

The Primal Blueprint Podcast – Episode #41: Listener Questions & Answers with Mark Sisson

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Brad Kearns: Welcome to the Primal Blueprint podcast Malibu studios with Mark Sisson. It's been a while but we've had some great shows in between loading up that pipeline with some interesting guests. Now we are back to square one where we started with Mark in the studio.

Mark Sisson: I wouldn't call it square one. We are way ahead of square one now. I understand that we have a lot of questions we need to answer today.

Brad: Last night we had the open mike night situation that we had some positive comments on where we just shot the breeze and you talked about your exercise routines and some of the changes and some of the questions that can back it up. So let's get right to it. Eh??

Mark: Yep!

Brad: [00:01:22] One of the questions comes about alcohol. This person is studying in the Expert Certification program and noticed that we have kind of backpedaled from the stance that it is sensible indulgence and you can enjoy your glass of wine and get your resveratrol benefits. But in the Cert, he says, you mention that it is the first to burn source of calories so it can get in the way of weight loss efforts, that it is lypogenic, meaning that other calories that you consume with the alcohol are more likely to be converted into fat, and finally that the anti-oxidant benefits could be over-stated and one more possible effect on gut health. So in asking this question of you, I know you are still in the midst of your experiment, right?

Mark: Well, actually my experiment has been conducted and it's over. I have come to the realization that I am going to cut back on alcohol. This is partly because I just feel better, and partly because in revisiting some of the original data and the original research on alcohol. It is really interesting. I started to craft a strategy called the Primal Blueprint based on my desire to include as many people as possible. So I wanted to include people who like dairy, if it was appropriate for them to eat it. I wanted to include chocolate. I wanted to include healthy fatty meats instead of just lean meats, like the early paleo suggestion would be. I wanted to include red wine because there was good research at the time those who drank one or two glasses of red wine a night outlived teetotalers in some of these studies that were done. But overtime, I realized that the reality is that the ethanol in alcohol is still poisonous to human tissue and the occasional hermetic response we might get to a single dose of ethanol in a glass of red wine is probably not an inappropriate stimulate to have some short term changes but the chronic us of alcohol is probably not serving us very well. If we go into the details of what happens with chronic alcohol consumption, even it if it is to the point that you don't get inebriated, but just that one to two glasses of alcohol in the form of red wine per night.

We do find that there is a negative effect on the cells lining the gut. There are some gut permeability issues with alcohol. There are probably some things going on. What I noticed for myself was that even with just a glass or two of wine, I would wake up two or three o'clock in the morning, after having fallen asleep pretty easily, but then restless and having a difficult time getting to sleep, as a result...

Brad: Just a couple of glasses?? Just a normal routine in the evening?

Mark: Yes, exactly. It sort of went away with my experiment. I thought that was interesting. I had assumed that my waking up in the middle of the night was just a normal part of life and something not to be worried about and yet, with having given up the alcohol, I noticed a difference. I have completely given up alcohol. I had a glass last night, which was probably the first one in six days. I might have one or two a week now, instead of a glass or two a night. There may be some interference with the bacteria living in the gut. It is pro-inflammatory to a certain extent. Again, in small doses that might be a positive hormesis but in chronic long-term exposure, it is probably not good.

Brad: So you are calling chronic the basic socially acceptable couple of glasses a night. Or one to two, you said.

Mark: Yes, I think so. I think that is probably accurate. So yeah, just to sort of wrap this up, I have decided for myself that.....One of the things that happens as a result of this experiment for me was, once I got off the habit drinking a little bit of wine every night, when I did decide to have a glass I noticed the effects more.

Brad: What is going on there at night when you are waking up?

Mark: I think the interesting thing is that in Chinese medicine, they say that between 2:00 and 3:00 a.m. when you are sleeping is when the liver is going through its own self-cleansing process. I don't know whether I believe that or understand that but it was interesting that it coincides with my own particular awakening in the night and then having a difficult time going back to sleep.

Brad: All right, so you are committed. You are staying on pace here. We are going to do rapid fire and hit a bunch of questions.

Mark: That wasn't so rapid fire, but let's see if we can pick it up.

Brad: It was below our 7-minute average.

[00:05:56] One thing I want to pull out of there is quickly mentioned the primal stance of advocating healthy fatty meat rather than what we always hear, even with primal/paleo people is going for the lean meats.

Mark: Yeah. Initially when the paleo diet came out it was lean cuts of meat was the recommendation. I think this has long since been remedied. I think that the strict paleo community recognized that some of the fatty meats, provided they are coming from well fed, well-cared for sources, are still appropriate for consumption. Grass-fed would be ideal but even if you had grain-fed or grain-finished beast who had not been given hormones or anti-biotics, that is still an appropriate choice of protein and fat even though the fatty acid profile isn't quite as ideal as the grass-fed.

Brad: So in the Primal Blueprint you mentioned if you couldn't get that wonderfully raised animal and your eating CAFO, trim the fat off because that is where the toxins concentrate?

Mark: Even so, that is on our standard grown piece of meat, if you wanted to work your way down the scale from ideal being grass-fed to less than ideal CAFO (concentrated animal feed lot operation)

Brad: You just gave away one of the questions in the Cert, Mark. Module number eleven. Good luck, guys.

Mark: Even if you are relegated to that because of your budget or because of access that doesn't mean that it is the end of the world. As I say, you can trim off some of the fat and put a nice slab of butter on top of that and kind of retrofit it to become a healthy source of fats in addition to protein.

Brad: [00:07:41] Nice, nice. So here we are in mid-October and speaking of the Cert we launched in late August or the beginning of September so we are just starting out. In mid-October, how are things going? What has been the response?

Mark: It is unbelievable! The response has been overwhelmingly positive. People who, maybe assumed that they knew a lot about the Primal Blueprint and were just taking the Cert to kind of prove to themselves that they already knew enough have been observing that this really goes into detail and there is a lot more information here than they would have anticipated, and pleasantly so, surprisingly so. We have had several hundred people who have signed up for the course. It is very inspiring to me that to see that there are that many people out there who want to further their knowledge, deepen their impact and understand even more how to extract the greatest possible joy and contentment and fulfillment from life.

Brad: One thing I'd like to give a plug to are those rapid-fire graduates who already breezed through this course. We have been getting some time estimates and in fact the course of study is taking anywhere from 25 to 60 hours of total work put in to get through those modules. Just the Cert exam component, not the multi-media materials. Quite a few of these folks, and I'd love to mention them all by name, but they have written in with some very concise feedback, suggesting or pointing out areas where maybe they were confused about an exam question that wasn't quite fairly worded. So we have done some really great editing on the fly, which is so fun about this thing. We keep making it better every single day. One project that we are working on now is dump in a whole bunch of sound bites, some audio enhancements, supplementing the material that might not fit right into the flow of the text matter. If you are an audio learner, you can click on the play button right in the middle of the course, right with your video that starts every module. Of course, we have you on video giving a summary of what you are about to learn as you read through the material, you can click on audio and get some add ons, some unplugged commentary and then the examination process which really helps refine and makes sure you own this material.

Mark: It is a very robust course and our goal is to get at least 2000 people through it next year.

Brad: So now we can skip the middle-of-the-podcast commercial and go back to the questions. Thank you, Mark, for that commentary.

[00:10:02] Rebecca writes in and wonders that since that recent post where you detailed your dietary habits have you changed anything? And also if I am struggling with weight loss, are there some macronutrient ratios that I could adjust?

Mark: To the first part of the question, I am always experimenting with my diet. In the last six weeks, I have given up nuts. That was one of my question marks I had about how are nuts serving me in my quest for optimal health, versus the crunchy salty enjoyment that they give me by the handfuls when I am not eating mindfully, shall we say? One of the areas I look at when people are having a difficult time with their weight loss is I typically ask them, "How many nuts are you consuming in a day?" The people who come to Primal Blueprint or come to paleo understand that fats are sort of now allowed and never were before, that nuts are finally on the menu once again. The danger is that you over consume nuts because they are on the menu they way some people maybe over consume bacon because it is on the menu.

I was looking at that for myself. How many calories a day am I taking in in the form of nuts? How many grams of polyunsaturated fats? Because nuts are basically little bags of linoleic acid, some of which is fine and appropriate, and some of which is probably excessive. And then there is the element of digestibility and the extent to which some of the nuts that we consume may impact digestion and gut health and the macro bio. So I thought to myself, I am not that sold on nuts as a staple of my own diet. I gave them up for, I think it's been, six weeks now and see what effect it had. It has certainly not been a negative effect in terms of positive effect?? I would suggest my digestion is incrementally better as a result of that. Am I going to give up nuts for the rest of my life? Probably not. But I am having fun with these little experiments of one. That

is the most recent change I have made to my diet and that is not to say that I won't reintroduce my favorite Macadamia nuts.

Brad: You gave me that can last week. Fantastic. So one thing you talked about at the Primalcon Keynote address was this minimum effective dose. It comes to mind here on this topic that nuts are nutritious, they are primal approved and there is the possibility of people overdoing it, especially in the desire to reduce excess body fat.

Mark: It is a typical hurdle that people have to overcome. When you look to lose body fat, the first thing you have to do is to teach your body how to burn body fat. That's the essence of the 21-Day Body Transformation. That is reprogramming your genes to derive most of your energy from your stored body fat or from the fat that is on a plate of food that is in front of you. Once you have developed that skill, that ability to tap into your stored body fat, then by restricting the amount of calories that you take in, you can force the body to burn off stored body fat. So I don't people to think, "Mark is talking about this restricted calorie thing. I thought that was a no-no in the world of paleo and primal." The reality is that in order to lose excess body fat, we need to burn more calories than we store. The danger with some of the initial attempts at eating a high fat low carb diet would be that you are presenting the body with as many or more calories than it needs to burn. So you may be good at burning fat, but you may only be burning off the fat from you meals, and not the stored body fat, which is what you are trying to do. Nuts tend to be very deceptive in that because I can see people who say they do have a snack of nuts in the afternoon and then when we explore it, we find they say they have had a handful or two or seven and then I ask them what is a handful to them. What I find out is that these people are taking in 1000 or 1200 calories of nuts a day. It is not to say that is bad or horrendous, or terrible, or that you have failed the paleo or primal test. It is just to say that you are providing your body with so many calories that your body does not need to look to its own stored body fat for additional energy. So nuts seem to be a little bit insidious in that regard.

Brad: I am glad you made that distinction of the step-by-step because the first step is to get off the carbohydrate dependency so if you need a big handful of Macadamia nuts every afternoon, that is okay by Primal Blueprint standards but then at some point when you get good at burning body fat, you take a second look at that. I think the Primal fuel falls within that same category. It is an excellent catalyst to get people off the carb train. Especially in the morning if you are used to that high-carb breakfast, you have the Primal Fuel in which the macro nutrient content is low carb, high good protein, high quality fats and sort of get trending in that direction where they are not requiring those high fat snacks as much as they started out with.

Mark: Yes. Basically the single serving on the label of Primal Fuel is 195 total calories. In that you have 20 grams of protein, 14 grams of healthy fat, and minimal carbohydrate so it literally primes the pump so that you buy another four or five hours until your next meal with just again, 195 calories, but you've primed that pump to start burning fat throughout the day.

Brad: If you are making Primal Fuel for, let's say a high school basketball team that is burning a lot of calories and growing and you put in two cups of coconut oil along with the 195 calories, like I do at my house. Everyone is so satisfied. They love their blueberry smoothie. It is probably 1000 calories in a medium size cup.

Mark: It better not be two cups of coconut oil.

Brad: I pour that stuff in like you would not believe. They are so satisfied. They come to our house all the time. Hey, guys, want a smoothie? 195 calories of powder and 3000 of coconut oil. So if you are on the high school basketball team, that is one category. The rest of you have that nice efficient dose of breakfast.

Mark: So the minimum effective dose of nuts, for instance, would be enough to take the edge off your hunger. Not to take the edge off your meal.

Brad: [00:16:41] Here is another one. Steve writes in. He is loving this primal and he's had great success and now the big step is taken. His wife is actually going to try going primal. Are there any adjustments or requirements for ladies getting started on the primal direction?

Mark: We could fill a book with that. In fact we are in a book called, "Primal Woman" coming out in 2015. The short answer is yes there are a couple of adjustments. Women who are depending on their current metabolic state, and their weight, their goals, and their age, and their status in life in regard to menopause or peri or post menopause. All of these things weigh into crafting an eating strategy that works for the desired goals. In general, however, women probably need to pay a little bit more attention to their source of carbohydrates, not say that all of them need to cut way back on their carbohydrate.

There are opportunities to decrease carbs too much and then bump up against a wall that manifests itself into not feeling too great. Low-carb flu. If you are one who wants to go whole hog...whole hog is a bad choice of words. If you want to go full primal, you really have to drop carbs but pay attention to the signals. It is possible...a lot of people did that in the days of Atkins. They would go through the induction phase and go down to 20 or fewer grams of carbohydrate a day. If you are a person who can do that and you recognize you can do that, why not exploit that for a couple of weeks? On the other hand, if you are someone who is affected dramatically by that drastic reduction in carbohydrates, then there is no need to be draconian about it. If you were using 300 grams of carbs a day, then dropping down to 120 is a major drop and yet still gets you very close to where you need to be to get those fat burning systems engaged and yet is very doable in terms of the amount of...providing you have gotten rid of the grains, breads, pastas, the cereals, the sugars and all that, it gives you plenty of leeway for lots of vegetables and, again the vegetable are going to help with the microbiom and the soluble fibers that healthy bacteria need to do their beneficial work. There is a lot of leeway in the Primal Blueprint eating strategy for women in particular to continue to consume carbs as long as it is not sugar and grain based.

Brad: So make it personal experiment. Use you intuition. You shouldn't be feeling lousy as you are transitioning to primal.

Mark: Right. Take it away.

Brad: [00:19:36] Interestingly enough there are two separate questions from recovering anorexics. One of them, Ellie, is concerned about losing weight. She says, "I don't want to lose weight while I am going primal. I wonder how I can gain weight while going primal. Should I eat more fruit sugars, perhaps more fats? I want all the wonderful benefits of less pain, less inflammation, more energy, more emotional stability." She is 5'10" and 130 pounds. She is at a healthy weight and in recovery. She has a very active job, does sprinting one to two times a week. So she could be on the flip side of most people, huh?

Mark: Yes. I think 5'10", 130 right off the bat a great weight to be at particularly if she is sprinting and if she is doing some form of resistance training, which is lifting heavy things. I am a big fat of that for everybody and in particular women and in particular among women who are recovering anorexics because of eating disorders. So much damage has been done to the bone tissue that you need to prompt the bones to become denser and stronger through lifting heavy weights, this direct resistance exercise. Having said that...yeah, as long as you are getting enough protein, as long as you are getting enough healthy fats, you really don't need to try to overdo the carbohydrates and the sugars. I certainly wouldn't want to restrict them, particularly if your issue you want to pack on a bit more muscle and not lose any more weight. The main thing is whether you are obese or whether a hard gaining skinny person, what we are trying to do here is we are trying to find your ideal body composition. And once we find your ideal body composition, through the process of crafting an eating strategy that includes healthy sources of fats, healthy amounts of protein, healthy amounts of carbs that don't include grains and sugars. Then everybody sort of settles into an eating pattern that is based on their hunger level. This skill that we develop which is to recognize when you are hungry and be ready willing and able to eat whatever it takes to satisfy that hunger and then no more. It is not your job to overfill yourself at a meal. Once you sit down to a meal and you start eating and you recognize that you are hungry for that meal, halfway through the meal what I tell people to do is ask yourself with each successive bite of food, "Am I truly hungry for the next bite of food?" If the answer is yes, have it, relish it, and enjoy it. But if you are not hungry for the next bite of food, then recognize that

there is plenty of food around the corner if you get hungry the next hour or two or seven. There is no need to eat to the point you are full, because for most people once you have gotten to that point of fullness, you've probably eaten a little bit more than you should have. If you are basing your eating strategy for the rest of your life on this ability to recognize when you are hungry and to be very good at burning fat so that even if you are hungry but you have to be forced to skip a meal, you don't lose focus. You don't lose energy. Your blood sugar doesn't drop just because you are so good at burning fat. It is this intuitive ability to recognize what source of food, how much food to eat, how much I need to maintain my energy levels and that is not just advice for anorexics, that just advice for obese people. That is advice for really, really fit people as well.

Brad: [00:23:13] We are not dispensing professional advice here, but it seems to me that the gateway to breaking free from those emotional relationships with food is to get off that carb dependency cycle so that you are not depending on regular feedings because when you are it is easy to get emotional and in your head about food rather than your heart and your appetite.

Mark: Yes for so many people who have become sugar burners throughout lives and developed that particular pathway, they have created this self-perpetuating cycle which involves filling up with a lot of carbohydrate, not being able to access stored body fat so once the carbohydrate has been burned off, because the body will chose to burn it off because the body doesn't like to keep a lot of carbohydrate or glucose on hand, in fact it seeks to store it in the fat cells. Once that has been burned off, the hunger signals arise again because you haven't become adept at burning fat. You need another source of carbohydrate. You need more sugar, more glucose and the cycle perpetuates itself, not just day in and day out but from one meal to the next to the point that so many people that I know will, as soon as we finish having lunch, they start talking about what we are having for dinner. That is no way to live your life.

Don't get me wrong. I am a food hedonist. I enjoy every bite of food I put in my mouth. I don't choke down anything that I was told was healthy just because it is healthy. I want to enjoy every bite of food. I am not a big fan of kale, even though it is apparently the healthiest food in the world. I am not a big fan of kale so I don't eat much kale. I am very clear that I want every bite of food that I consume to be a pleasurable experience. But I also know there are certain foods that I should probably should not be eating, even though they might be pleasurable like cinnamon rolls, pitchers of beer, bags of peanuts or whatever. These are things that I would like to be able to eat but I choose not to because I know what it will do to me so from this list of all these foods that I can eat, meat, fish, fowl, seeds, nuts, vegetables, and little bit of fruit. I can eat as much as I want, when I want. I have just created this ability over time to manage my hunger and the irony of all ironies with this low carb eating strategy, and this applies to all of the Primal Blueprint and most of paleo, is that once you are good at burning fat and once you are good at accessing ketones and once you can go for hours at a time without thinking about eating food, just because you are so good at burning fat, you get to the point where appetite does diminish.

[00:25:52] I find myself eating 30 percent fewer calories today than I thought I needed ten years ago to maintain the same energy levels, body weight, and everything else that was going on in my life activity wise. It is ironic to me. People will ask, "Aren't you restricting yourself because you are eating 30 percent fewer calories today than you did ten years ago? That is a restrictive program." No. I certainly still eat when I am hungry. I recognize when I am no longer hungry a lot earlier now. I don't overeat. You talk about the minimum effective dose earlier in the podcast. The minimum effective dose of food. The point of view that I have now, which has diametrically shifted in the last ten years, is I used to think to myself, "How much food can I eat and not gain weight and be able to have the energy level and whatever?" In other words, "What can I get away with? How much food can I eat as sloth?"

Brad: That's the tag line for the triathlete and the runner.

Mark: People would ask why I train so hard. Well, I train so I can eat. That is one way to look at it.

Brad: Jim Fixx said that.

Mark: Exactly, the late Jim Fixx. In the last ten years that has flipped itself on me and now in a sort of an epiphany I had a few years ago was that I wondered how little food can I eat and not get hungry and still maintain body mass and energy levels and all this other stuff I want to maintain? In other words, I am not sacrificing. What is the minimum effective dose? What is the least amount of food that I can eat to get through the day to feel satisfied, sated, have enough energy, maintain muscle mass, be able to play, and do all the things I want to do. It turns out to be appreciable.... as much as about 30 percent calories than in the old days.

Brad: Your metabolic rate is more efficient.

Mark: Right. And some people will say right away. You want to have a high metabolism. That it is a good thing to have a high metabolism. I am suggesting...

Brad: It is accelerating your life span.

Mark: Well, it is accelerating your life span...you are burning through a lot of calories. You are creating a lot of reactive oxygen species. So provided, once again, that I don't get hungry and I don't feel like I am sacrificing anything, because I want to enjoy food. I love food. It is one of my favorite things to do is to eat. It is that point at which you recognize that it is okay to push the plate away and say that was a great meal and I have had as much as I need for right now. I feel comfortable, satisfied. I won't go to bed with a bloated belly, a racing heart beat because of what I had to eat because it was too close to my bedtime. There is a sense of comfort in there. All of these kind of little nuances that happen as a result of developing this intuitive ability and skill.

Brad: [00:28:49] A couple of other things come to mind. Personally, and people have told me the same thing. Not at Primalcon because everyone ate like crazy for four days. But when you are in this new mode that you describe very well, sometimes you might even get hungry and have so much appreciation of this sensation of hunger that comes along, however, long duration the waiting period is...a half hour...hour or whatever. And there is the fantastic satisfaction of the meal, rather than being constantly overfed or fully fed your entire life, which, indeed, does accelerate and shorten your life span.

Mark: Thanksgiving.... the holiday season is a good example of that for me. I am not a big fan, just because there is so much eating going on. There is the pre-meal and in our house, anyway, well you can't skip breakfast on Thanksgiving because you want to prime the pump or whatever and we have all this good stuff going on. Depending on what time we have Thanksgiving dinner, there has to be some form of hors d'oeuvres being passed around. Well, the hors d'oeuvres would constitute a regular meal in most households and by the time the Thanksgiving meal rolls around, I am not really even that hungry. And even if I am, you finish the meal and then there is dessert and all this other stuff. It is really a great mirror to look at my life up until now and go WOW. If I am that susceptible and I am taking part in this ritual just because the family is here, how many hundreds of millions of people do this, not just at Thanksgiving, but every single day where they are literally never letting themselves get hungry because they are so into the routine of breakfast, mid-morning bagel, lunch, mid-afternoon snack, dinner, bowl of ice cream in front of the TV ritual?

Brad: If one of those falls out of place one day, they get emotional about it. Cranky or whatever. All of a sudden you are back to the emotional relationship with food, which was the start of our lengthy answer to the question.

[00:30:58] We will hit a few more quick ones. One of them is about your talking about "Don't just sit there" launching eminently the dangers of prolonged sitting and prolonged stillness in particular. One question that comes in is asking, "Why is sitting on a chair worse than lying down on the ground or on a bed? Or what about an easy chair? Is that better than sitting in a chair?"

Mark: It is not necessarily better and it is not necessarily worse. It is just different. This is the essence in "Don't just sit there" which is Katy Bowman's message, which I think is brilliant. Throughout human history, we didn't have chairs, sofas, divans, cushy beds to sleep on, not even hammocks. There was

constant changing of the body position, pressure points on the ground that would benefit the humans. So the fact that you were not lying still in one position for hours and hours at a time in a comfort state is not necessarily a bad thing. It is a good thing. The body wants to be changed in position. We are basically upright bipedal people who are living segues. A segue is a two wheel vehicle runs on gyroscopic, and figures out where upright is based on gravity. We are sort of doing the same thing. It amazes me that we can stand upright on two feet, if you think about it. Why don't we just fall over? These little platforms that we call feet are tiny. But the body is designed to be put through many different planes of motions throughout the day, many different ranges of motion. Sleeping is one of those. If you change positions in your bed a lot that is a good thing, not a bad thing. Sitting is one of those positions we assume during the course of the day if you change positions. I was in a long meeting this weekend in Scottsdale and I probably flipped the chair around four times between sitting on the front part of it and flipping it around and leaning on the back part of the chair, putting one leg out back behind me so that I could stretch out my quads and my hip flexors. The people in the meeting were wondering what is he doing?

Brad: Once you go down that road of every day movement, there is not turning back to the stillness.

Mark: As a plug for the program, "Don't just sit there," it is going to be an amazing issue for people who spend a lot of time in stationery positions at work.

Brad: Even standing up?

Mark: So the stand up desk is still not the remedy.

Brad: The remedy is changing position constantly.

[00:33:34] Here is someone who writes in about the low-carb flu ...the 65,000-pound gorilla in the room that no one wants to talk about. They write, "I have had great success cutting out junk food, sugar, and alcohol, and for going on three years now, getting great primal-aligned exercise routine with high-intensity long back packs in the Sierra and so forth. I'd like to get into ketosis, but every time my carbs get below 90 grams per day, I feel terrible and never seem to get through it. I have constipation, bad sleep, headaches, weakness and nausea. How can I deal with this.?"

Mark: First of all, there is no rule that says you have to get into ketosis. There is no hard fast primal mandate that says you gotta get below 90 grams of carbs a day. I gave a window of 0 to 150 in the carb curve. I said from 100 to 150 grams of carbs a day is weight maintenance with grace and ease can happen. You can eat lots of vegetables and some fruit in that arena and maintain that weight quite easily. This person is talking about being at 90 grams of carbs a day and dropping below 90 seems to create a problem. If you want to go into ketosis recognize that what happens is the brain is used to a certain amount of glucose and if you withhold that amount of glucose from the brain, the brain gets cranky. The brain asks, "Where is my glucose? You have been providing me enough glucose to get by on a regular basis for a long time and now you are not. If you are going to do this for a long time, then I (the brain) am going to build a metabolic machinery to burn ketones because that is an alternative fuel that I can use instead of glucose." There is going to be a transition period of about a week when you drop below that standard glucose provision, and in this case, for this person it is 90 grams of carbs a day. When you drop below that, your brain isn't getting the glucose and it is trying to build the metabolic machinery handle ketones. It just hasn't done it yet. A week in, it will have started to do it. In that week it'll be uncomfortable. For some people it is a breeze. It is not a problem at all. For other people, it is hell. It is terrible. I would say if you try it and you really want to go through this for a week and see what happens on the other side. If you can suck it up and hang in there, it is worth it as an experiment of one. You won't hurt yourself, but be very careful. You talk about constipation. Maybe you supplement with resistant starch. If you cut your intake of green leafy vegetables down to the point where you are consuming fewer than 50 or 60 net grams of carbs a day, by all means you will find ways to...take a probiotic. Take some resistant starch. They don't negatively impact your experiment of going into ketosis.

Brad: Have a few green bananas...three, four, five...whatever you want. You and I have both experienced too during our somewhat intensive athletic efforts. This guy in the longer version of the question talks

about his kettle bell workouts and his Tabata sprints and eight-day backpacking trips in the Sierra. So if you are burning a lot of calories, especially glycolytic workouts, it is a slippery slope to try to engage in this ketosis.

Mark: Certainly, if you are going to drop below a certain number in this case 90 grams of carbs a day and maybe probably below 70 to get into true ketosis. So as an experiment, don't do any heavy lifting or heavy workout in that one-week transition period. Make sure that what you are doing is long easy hikes or long easy walks or bike rides or whatever minimal 50 percent of your normal weight training and certainly, again, take care of your gut biome with resistant starch. Make sure you are taking some bone broth or some electrolytes supplements because that is going to be an issue as well. That may be the reason that a lot of people experience this low-carb flu is they are not addressing the electrolyte imbalance...some potassium, magnesium, a little bit of sodium...those sorts of adjustments can maybe make a big difference.

Brad: [00:37:33] That's great, Mark. I think we have time for one more question. So we are going to take it from a live caller. Joseph, you are on line 3. Sorry. We are having technical difficulties. Let me just read it. I am just kidding. We don't have live callers but I thought I would mix it up a little and keep you guys anticipating this great final last question and many more lined up, by the way so we will get you back in to hit some more questions.

Joseph wonders: When you are writing for the blog, how do you deal with the possibility of confirmation bias. Do you ever worry that the research you read may be just in fact what you want or expect to read?

Mark: Well, I have to say that I try to be as objective as possible in writing these articles. However, I have a belief system. I do have some biases that I am looking for in some of the research and anybody who is in my field and doesn't admit to that, is telling a lie.

Brad: They are biased.

Mark: Well, they are just lying. If they claim to be 100 percent objective about it, it is very difficult to do. So I look for the research that would support my position, for sure. To the extent that research looks objectively sound and confirms whatever thesis I am trying to put across. I think you will note in my writing, I have left the door open on many occasions for the possibility that we could be wrong or we could be just misinterpreting the data. I have a real problem with scientists who, in their own write-up of a study, in my estimation, might interpret the data just because they've done their own confirmation. I have seen a lot of headlines of studies would suggest one thing and then you dig deeply into the study and you find they were just cherry-picking the data. You could have come to an almost opposite conclusion from that.

Brad: Well, in your opening message on Mark's Daily Apple, "Who am I," and you talk about the fact that you are not beholden to anyone. Unlike an academic, and Timothy Noakes talked about this, too, when he changed his position with his whole career at stake and all the money that has been funding your lab for years and years. You want to fall in line. That is what the government has done with all the flawed food research. In your case, you are an outside observer basically and you have every reason to be independent or more reason than someone who is wedded to the results.

Mark: Yes there has been a whole brouhaha on the Inuit and whether or not they were as ketogenic for as long a period of time as some of the research studies would have reported in some of the initial books and as a result of that acknowledgement that maybe they were not always deep into ketosis and maybe they had access to seal liver that contains glycogen or seal muscle that contains glycogen and therefore that was considered carbohydrate...blah, blah, blah. I look at those and I kind of chuckle and I say here is somebody who is looking to confirm that they are right and we are wrong. I say that is interesting but that doesn't change my viewpoint on ketosis, for instance. I am not a person saying you should spend your life in ketosis. In fact, ketosis is just a tool. Ketogenesis is a wonderful mechanism by which the body, in my humble opinion, prompts itself to create more mitochondria, more efficient mitochondria, which only serves to enhance how you metabolize fats and carbohydrate at the same time. So why not improve the amount of mitochondria and why not do so by playing around with the occasional cyclic ketogenic diet. But I am not a person who says you have to spend your whole life in ketosis in order to get certain benefits because the Inuit did that. So kind of always look at this as these are just little tools and tricks of the trades and I hate the word "hack", but I'll use it here. Bio-hacks that we can implement because we know what the effect is in our genes. We have a sense of what the long-term effect might be. We will never know.... well

not never know...but right now, we may not know what the long term effect might be because we have only been doing this for ten years. So here is an example. When I was a runner back in the late 60s and early 70s it was presumed that the more you ran, the healthier you were. A generation of athletes took on as much mileage as they could because they had read that the healthy heart depends on aerobic exercise and cardio and the more cardio you do, the longer you will live and the healthier you would be and the skinnier you would be. We thought for two or three full decades that was the way it was supposed to be and it made sense. Now we are discovering...maybe not. Now we are seeing people of my generation drop dead from heart problems from having trained too hard. OOPS!! We were wrong there.

Back to the original premise which is how to maintain some objectivity and stay away from confirmation bias. I have some theories that I want to be true. I am hoping they are true. I do a lot of research to try to prove that they are true. But in the event that they are not true, I will be the first one to back off and say, "Whoops! Made a mistake. My bad." However, and I will finish the podcast after this, I have been contemplating writing a post just over the past couple of weeks. I have been saying to myself, "So many of these things that we started predicting ten years ago, are starting to bear fruit and look to be, even though they were wacky assertions early on, now would appear to be accurate and having long term positive beneficial consequences.

Brad: Well said. We'll get into some of those things that have turned the corner now and are getting more and more mainstream acceptance such as the barefoot minimalist scene and so on. We'll have some good topics teed up until next time. For now, Mark Sisson, thanks for a great show and coming into the studio to hit the Q and A hard. I am your hose, Brad Kearns, until next time. Thanks for listening to the Primal Blueprint podcast.