stand up and say, "These are the things going on with me, and my pants don't fit anymore, not because I put on weight, but because it fell off so rapidly" that it became really clear that there's different, I don't know, call them business cultures or just regional variations in how much people care about their health and how much they talk about, how open they are, to it.

I think I was in a place where, especially at the time, it was like, screw your health. Just bring yourself out. Just do it. I had done a lot of that. Do you find, when you fly around, when you do a lot of conferences, when you talk with people, are there areas where people are just more open to what you have to talk about versus people who are like, "What? Well, my body's fine. I only have 50 pounds of beer gut." What's the variation regionally?

Mark: Well, I mean, I would say, generally, the variation is, I live in Southern California where there's a lot more vanity that drives lifestyle. As a result, people spend a lot time outside. They like to get tan. They like to be fit, versus maybe other parts of the country where the conditions are harsher. They're not surrounded by cameras or that culture that would suggest that you need to look great all the time.

I live in sort of an artificial fishbowl of people who are probably more fit than the general population of the United States. But, as I travel around the country and I do talk to people, I do sense that, you look at somebody who is even ostensibly quite fit and quite healthy, and you'll find out that there's something going on, that there's some digestive

issue or there's some breathing issue or there's some arthritis issue or whatever. That's the nature of this society that we've created for ourselves is that we have these gene recipes that really do want us to be as lean and strong and happy and healthy as we possibly could be, but we've bombarded ourselves with these inputs that switch on genes that cause us to store fat and become diabetic and decrease the bone density, for instance, and we switch off the genes that we want that increase immunity, that build muscle and so on and so forth.

It's so funny because I've wondered, and you in particular, Dave, I've wondered why no one has taken on this mantle, because I wanted to call myself Gene Hackman.

Dave: I'm sure Gene Hackman would have had something to say about that.

Mark: Yeah, I think so. But, it really is about discovering these hidden genetic switches that we all have, and tapping into that, harnessing that, immense personal power that we have to recreate, regenerate, renew, rebuild ourselves on a daily basis.

Dave: I don't know if you've ever had a chance to come across my first book, *The Better Baby Book*, Mark. It's in alignment, and in fact, when I started the research for it, I truly had never heard of primal or paleo. I started in like the 2004 timeline looking at more Weston A. Price and a bunch of other things, but it ended up being 1300 references about epigenetics because I wanted to have two kids. I was, let's see, 300 pounds. I had ADD, formally diagnosed. I had all the symptoms of Asperger's when I was a young man. My whole family on my dad's side is like riddled with Asperger's and that sort of thing, and when we're having our kids at age, you know, 39 or 42, for my wife. She had PCOS.

I was like, oh my God, I don't want this to happen. As a loving father, what is everything I could possibly do, and epigenetics appeared to be the answer. Have you seen *The Better Baby Book* by any chance? I didn't send you a copy ahead of time.

Mark: I'm sorry. I have not seen it.

Dave: No problem.

Mark: I have about 700 paleo books stacked in my backroom that I have to read someday.

Dave: I am not going to offer to send it to you unless you ask. I'm in the same boat. In fact, I have interviewed a few authors from your print, lately, on the podcast, so I get it.

The epigenetics thing, both as a way to control or hack your own biology, as well as that of your kids and even your grandkids, it seems like it should ... that discovery is one of the most important ones in the last, I don't know, 30, 40 years of health research, and I feel like there's a lot of, "Well, we should wait and see" but we're humans. Waiting and seeing means we'll be dead by the time we see, so let's do what looks like it is best.

What's your take on those very long study cycle things like that? How would you approach epigenetics?

Mark: Well, first of all, I would agree that epigenetics is the key discovery point in the last 20 years. This recognition that we're not at the mercy of the gene set that we were given, we're not doomed to have heart attacks because our parents had heart attacks. We're not doomed to get breast cancer just because we have BRCA1 or BRCA2. This is, again, the immense personal power that we possess, knowing how certain genes are expressed based on inputs that we provide, choices again that we make. Your life is just about choices.

In Silicon Valley the choices to order pizza out, to have a case of Coca Cola, to program until you fall asleep under the desk, wake up and program some more, that's a choice. If truly that's your choice and you're willing to accept all of the potential negative consequences, then who am I to argue with your choice? Again, my job, as I perceive it, is to educate people to understand the ramifications of each of these choices and to say, "Okay, what's the greatest likelihood that you will become healthier and happier and leaner and fitter and stronger given certain inputs that I can provide?"

I'm not suggesting the primal blueprint is the only way, I'm just suggesting that it's a way that has looked at epigenetics and virtually every study now that you read always looks at the gene. What happens at the level of the gene? Whatever study they're looking at, they're looking at what genes were turned on or what genes were turned off, so that's literally epigenetics. I think what we're going to see, my prediction is, in the next few years, we are going to see the heritability of the epigenome as being a critical factor. This concept that you can not only take the genetic recipe that you've been given, but that you can also take some of the on-off switches that you've already employed in your own life and transmit them into the future generation.

It's a wickedly exciting area of science.

Dave: I did everything in my power as a father and as a scientist to do that with my kids, and to write down a program for people to be able to do it. The problem is, there's a lot we don't know. We do know, what is the effect of stress on the epigenome? Certainly unhealthy, chronic stress. The effect of positive, short term, high intensity stress, is pretty well-established. Sometimes it's, let's make our best educated guess. One argument there says, "Well, what if you do it wrong?" I'm like, "Well, if you don't make your best educated guess, you also might do it wrong, so maybe you'll just do it less wrong, and will move the whole species in the right direction.

Mark: I know. I mean, you know, Wayne Gretzky's famous for making the statement, you know, you miss 100% of the shots you don't take.

Dave: Amen. What a great quote.

Mark: Yeah.

Dave: You're online with that thing? Now, this is something that fortunately not a lot of people ask about, but what about this idea of eugenics where, is it fair that some people might do this, other people might not? Do you have any thoughts on the morality of taking advantage of epigenetics or not taking advantage of it?

Mark: Yeah, I do. I have to be very careful how I position myself, because my views are my views, and yet, because I'm viewed as a nice guy and a thought leader and so on that I have to be very concise about my views. In terms of the overall concept, for instance, of genetic testing for fetal testing, I'm all for that sort of preventative measures, if you will. I think that there's a lot to be said for that. I think that we, not to go too far down this rabbit hole, but we have entered a period starting about 50 years ago, of devolution where we keep people alive in any state or form because it's considered the right thing to do, and I mean, you know, this is not just ... I'm just talking about the epigenome and the genome and encourage people to procreate so there is no selective pressure. That's really what I'm saying. There's no more selective pressure.

Everybody has the right to have babies and that's great, but at some point, if there's no selective pressure, then what happens is the genome gets weaker and weaker to withstand the rigors of whatever environment that we create for it. That's, again, where we're going to see a lot of this epigenome, this heritability of the epigenome, where the mistakes that you or your parents made will now transfer to your kids, and it'll exacerbate itself over time.

It's a very interesting discussion. Again, it's a highly volatile discussion, but the bottom line is, it makes ... I want to take advantage of the science to make my life and the life of my children better. To the extent that I can do that, and not play God, I'm going to do the best that I can.

Dave: It's kind of funny, because your quintessential cavemen named Grok in homage to Robert Heinlein, I hope. Grok, back when they discovered fire, you got to imagine, Grok is the guy who was like, "I think I'll use this fire to keep my kids warm during winter" and the guy who didn't reproduce was the guy who said, "No, no. I won't use fire. It's new science. I can't do that." This is a continuation of hundreds of thousands of years of let's apply technology towards ourselves and our offspring. It's interesting because this is kind of a personal thing for me.

I found out when I was about, I think, 32 or something, I only have one kidney, and I have Spina Bifida. I was evolved that way. Or, not evolved, I was born that way. Why did that happen? Let's see, I have genes. Now

we know about these genes. Likely my mother does, about folic acid, and my mother was on a high sugar diet because that's what you did back in the '70s. She likely had folic acid problems and she was on a high sugar diet which depletes folic acid. What does that mean? It means my lower vertebra aren't as fused as they should be, and I likely have some congenital brain stem differences that I wouldn't have had.

One argument would be like, well, that's unfair. That sucks, Dave. The other argument is like, well, I don't want my kids to have that, so I'm going to use genetic testing. I'm going to use optimized diet, and I'm really fortunate that I live in the western world and I can afford to do it, and it's not fair that my kids may have an advantage over someone whose mother ate lots of sugar and had folic acid problems. Sometimes it isn't fair, but I mean, how could you not do that for your kids? I just don't understand. That's why [crosstalk 00:22:28] ask about this.

Mark: Yeah, yeah. No. It's that simple. It really is, about how can I create the best life for myself? Look, *The Primal Blueprint* isn't about recreating ancient history and camping out in your backyard and hunting your neighbor's pets and living without electricity. It's about understanding how we are wired and what the factory default setting of our genes was at birth, and then how we can best create the human being that we want to be, harnessing whatever technology we can access. The interesting thing is that it's a little bit very low tech, and a little bit very high tech, so the very low tech would be, you know, grass fed beef. Turns out, that's one of the healthiest things you can eat. That's a very low tech way of growing food. It's even lower tech than farming, you know agriculture and what and soy and everything else.

My best example of low tech, which I just have to laugh at, has to do with ... It's a serious topic, but the number of people that I've met who had Crohn's or who have had some serious ulcerative colitis, and have ... They've gone to the doctor, the gastroenterologist who did the tests, and said, "Okay, what we're going to do first is we're going to give you some antibiotics. Then we're going to put you on some prednisone." That doesn't work. Then, over time, we're going to take out part of your bowel. Then that doesn't work. Ultimately, the number of people who

have been cured, completely, with a fecal transplant. How low tech can you get than a shit milkshake?

Dave: You know, it's something that I've thought of, of actually trying, flat out, because it is so low tech. My biggest concern there is knowing who the donor should be, and of course, getting their consent for something like that.

Mark: Right.

Dave: I would be willing to do something like that, although I would probably ... I don't know the worst way to take it, hopefully in a capsule or something, but ...

Mark: I'm sure you can find an enemy who would consent to it.

Dave: Exactly. It gives a whole new aspect to that certain type of eating grin that you might have.

Mark: Yeah.

Dave: I've been intrigued by that, and ways to reduce my own autoimmunity and my inflammation levels are dramatically lower than they were, as the lab tests all show, but they're still not as good as I'd like. I've tried pig whipworm eggs, as an example of that. You can actually take these orally. What's your thought on helminthic therapy using higher level parasites? Have you even looked into it? I don't know.

Mark: Only looked into it tangentially. Think it's interesting research. Have seen, again, these are really low tech alternatives where the medical industry has taken us down a road where those same people I talked about who had undergone the conventional therapy are now \$300,000 into their journey, when in fact, again, a very low cost, low tech, solution was the best solution. I think there's going to be a lot more of this reversal within medicine.

Well, first of all, let's just tell it like it is. Most of medicine has to do with fixing issues that were caused by lifestyle choices in the first place, so 80% of what people are dealing with, whether it's obesity, diabetes,

polycystic ovarian syndrome, arthritis, heart disease, these are ... Clearly they have a dietary and other lifestyle etiology at the root, so they'll either be completely cured by some lifestyle changes, or significantly mitigated with some lifestyle changes. Those are all low tech solutions. You could, and I've said this many times, if people ate the way you and I suggest, if everybody in the country ate the way ... Within 18 months you would have a trillion dollar less spent on medical intervention in this country.

That's a low tech concept. Now at the other end of the spectrum, we still have amazing high tech stuff going on. I don't doubt that I will need artificial knees or artificial hips at some point in my life, particularly if I continue to play ultimate Frisbee at the pace that I do. There's some amazing things done at the high end of the high tech, but so much of what ails people today can be fixed with a very easy, simple, low tech, low cost solution.

Dave: Do you use things like lasers and external oxygen and some of the other biohacking technologies?

Mark: You know, I don't. I was in Las Vegas last weekend for a couple of days for my daughter's birthday, and it was something ... We brought some friends in and they wanted to go partying. Man, can I tell you about some clubs in Las Vegas, but they ... She called me one day and they were all at the oxygen bar because it had ... They'd stayed out until six the night before ... the morning before, and then they hadn't gotten much sleep. I thought, that's an interesting sort of NFL type recovery system.

You know, every once in a while I'll tap into some of these potential technologies, but the laser stuff, not really, and I'm, I don't know, I'm still kind of a luddite with regard to some of this hacking stuff.

Dave: Well, I'm coming to L.A. a lot more often than I used to because I have some of my team down there. If you're ever up for it, I'd be happy to bring a laser along and the reason that I think lasers are kind of cool, one of them, anyway, is that they catalyze the synthesis of ATP. You get a local ATP upgrade, sort of like pouring in octane booster, just for a

little while on those cells, which lets them do a little bit more out of AG, and just run more efficiently when they're in the healing process. You can feel it working, which has been phenomenal for me.

I stumbled across using lasers about a dozen or so years ago for whiplash, because I'd had it twice. The first time it took me a year to recover. I was also eating gluten, still, which is why the inflammation wouldn't subside. The second time a friend brought a laser and literally, after six minutes of lasering, I felt everything just tingling and loosening up, and all of a sudden, I said, "I have my movement of my head back. This is impossible. It cannot be." It opened my eyes up to some of that other stuff, and I hope that over time we see this fusion of grass fed, which is so important for the environment, for our own selves, and proper fueling, along with these other things that maybe didn't exist 100 years ago. You could sit in the sun but you don't get the same effects from that.

Mark: Right.

Dave: I feel like the future is pretty bright because there are all these things we can do now that we didn't have access to, and maybe some of those can stave off a knee surgery for 10 years, and things like that. That could get you over the hump to a certain point where you're like, "All right. Now I'm ready for a new knee." Just a thought.

Mark: No, I agree. I agree.

Dave: Cool. Let's see. I want to talk about toxins in food, specifically. Lectins from legumes. I have found, with the people that I work with, a lot of CEO types and with people on the blogs, when people eliminate those, they usually improve. A few people don't feel any difference when they eliminate them. What's your take on lectins in food and how important they are?

Mark: Well, it's interesting that, over the past eight years since I've really been writing about this and researching deeper and deeper into this, the initial thought was, lectins are horrible. There's nothing good about them at all. You should avoid any form of lectins. But as so often

happens with investigation into diet, you ultimately find out that everything is bad for you, number one.

Dave: Absolutely.

Mark: You know what I mean? It's like, okay, I've just realized that there's no one food that's good for everybody and there's ... it's basically it's a dose response kind of, ultimately, kind of issue. With regard to lectins in general, some are worse than others, and so I think all of these foods exist on a spectrum of worst to less egregious or good. On the spectrum of grains, I would not encourage anyone to eat red dwarf wheat. There's probably nothing, no redeeming value in it at all, and so wheat, barley rye on the one end of the spectrum, and then on the other end, you know, white rice probably harmless, a cheap source of calories converts to glucose pretty readily. Quinoa, people say, "Oh, can I have quinoa on the primal blueprint?" You can have whatever you want. You just have to know the different nuances.

With regard to certain types of lectins that are found, for instance, in legumes, depending on the nature of the bean and other ... There are other issues besides the lectins. They contain some pretty powerful, soluble fibers that can have an effect on your gut biome. What I'm starting to see is that maybe there's some people who are doing better with legumes than others, maybe based on the current composition of their gut biome. If that altered itself, maybe that's having an effect on the lectin influence on the permeability of the gut, for instance.

It becomes this very complicated nuance, experiment of one, which I have said, sort of, all along, it's a long, complex quadratic equation, and every time you change one variable you have to go down the line and figure out what all the other variables are to get the outcome that you seek. If you decide you want to reintroduce some beans into your diet because you're a person who thinks they taste good. God bless you.

Dave: Amen.

Mark: But if that's the case, than there are ways to go about doing that and maybe eliminating other foods at the same time so that you know the

full effect of it. Is it a fact, is it really a question of lectins? Or is it the FODMAP element of that that's causing issues? It's like the more you learn about these things, the less you realize that you actually know. I always come back to the primal blueprint as, it's a template. It's a starting point. I want you to try that for 30 days, and from there you can make adjustments according to your goals, according to your lifestyle, your proclivities, your desires, whatever element of hedonism you want to throw in there, but start with a template and then you make it yours, but again, it always comes back to me. I just want to give you the information so that when you make a choice, you go, "You know what, Mark said if I do this, this might happen, and if I do this, that might happen." That's what makes me feel good about people living a conscious life.

Going back 20 years to our Louise Hay consciousness and ... awareness and consciousness days, because they did a bunch of that, too.

Dave: Now, lectins are ... they're part of our core biochemistry. Like we'd be dead without lectins in our body.

Mark: Correct. Correct.

Dave: All mammals use them. When I was writing *The Better Baby* book, I went out and I bought a college biochem textbook, a little above my reading level for this kind of biochemistry about lectins and forced myself to go through it and understood at least a third of it. There were some things where I just .. Like there was a lot of biochem that I didn't have, where I could follow and do it, but it would just take days. I went through and realized, okay, they're ... lectins are pervasive in our biology. They are useful, and they can be dangerous depending on what they are, because there's thousands of different lectins out there. I worked through it to figure out, okay, what are the benefits we're getting from eating lectins? Especially the ones that are more aggressive, like the nightshades, the things that are now very well talked about.

What's impressive to me about the primal blueprint, and around the broader paleo, is that over the last four years, there's been change,

because so many of these diet programs ... Even Atkins, like the basic rules, fat is good. We forgot what kind of fat we were talking about. Carbs are bad. Oh, chemicals are okay. You have these poor people. I was on Atkins diet 15 years ago or something. I lost 50 pounds. The other 50 pounds wouldn't come off. Let's see, I was eating piles of NutraSweet, piles of [asosulfate 00:34:49] and potassium. I was eating the wrong fats in the wrong ratios, and those things all matter. It's cool that rather than following this very prescriptive or eat fewer calories and work out more and you'll lose weight are also fundamental prescription for disaster at the end of the day.

Why now are we seeing that the primal blueprint and the paleo in general have been open to changes and becoming more of a movement and less of a this is it, cut and dry, and we're not going to change. How come we're open now?

Mark: Well, you know, the interesting thing about Mark's Daily Apple, my blog, is that I've used that, very selfishly, as my own personal wiki over the past eight years, so when I put something out into the universe, I make a statement or I take a position, I get a lot of feedback. Some of that feedback is very valuable to me in rethinking my position, maybe, or maybe it's solidifying my position. I've had the luxury of having a lot of very smart people in this paleo space, come back and say, "Well, Mark ... " For instance, in the case of lectins, again, I came out of the blocks thinking lectins are bad. Avoid ... As you say, some of them, it's a dose response kind of situation where, with a bell curve and all of the standard probability and stats that you'd apply to anything that you consume. Some people probably can't have many external lectins at all. Some people do fine with ... bombarded with all kinds of stuff, and you have to figure out where you are in that spectrum.

With regard to the primal blueprint, I just want to keep up to date with the latest information, so I reserve the right to change my mind. I haven't done it that much, but the lectin issue might be one of those areas. I wish that I had come out stronger in the last four or five years in favor of resistant starch, because I always felt that resistant starch and feeding the gut biome appropriately was the way to go. Yet, I sort of pulled back and said, it's about healthy ... it's about meat, fish, fowl, eggs,

nut seeds, vegetables, and a little bit of fruit. Now, we're starting to see that how you ... the prebiotic aspect of foods is a critical component of a diet, and it's those soluble fibers, those starches, that make it down through the digestive and feed the 80 trillion little cells in there that are not you.

I wish I'd taken a stronger position on that. I will now because so much research is coming down. I said, "You know what? I'm going to change my stance." One area that I haven't changed my stance is on my carbohydrate curve. I still maintain that for most people, the less glucose you burn in a lifetime, probably the better off you are. People have given me grief for this, you know, if you get above 150 grams of carbs a day, I say you enter this sort of insidious weight gain zone. Well, whether it's 200 or 225, there's a number at which people don't need that much glucose. To the extent that they're lucky enough to be able to process it and handle it, good for them. But it's not necessarily helpful, and that's the point I want to make is that glucose ... I still maintain that we are obligatory fat burning beasts.

Our factory setting at birth is to become good fat burners, and we just screw that mechanism up early enough in our lives that for the rest of our lives most of us go down this path of having to have a carbohydrate every two and a half hours every day or else we'll rip someone's head off. Again, I'm just getting back to my defense of my original position, for instance on the carbohydrate curve. I get enough feedback on it that I don't lack for input.

Dave: It helps to have, even though there's a selection bias to people who comment on any blog, it helps to have 1000 or 5000 or 100,000 people saying, "You know, I kind of noticed this when I tried that." It's enlightening. The resistant starch thing. I'm so glad you brought it up because that was the next thing that I was hoping we could talk about. I'm a fan of Richard [inaudible 00:39:01] who's done a lot of this early work, and he's certainly talking about taking mass amounts of basically white potato flour, unheated, raw potato flour, and using it like a supplement to change his gut biome. When I read about this I said, "All right. I'm going to try it out on my own, N equals one." There's two ways to take potato starch. You can take it rectally, in order to change

the gut biome in that part of the gut, or you can take it orally and it'll go down to that part of the gut.

If you take it orally, the lectins we just talked about, which are part of the raw potato flour, may cause problems. I am sensitive to that kind of lectin, so I took it orally for a little while and, what do you know, I got the rashes that come from potatoes. I actually, while waiting for my plantain flour to arrive, I tried potato starch the other way a few times, which isn't that pleasant to be perfectly honest. What'd I get? Really bad gas. Then I started on the plantain flour.

Plantain flour is like basically green banana flour. After a couple weeks of that, I stopped getting the bad gas as much, but I started getting hives from it. I'm like, "All right. I think I've had enough of this." The question is, with resistant starch, what are you feeding? Like one of the primary guys doing this has bacteria from a glacier growing in his gut. He's like, "Oh, look. This shows up." I'm like, "This is kind of scary. Don't you need to like maybe take someone's healthy poop and then take resistant starch?" That's the next experiment I'd like to run, because maybe that would make less histamine producing bacteria in the gut because you repopulate with something that doesn't.

I'm concerned about lipopolysaccharides, which are formed by bacteria in the gut, entering the bloodstream and causing brain fog. If you feed them resistant starch, they'll still do it. Any thoughts on the gut biome versus resistant starch?

Mark: First of all it's a very interesting area of explanation ... of exploration. There is no explanation. I'm talking with Richard about a potential book here, but whether or not it's just about the resistant starch, certainly the whole biome thing fascinates me and I think the health of the gut biome will be the hot topic in health for the next couple years. I think it's, as we look more and more into ... But as you said, it's 3000 species of bacteria that can reside in the human gut, maybe more, and [Leech 00:41:25] is doing this gut biome project where he's analyzing everybody's poop and figuring out what the breakdown is. I don't think we know what the ... Is there an ideal configuration? It differs from

person-to-person, from community-to-community based on the types of foods that are available to that community, and ...

Right now it's a wide open field of exploration, but the fact remains, if you deanthropomorphize this whole equation, you could arrive at the realization that human beings were evolved to be a life support system for bacterial colonies. It's sort of a matrix. Again, a sort of matrix concept that if you ... These organisms that have been around for a billion years or more, they're pretty darn smart, and smart being again, an anthropomorphic type word. It's interesting to think that more of you is not you. Inside you, the 80 or 90 trillion cells are not you, and they really have a lot to say about what's going on with your digestion, with your immune system. Again, 80% of the immune system resides in the digestive tract, so it's a very important area of exploration.

Dave: That leads to the next toxin that I wanted to ask you about. It's mold toxins, mycotoxins, and one of the reason I'm interested in them is because they stimulate the growth of biofilm in bacteria. When you have, even parts per billion of certain toxins from molds present or the molds themselves present, the bacteria change. We know this. It's called, like penicillin is a mold toxin. Right. But that changes what the bacteria do, so they actually form a mat, and the mat has the ability to excrete waste and to take in nutrients. If you've ever seen like a kombucha colony, which I'm guessing you have ...

Mark: Mm-hmm. (Agreement)

Dave: ... it looks like an organ from the human body. You touch it and it's leathery and it's actually really creepy. Like I had to toss one out that got mold on it a while back and I kind of ... like, do you bury it? It looks like you've got a liver or something growing. That's a complex biofilm. But if the same thing's happening in your body and it's modulated by the mycotoxins you take in, my feeling, it's probably kind of obvious from the stuff I read. I think mycotoxins are, especially chronic low level ones that never go away, are affecting our biofilms and our very thinking. What's your take on the relative importance of mycotoxins versus other things in our diet?

Mark: Again, it's one of those areas that I'm ... A friend of mine, Doug Kaufmann, has gone on record saying mycotoxins are the cause of cancer. I'm not sure I'd go that far, but he's sort of one of those cutting edge guys that leads the way and says, "Let's look into this, at least and let's explore what's going on here." Stachybotrys is sort of pervasive in some homes in some of the more humid parts of the country, and people get sick. I think there's a lot to investigate that there about mycotoxins and then the mycotoxins in some of the food supplies. Corn in particular lends itself to this mycotoxin thing. I know the whole coffee issue is a big deal with mycotoxins in coffee.

Once again, talking about the microbiome in the body, it's not all in the gut, we have resident bacteria on our skin that literally, when you go to bed at night, the reason you don't wake up with three inches of filamentous mold growing on your skin is because of that bacteria. To think that you're going to get into the shower twice a day and scrub your skin and get rid of all the oils and support systems and the bacteria there is kind of like ... it's a ridiculous way of plotting a strategy to get healthy, and yet that's kind of what we do.

Dave: All right. Random question. You don't have to answer it if you don't want to. How often do you shower?

Mark: I get wet every day. I don't use soap. I use soap probably three times a week, but my getting wet every day ... I have a pool in my backyard and in the winter time, even though I'm in Southern California, it'll be anywhere from 53 to 60 degrees. Every day I just walk into the pool and I just hang out for a couple of minutes. It's essentially a cold plunge for me, around 2:00 in the afternoon. It's become part of my routine when I'm home. I love it. That sort of serves as my bath or whatever for the day.

I try to maybe ... I shampoo, again, twice a week, maybe, so I do use soap, but I don't use it every day and I certainly don't use it multiple times a day.

Dave: Okay, cool. I'm the same way. I get wet most days depending on what's going on, but I don't use soap on a regular basis because it seems to ruin

the composition of my skin. I just don't use shampoo more than like twice a year usually, something to do with getting my haircut, because I don't need it. I don't get dandruff when I'm like that, and if I do have a few flakes, you can usually say, "How many carbs came in the last couple days?" It's because I went over the ... It's very predictable and controllable. Right? This drives some people kind of nuts, because I was brought up, if you're not taking a shower every day, at least once, you're a dirty person. I'm like, "Yeah, I guess I'm a dirty person, but I'm good with that."

Mark: Yeah.

Dave: All right. We are getting near the end of the podcast, and I'm thinking we have time to talk about intermittent fasting and then to close down our conversation. You up for that?

Mark: Absolutely. Yeah.

Dave: All right. Intermittent fasting. I know you eat in a window. I do the same thing. Tell the people who are listening to this, how do you do intermittent fasting? What's your take on it?

Mark: Well, so, first of all, I do eat in a [inaudible 00:47:08] eating window, 1:00 p.m. to 7:00 p.m. typically, and that's my eating strategy. I don't even refer to that as intermittent fasting. That's just a way of eating that I have developed that maximizes my fat burning and allows, also, for the pulse of whatever HGH or testosterone that I want to generate in a workout. I go into my workouts ... Like I'll wake up in the morning. I'll have a cup of coffee, a big cup of coffee. I don't do bulletproof and I don't do egg coffee, which is my ...

Dave: Your primal egg coffee. Right?

Mark: Yeah, yeah, yeah. I just have a big cup of coffee. I like that. I will then go to work a little bit and around 9:30 I'll go to the gym or I'll go on a hike or I'll go to the beach and do sprints. I do it fasted. I don't eat after the workout. I typically don't eat until about 1:00 in the afternoon, all intended to maximize muscle max, to get whatever benefits of

autophagy that I can develop in that short period of time that would be related to the intermittent fasting thing, but all contemplated to make me really good at burning fat, because that's kind of my thing.

I'm obsessed with being a fat burning beast. That's sort of what I coach and that's the essence of *The Primal Blueprint* because when you become good at burning fat, your appetite self-regulates and you don't get hungry that much, and you're able to intermittent fast. That's a really key skill to develop. When people talk about intermittent fasting in the carbohydrate paradigm, they see all sorts of weird things. They still see benefits from skipping a meal for, say, 36 hours, but they see extra cortisol released. They see a decrease in mood and a lot of things that have to do with the body not having been adapted to accessing fats and ketones.

They still show benefits to the fast. Well, if you're fat adapted and ketone adapted and you skip a meal, or you skip a day of eating, the body just says, "Hey, I know where to get 500 calories right away. I'll get it off my ass or off my hips or whatever, my thighs." It doesn't care whether that same saturated fat came from a meal or the body, because it's all going to drive an energy system that you have built. You've built metabolic machinery to be able to burn ketones in the brain, for instance. Whereas a sugar burner might require 120 grams of glucose a day to fuel the brain and stay active and functioning, a keto adapted, fat adaptive person, might only need 30 or 40 grams of glucose, all of which could come from either gluconeogenesis or from the glycerol molecule stripped off the fatty acids. There's not even an issue there.

You develop this skill because mitochondrial biogenesis. If we want to talk about a hack, the greatest thing you can do for your body is to increase the number and the efficiency of your mitochondria. You do that by cutting back on sugar. You do that by forcing your body to burn its fat stores, and when it gets that signal, all of those little genetic switches, they upregulate. They say, "We need to build more of these powerhouses. We need to build more mitochondria" and then the mitochondrial DNA says, "We need to be more efficient at putting fat through because we, as the mitochondria, are the stumbling block. We're the backup where all the fat has to put through." Well, when you

get to that point and you can access that fat, you don't need to burn sugar throughout the day. You don't need to take in carbohydrates so you can skip these meals.

Now, a couple things if you're a person who wants to lose weight, intermittent fasting for 24 or 36 hours once a week, great thing. I highly encourage it. It works better for men than women. That's a whole different discussion that we can have about hormonal disruptions and things like that, but again, it's a experimental one that you might want to try. The other reason for intermittent fasting is this wonderful analogy I use where you have a cell. The cell says, "Well, let's see, there's lots of glucose around, so let's divide, because your job is to pass the genetic material forward into the future." If there's lots of food and lots of glucose and lots of other nutrients, we can divide, become two cells. This will be great. Everybody'll have fun. We'll get this whole life process over sooner so that the next organism can be created.

Now, conversely, think about a cell that doesn't have ... Now you've been fasting for 36 hours. The cell goes, "Geez, what do I do? There's no food around. The last thing I want to do is divide, so I'm going to ... I think I'll eat some of the damaged proteins and some of the damaged fats that are inside me. I think I'll clean house a little bit. I think I'll remodel. I'll fix up some of the DNA." There's a real longevity, anti-aging component to intermittent fasting that is, I think, really beneficial. It's worth doing for people. I think there's no reason not to.

- Dave: I am in full support of those ideas. You mentioned a couple of things about hormones there. You're over 60. HCG, testosterone, bioidentical testosterone, human growth hormone, are you going to do them? I'm already on testosterone. I've talked about that before, because my numbers showed that it's beneficial for me, but what's your take?
- Mark: Right. Right. Maybe. There's a point at which I think HGH ... I'm not a big fan of HGH, conceptually. I think it's like a master hormone that can ... There's just not enough known about it right now.
- Dave: Could be dangerous.

- Mark: Could be dangerous. I'm open. I mean, HCG doesn't appeal to me. My wife does HRT. She's 58. She looks great. She started in menopause, and so she's been doing it for five or six years. For women I think hormone replacement is probably something worth experimenting if you are exhibiting symptoms that you don't like. For men, again, if you test low, I'm not opposed to it, it's just, you have to be very careful with that stuff. I think the jury's still out on a lot of this.
- Dave: Well, you can get that atrophy of your genitals or actually just your balls, but still ...
- Mark: Yeah.
- Dave: ... testicular atrophy is no fun. Right? But, I suppose there are other ways to get it that involve not eating enough butter and animals. It can happen either way.
- Mark: Yeah. Who needs big balls, I say, but I mean, you know ...
- Dave: That was some kind of ... Was that AC/DC?
- Mark: Right? As long as everything else is according to Dave [Stack 00:53:28] measurements, yeah.
- Dave: It's that next level up that matters. There we go. Now, there's a question that everyone who's been on Bulletproof Podcasts has answered except that one time when I forgot to ask, and that is, given everything you've learned, Mark, which is a fascinating amount of things, not just for MDA, though, but your whole life, Louise Hay, included, top three most important recommendations you have for people who want to perform better, want to kick more ass. What are they?
- Mark: Top would be get appropriate amounts of sleep. I think people are shocked when I say that because they think, oh, it's got to ... have to do with the diet. Probably the number one thing that I think people suffer from now is a sleep disorder that they brought on themselves. I would say really make sure you orchestrate your sleep schedule and pay close attention to that.

Number two, cut out sugar. However you can do it. Whether or not you give up grains, cut out the sugar. Make sure that you are not drinking your calories in the form of soda. The deserts have to cut way back, and look for added sugar on the labels. If you can get rid of the sugar and then, presumably, if you can get rid of the stuff that turns to sugar, the processed grains and so on, you'll be way ahead of everybody else around you who's trying to lose weight, trying to find more energy, trying to reduce inflammation.

Probably number three is, find ways to move throughout the day, not necessarily in terms of exercise, because it's not about counting calories, it's just about the movement through space. I mean, I'm talking to you. I'm at my standup desk during this interview. I'll find ways to move throughout the day. I'll go for a hike in the middle of the day. I'm always looking for ways to move, and I think ... My hip flexors have thanked me for that, by the way, since I've been doing a standup desk. At my office all of my employees have a treadmill under their desk, so ... I didn't force it upon them, they actually asked for it.

My employees can put six, eight, 10 miles a day in walking 1.7 miles an hour, working on the keyboard, answering the phones and stuff like that. Find ways to move.

Dave: That's so cool. In case you heard that noise, that was actually my standup desk. It's moving up and down right now. I have an electric one. I've been standing for the podcast, too. I found walking to be a little distracting, so I ... Every hour I'll step on my whole body vibration plate for five minutes and just do 30 times a second bouncing, assuming that does [inaudible 00:55:56] perception that it's probably similar to walking, but ...

Mark: Which one do you have?

Dave: I use one that I manufacture. It's called the Bulletproof Vibe.

Mark: Oh, okay. Good.

- Dave: It's a \$1500 vertical up and down only, 30 hertz only, but it's like small. It doesn't have handles or anything, which is why I like it, because it just fits wherever. It's an interesting idea. It sounds like you've tried ... Do you have one? A whole body vibration?
- Mark: No, I don't. I mean, I'm ... Pineapple. I [inaudible 00:56:23] company Pineapple, but the designers of that were friends of mine, and when it first came out about 10 years ago I started using it, and it's kind of fun to do pushups on or do squats on. I'm not opposed to the science. I think the science is there, but at some point I'm going to be gadgeted out here if I keep going.
- Dave: I think it's already happened to me, but it's so fun.
- Mark, tell people, like they don't already know, given how popular you are, but tell people your URL, your latest book, where they can learn about the other books that you're publishing with other health innovators. Just, basically, give us your coordinates.
- Mark: Marksdailyapple.com is the site. I encourage people to sign up for the newsletter. It goes out every week. Also, primalblueprint.com is where we sell our books and our events and supplements and everything else that helps take advantage of all the technology and all the education that we've amassed.
- Dave: Mark, thanks again for coming on. It's been an honor to chat with you. I'm a fan of your work and I appreciate all the energy you put into what you do.
- Mark: I appreciate it, Dave. Thanks for having me.



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