

VIDEO_ Diet Doctor Podcast with John Limansky (Episode 16)

Dr. Bret Scher: Welcome to the Diet Doctor podcast with Dr. Bret Scher. Today is my pleasure to be joined by Dr. John Lemanski, bio hacker, M.D. John's story is a story that's not that uncommon. He was very healthy and active and competed in triathlons or at least he thought he was healthy.

And then he found out maybe not so, that he was actually pre-diabetic and this was in his 20s so pretty young for that to happen and that set him on this course of becoming a bio hacker which he'll define for us because that has a lot of different terms. But basically he learned how to use nutrition to heal himself and then tried to use that as a doctor to heal others and that's a fascinating journey that he's had.

So I hope you appreciate his story and along the way we'll pick up some tips about how we can incorporate his lessons into our lives to make things easier and what it means to be a bio hacker, what that means for nutrition and for sun exposure and when that can go a little too far.

So I think that's really important to keep in reference that a lot of the things we see in terms of bio hacking are expensive and of questionable utility so John is going to help us figure some of that out and figure out how to evaluate that. So it's a great discussion. We also talk about families and kids which is near and dear to my heart so I hope you enjoy this discussion with Dr. John Lemanski.

Dr. John Lemanski welcome to the DietDoctor podcast. Thanks so much for joining me today.

Dr. John Lemanski: Thank you for having me.

Bret: It's my pleasure to have you here. So your story is unfortunately a story that's not that uncommon nowadays. Someone who prioritizes their health, is busy in their life, is taking care of themselves and a triathlete and yet finds out despite being in med school, competing in triathlons that you're not that healthy. Tell me a little bit about that discovery and what that meant for you.

John: Well, like you said it wasn't a weight issue with me. It was a question of I'm following what the guidelines are in terms of dietary, I'm exercising probably more than I should be and I am relatively thin and yet the question is I check my lab work

and lab work was HbA1c, fasting insulin, and obviously just your basic chemistry found that my insulin level was very high, my HbA1c was relatively normal, but still I was showing signs of insulin resistance just based on my fasting insulin score.

And so the question to me was as a medical student I think I know everything, you know, I am young, I am healthy, I'm doing all the right things that I've been told and yet these labs are not showing or not reflecting that. And that was pretty scary, was pretty eye-opening to me at the time. So I wanted to see why is this... is it genetic, is it dietary, am I exercising too much?

Which could be a possibility and really got led down the path of no, it's actually what I'm eating. That's driving most of these lab abnormalities. And it was beyond just the lab abnormalities, it was also how I felt. And so I'm sure you can remember back when you're a medical student, but you're always tired and you think, "It's because I'm studying all the time."

But then I never got better and it was a question of how can I be so exhausted all-time and yet, you know, I'm young, healthy and fit and it must be an answer to that question.

Bret: So what were you eating at that time? Was it the standard American diet, was it processed foods and chips and sodas or was it healthy whole grains and fruits... like what was the mix?

John: No, it was mostly healthy whole grains.

Bret: Quote, unquote.

John: Right... a lot of quinoa, pasta, bread, a lot of fruits, a lot of vegetables, really no fast food, so it wasn't fast food, it wasn't processed food. Maybe, you know, maybe healthy processed food. So whole foods, processed food, that you think it's healthy, but it's not. Because it still if you look at the container and you look at ingredients, most of the ingredients are going to be some form of sugar initially.

But, you know, very little protein so I was more kind of a pescatarian, not too much protein and essentially no fat. If I was eating fat it was from olive oil, olives and things like that, but otherwise I was pretty much avoiding that.

Bret: And this was in your 20s, basically in medical school. So that's I think so interesting for you, it seems like it's much earlier than the average person we've heard of this happening. So maybe there is a genetic component to it to suggest when it's going to affect us and for you it was earlier, but that kind of diet certainly can affect anybody in anytime.

John: And I think also you have to take into account some of the other factors at the time. So obviously studying, being up all night, so stress response to be in medical school, being up, the stress of that, also was probably playing a role now that I look back. But I still think genetically and dietary was the main cause of that.

Bret: And this was like 15 years ago.

John: Yeah.

Bret: And so from there was your first intervention, a ketogenic diet to help reverse that or did you have steps along the way?

John: So there wasn't much information about keto at that time. I mean it was quite a long time ago. Atkins was kind of in the rebirth phase at the time. I started reading about Atkins, I've known a few people who had tried it and had had great weight loss success.

I was a biochemistry major in college and so going back to the biochemistry and understanding how we are actually processing the macronutrients, what's the process that's actually happening, Atkins seemed to be a little bit more in the line of I think this is going to be healthier, which is based on simple biochemistry. I didn't like so much the amount of protein that I was consuming based on that.

If you remember I went from pescatarian, really like 30 g of protein maybe a day, so pretty low on the protein, pretty high on the exercise, so that probably was not a good combination. But going to much higher levels of protein I didn't feel as good. And then just kind of researching, going to pub med, going to library at the time, you know, Google wasn't a big search engine like it is now and looking at the research studies that were out there at the time about keto it just made more sense from a physiological level.

So I started kind of transitioning into more of a ketogenic, low-carb I would say initially because I still do like vegetables. And then as time has progressed and now we have ways of really measuring blood ketones, breath ketones, glucose much easier, I've got kind of transitioned into going into ketosis quite exclusively and then maybe coming out once in a while, but doing more of a low-carb. So it's a process I think like most people experienced, it's not get it right the first time.

Bret: Well, what's so interesting is you're like the perfect person for that to happen to, because you're in medical school, because you had some knowledge and you are the type of person who wants to dig into things deeper and you're the self-experimenter. So that's sort of like sort of kicked off... it sounds like that kicked off your N of 1 experimentation that you continue to keep up with.

John: Right. I'm always interested in pushing the limit of our understanding of things regardless if it's sports or health. Yeah, I agree it's probably a perfect match in that sense.

Bret: And then to talk about your medical career. So from there you went to be a hospitalist in Mississippi, the heart of the obesity and diabetes epidemic and I'm sure you just saw some horrendous things in the hospital that could've been prevented but weren't.

John: Correct. So I did internal medicine and my goal... I was young, idealistic, I thought I would change the world in terms of health. I had this understanding of what it could do for me just on the physiological level and I had this understanding of what other people who are using it were experiencing in terms of getting off diabetic medications, blood pressure medications.

So I figured, go to the worst state in the country where it's a problem that is I think worse than just the statistics would show. And it is devastating in the south and now really in the rest of the country, but one of the main factors in terms of risk factors for most things is age. So if a 20-year-old comes in complaining of chest pain, you're not going to run to the cath lab with that patient.

Now for a 50-year-old you might think a little bit more in terms of doing that. In the south we would see MIs in people in their 20s and 30s, people on dialysis, people who would have cardiomyopathy with EF of 10%. Maybe obviously genetics is an issue, but really no other factor that we can look at and say, "This is what's driving this." So that experience was eye-opening in the sense that I saw the worst possible outcome of everything that you and I are discussing at a very young age.

And so we're in a situation there where we talk about healthcare for everybody, should we not have Obama care, should we have some new form of healthcare, but the question that I think is never raised is how we're going to manage chronic medical diseases, which are starting at such a young age and trying to maintain health and happiness for those people. So that experience I think was eye-opening in many ways.

Bret: Yeah, for some people I think it could be incredibly depressing and make you sort of want to give up and for other people would be empowering to say, "How can I fix this?" And so luckily for you it seems like it was the latter.

John: Well, I think you get frustrated especially if you have patients that you see over and over and over obviously in a hospital setting. We don't have follow-up, we don't see patients in the clinic, but I would see you know patients come back within a few days of being discharged with really no change in their underlying condition. We

just happened to tune them up perfectly with the right combination of medications and then four days later they're right back.

So you get into this question of is that a futility of care? Is there a better option? Is there a way to maybe prevent these things from happening? And should the focus be on that? And for me it was kind of a no-brainer at that point. I felt like I could make more of a difference by preventing what I was seeing in the hospital than necessarily just treating it after the fact.

Bret: It's interesting that we use the word "tune-up" a lot, sort of like we are car mechanics, just tuning things up. Not fixing a problem, not reversing the problem, just tuning it up and the words we use matter and reflects our philosophy and for a lot of doctors that's the philosophy.

John: Well, it's frustrating I think, it's extremely frustrating, because how good of medical care is that where you are just tuning people up? Versus actually really getting down to the root cause and addressing that and then watching those symptoms that are presenting, kind of disappear.

Bret: So then you have this dramatic transformation from a hospitalist, seeing these types of patients to having more of a one-on-one, I guess you could call it concierge, but that comes in connotations, but an one-on-one personalized approach with patients and frequently using a ketogenic diet in those patients. Now do you use a ketogenic diet in pretty much everybody or how do you approach that and how do you evaluate them to see what diet is that's best for them, for their situation?

John: Yeah, great question. I think you see in the conferences this push towards individualization. So everybody is different based on the genetic factors, based on their lab markers, kind of what their goals are. I think nutrition is essential to everybody changing, whether it's going from a process to fast food diet to just eating real food, I think people will have tremendous success in reversing a lot of their markers. For me it's a question of what is the goal of the person.

So keto or low-carb I'd say is ubiquitous for the patient population that I take care of initially. And to stress by... based on how metabolically sick they are. And so I think Gary Taubes put the slide up yesterday about this sensitivity to insulin, everybody has a threshold in terms of how many carbs they can consume before they really kind of push the insulin level back up. Same thing happens with the patients that I take care of, it's really figuring out first what is their threshold. So are they metabolically sick? Do they have diabetes? Which a lot do. Do they have insulin resistance? A lot do.

Do they have high blood pressure? So do they have risk factors that need to be addressed more aggressively initially, then they'll be ketogenic to begin with. And

then eventually it's a question of can you transition back into more of a low-carb? Because I don't think everybody needs to be in strict ketosis all the time. But I think it's an extremely powerful tool to be used for specific situations.

Bret: And that makes a lot of sense If you're treating diabetes, if you're treating insulin resistance. The further you can go on the spectrum the better you're going to treat it. But at some point people want to change sometimes. Some people love being in ketosis, they feel better, they think better and they never want to do anything differently.

Some people sort of miss some of the lifestyle they had before and want to find a happy medium. So what do you use in your practice to decide is somebody "ready" for that and how do you follow them? Do you do oral glucose tolerance tests? Is it based on their insulin levels A1c? What kind of tools do you use?

So the first thing before we even talk about how to transition I would say a good way to kind of keep people in this situation where they want to stay in ketosis or they want to be restrictive is making it applicable to their cultural situation. So for instance in the south, you know, barbecue, drinking will be a big kind of social gathering factor, so trying to figure out how do you actually make low-carb keto accessible to people who want to stay in those situations? And there's tricks you can use.

But let's say just from a clinical perspective if somebody wants to transition from keto to low-carb, a couple of things I'll look at. So I don't really like the oral glucose tolerance test. I do like it in combination with the insulin test. So I think that gives you a lot more information. So doing a fasting insulin, doing the glucose tolerance test, doing the insulin test to see... number one is fasting insulin suppressed in general.

But number two, what is the response? So if they're still having an exaggerated response then their threshold of carbohydrate intake will probably be much lower than somebody who has a normal physiological response. So obviously using metrics like HbA1c is important, blood pressure measurements, high-sensitivity CRP, things like that, but the main ones I would say are have they reached their goal in terms of what they're trying to accomplish? Do they have an abnormal response to that test? What is their fasting insulin?

Bret: And so a lot of people will say, I want to be ketogenic to lose weight. And once I hit my weight goal, okay I'm all right, I'll back off a little bit. So what are your thoughts on weight as a metric versus some of these other metrics you mentioned?

John: Yeah, I hate weight as a metric. It's probably one of my biggest pet peeves. I tell people weigh themselves one time initially and I prefer things like Dexa scan or Body Pod to get an actual lean body mass perspective, what's the visceral fat, because it is much more important, we're looking at getting rid of visceral fat, obviously some subcutaneous fat, fatty liver disease, we are looking at trying to reverse those things.

So I tell people, "Weigh yourself initially and then don't weigh yourself for a month." Inevitably I find that most people come to keto because they want to lose weight, that's the number one driving factor and it makes sense.

But most people as they transition and they start noticing things are getting better, so their joints don't hurt, they don't have headaches, they are not frequently hungry, they are sharper, more cognitively sharp, inevitably that becomes really the driving factor I think for most people to want to stay or at least kind of transition in and out.

But in terms of answering a question, you know, everybody has a weight goal that they want to get to. I use body fat percentage as a better metric and I try to encourage the people I take care of to use that as their metric. You know, how is your visceral fat responding to what we're doing, how is the body fat percentage responding.

And so if we get down to the goal body fat percentage, visceral fat is gone, lab markers are back to normal, then yeah, I think it's a very reasonable question to say, let's try some different things, let's expand your carbohydrate. I think Andreas showed very nicely that in a ketogenic community we also have given carbohydrates a bad name and they're not necessarily bad. Obviously highly processed ones are going to be detrimental to our health, but incorporating healthy vegetables I think is a perfect way to transition.

Bret: Diet is a tool and you have to use the right diet for the right job basically. And then of course when we talk about the food we eat we also have to talk about the timing, when we eat and when we don't eat. So time restricted eating, intermittent fasting gained a lot of popularity, as something that's been around for ever basically. So what are your stages of helping people using that to benefit their health?

John: We like to make the old new again and we take concepts that I think have been used for generations and then bring them back and say, look I have this new thing. But ancestrally I mean it's how we essentially lived. Taking somebody who's on a western diet and saying, "We will get you into ketosis, we're going to fast for five days", you'll probably lose that person for the rest of their life and never going to do that again.

So initially I think my approach is change your diet, so change it from what you're eating to low-carb, to keto, get adapted, get fat adapted, actually make the enzymes that you need and then start incorporating some other factors, like time restricted feeding, intermittent fasting, longer-term fast, because I think that's an extremely powerful way of suppressing insulin.

Plus I think there's a lot of people who will reach a threshold where they just cannot break through that kind of plateau. And incorporating something like the intermittent fasting tends to help tremendously.

Bret: You know what's interesting is people talk about their stalls and their plateaus usually again with weight. But we can see the same things whether it's HbA1c or glucose tolerance and fasting seems to work for that as well.

John: Correct, and that makes sense because you're really again going to the root cause, which is insulin being elevated to trying to suppress those as much as as possible. Plus what I find interesting at this time is that the research that's going on to support these claims is also extremely powerful. So looking at studies that show that you actually need to have periods of time where you're not eating to activate enzymes needed to do beta-oxidation.

That makes sense that you'll be able to deplete your glycogen storage to some degree, start beta-oxidation. So people use weight as metric but that's the reason, is you are actually going to the underlying cause and addressing it. And for most people I think it's pretty simple to do an intermittent fast, especially if you do it, you know, early dinner, late breakfast... It makes perfect sense for most people to be able to do that.

Bret: One of the interesting concepts about intermittent fasting or time restricted eating and the body's natural circadian rhythm is to try and do them in tune, but what I find is that goes against sort of our social constructs. The traditional intermittent fast is to skip breakfast or have a late breakfast and then have dinner because that's what fits more with our society.

I want to have dinner with the kids and the family, dinner is a social outing, but it seems like our circadian rhythm would say the other way. We should have the breakfast and skip the dinner. So how do you balance that with your patients?

John: Yeah, that's a great question. I think Marty Kendall down in Australia is doing a lot of independent research about the timing of food and his argument would be that from a physiological perspective you should be eating breakfast as your main meal. The way that I kind of make the argument is you're giving yourself a period of time where you're not consuming calories.

For me I do it this way where I eat dinner and then during the day I don't eat much. And I do it because I want to have dinner with the children. So I think in the big scheme in terms of all the different things that you will do to improve your health, if the timing of your main meal is really the deciding factor, then I think we've probably gone overboard.

So I would say, and I know I'm kind of hedging on this question, but I would say if it's going to allow you to do it and dinner is the best way because you want to have family interaction, then I would do it that way. If you don't have a-- let's say you're single or you have a girlfriend or you don't have this kind of idea that you have to eat dinner as a family, then yeah, I think eating in the morning is perfectly fine.

Bret: And I don't think it's a hedgy answer, I think it's a great answer. You don't want perfect to be the enemy of good basically. And even if our insulin sensitivity is worse in the evening because of the circadian rhythm, the main goal is having a space between your meals and whatever it needs to accomplish that is the good. And then if you can do perfect, great, if not, it may affect your life.

John: And interestingly enough I think for people who are kind of type A and have to do a lot of work during the day I find myself personally that if I eat a very heavy meal for breakfast and make that the main meal, I am actually quite lethargic for a good portion of the morning which is when I do most of my work.

So I find it for me because I'm fasting most of the night, you know, I have high ketone levels, I feel very, very sharp when I wake up. I know it sounds monotone but this is me being sharp. But this is me awoken, so for me it works well in that sense and a lot of people that I work with they are also pretty active in the morning and so it works well for them too.

Bret: Yeah, it makes a lot of sense. So you've been known as a keto hacker and a bio hacker. And bio hacking is a term that gets used quite a lot lately and it has different connotations for different people and it can mean a lot of different things. Some not so pleasant to be honest and some pretty basic. And a lot of the bio hacking I hear you talk about seems rather simplistic, but I want to hear you kind of define how you see the term bio hacking and how you use it to help yourself and your patients.

John: Yeah great question. So I define bio hacking as making the environment work for you instead of against you which is a pretty simple concept. I think on one extreme you have bio hacking which does have a bad connotation in a way because some people are maybe pushing it a little bit too far injecting themselves with isotracer or doing stem cell injections which maybe don't have the scientific backing

yet, but on the other hand there are simple lifestyle modifications that are still I think to be considered bio hacking.

And those are the ones that I focus on. You and I as clinicians will talk to our patients about diet and exercise, but I don't think we necessarily-- and I don't speak for you, but we don't necessarily go into depth in terms of what that means. So we'll just say, kind of blanket statement, okay make sure you do that and exercise, but what does that actually mean?

What are some of the simple cost-effective really lifestyle modifications that you can do which actually from a bio hacking standpoint impact your health tremendously, probably even more so than maybe some of the more extreme forms of bio hacking. And I don't have anything against certain techniques like hyperbaric oxygen chambers and sort of other kind of more advanced bio hacking techniques that are being used but the question really becomes, how can you apply those to the majority of people?

Can you spend \$40 a session in a cryo-chamber? Well, most people will say, "I can do it once, but I can't do that on a regular basis." So then what's the benefit of having that? And so I really define bio hacking as what are the things that you can do to improve your health, affect yourself from a metabolic standpoint positively and do it cost-effectively?

Bret: Like getting out in the sun and getting more sunshine. I mean in some circles that's considered bio hacking, in some circles is considered common sense.

John: Yeah, but then you look-- You know, EPA came out with a statistic that said 90% of our life is spent indoors. So yes it sounds simplistic, it sounds like common sense and yet we're not doing it. So the question becomes how do you do it effectively from a time management perspective...? Because we'll strapped for time. ...And then do it without having to spend thousands of dollars on some gizmo?

Bret: Right.

John: And so simple things like going outside in the morning and getting sun exposure, getting actually the activation of your SCN, getting your circadian rhythm back in order I think is extremely important, focusing on sleep is extremely important. I just did an experiment where I worked five nights as a hospitalist.

I haven't worked nights in-- I don't remember when, I don't want to remember when, to see what's going be the metabolic impact. And so in five days I gained 7 pounds, not changing anything dietary, so maintained my normal fasting routine, just changed the timing, so there is an impact, so I was eating at night.

Fasting glucose was 15 points higher. So a part of that is probably because of the time of the eating and the sleep pattern was horrible. So sleep has a huge effect on our ability to be metabolically healthy. So simple things like that I think are extremely effective.

Bret: Yeah, I mean shift workers are a huge problem in this country and a lot of times they don't have an option, it's their life, it's their job, they can't change that. So what would you recommend a shift worker do to try and mitigate the negative impact of that type of lifestyle?

John: That was part of the reason for doing it, is to see, because I get a lot of questions, "I am a shift worker, I work late nights and no matter what I do I cannot lose weight. Why?" I think very similar to the people who were metabolically sick, if you're in a situation where you're not a shift worker, you probably have to be a little bit more strict in terms of being in ketosis.

At that point I think getting your circadian rhythm as best as you can is extremely important.

So getting sun exposure during the day, making sure that when you're sleeping it's quality sleep that's being tracked, focusing on some of the other biohacks to really kind of help in terms of pushing the envelope in your favor, because you have this major kind of obstacle which is sleep, which is affecting your cortisol, which is affecting your hunger levels, which is also affecting your desire for craving carbohydrates. So it's extremely difficult I think for night shifters.

Bret: So we've talked about sun exposure a couple of times and one of the things I think is interesting is looking at the data for sun exposure. It is hard to come up with the perfect level. Like ideally we would just be outside and play and have fun and get good sun exposure but like you said is not happening.

So what I have read it seems like 20 minutes of whole body exposure, not just like face, head, hands, but 20 minutes of whole body exposure seems to be like the minimum threshold that people should be shooting for, people like maximum benefit for minimal effort. So is that what you recommend too or you have a number in mind that you use?

John: Yeah, I agree with you and I think the data is not that strong either way. But I would say 20 minutes... hopefully people after this are not going on their front yard, you know, fully naked, getting sun exposure, but I think 20 minutes and also the timing of the day is important, so ideally noontime would be the best getting maximum exposure, but not getting too much, then you are at high risk of skin cancer.

Bret: Right, that's the balance. And that's why for people like us who were outside a lot with our athletics, but yet for me at least it doesn't count for sun exposure, because I had a hat or helmet, I've got long sleeves, long pants and I am not getting my sun exposure despite being outside and that's an important concept to remember. Like I'm outside plenty, I don't need to worry about that. Well, a lot of times you still do, but there is that balance.

John: Right, and I think doing it in a way where it's part of your routine, so I think even if you work let's say, going outside for lunch, getting some exposure, rolling up your sleeves would be a good way to at least get some sun exposure, at least get some vitamin D production, but otherwise I think 20 minutes is probably ideal.

Bret: And what I love about that is it's free, no gadgets, you don't need anything, just walk outside. Now I see you have two rings on.

John: Yes, married only once.

Bret: Yes and then the other I assume is an Oura ring.

John: Yes, correct.

Bret: So now we get into gadgets. A bit more expensive and technology. Some people love it, they get into the technology and want more and more and some people are hesitant and afraid of the technology. So is Oura ring sort of one of your basic go-to technologies that you recommend?

John: Yeah and I don't have any affiliation with Oura ring, but I think for me, I am more of a data person, I probably should've been an engineer like most of the other speakers, but I think data for me helps drive changes in our behavior. So for instance I know I get instant feedback from... let's say I eat later at night which for me I noticed would cause certain things.

So I wouldn't have the deep, the REM sleep at levels that I would want to get the restorative sleep. I would notice that my resting heart rate would take a lot longer to come down which makes sense. I would notice that the quality of sleep was not good. So changing timing of diet for me was based on sleep patterns and fasting glucose, but mostly sleep patterns. So I do think there is a balance because there is so much technology.

Which ones are going to be the most effective? In my opinion after nutrition I would say sleep is the second most important factor in people, whether or not that's science base or not, just my clinical experience, that's what I've noticed. So I think yes there

is a cost associated with it, but the amount of feedback that you get to me is tremendous.

Now there's a lot of other gadgets out there I wouldn't spend a dime on. And so there is this balance of trying to figure out which ones are going to be useful versus which one are just going to be for fun to show you have a new gadget.

Bret: And can we do it another way? As if you drink too much alcohol one night or eat too late, it will affect your sleep. You know that, you don't need a gadget to know that. But if you want to fine-tune it to more detailed or less obvious causes, then maybe the gadget comes into play.

John: So for most people that I work with they are really looking forward that extra edge I guess in terms of whether or not to improve cognition so that they are more successful in business. For them those little changes do make a difference. But at the same time it's not a question of just using the data and focusing solely on the data and making changes to improve the data. It's using as a tool.

Kind of like you would use lab markers as a tool. You could run a plethora of labs that might impress people, but are you going to use those or are they going to be useful for you or is it just going to be an added cost? And so I think it's really weighing that balance based on your clinical experience what's going to benefit you.

Bret: Yeah, that's a great point that you bring about the labs, because I think it's pretty clear in contemporary medical practice, they are just scratching the surface of what is available on labs, and no one is checking fasting insulin hardly, advanced lipid testing, but yet on the other side you have some doctors and practitioners who just check thousands of dollars of labs, most of which is not going to have much of an impact.

So you've got to find that middle ground as well and the same for technological information with bio hacking our lifestyle.

John: Absolutely. When I started I was that doctor who would check a plethora of labs. I don't even know what half of the labs were in terms of interpreting, but I think it also as you gain experience you realize you need less tests, but you need them to be very specific to what you're looking for.

And so same thing I think applies with the technology. I would rather spend money on something that I think is going to beneficially impact my health and it's going give me data to do that, but I wouldn't spend money on something that I think is just another gadget.

Bret: Like simple sleep hacks could be just an eye mask and, you know, 10 bucks for an eye mask or less and you need that multiple hundred dollar Tom Brady smart pajamas for your sleep hacking.

John: I'll take one, but no. Is he selling those?

Bret: Yeah, I think it was last year, I don't know if they survived or not, but there were these smart pajamas that's supposed to you tell you how much you're moving and your respirations and so forth.

John: I mean, you can get on the extreme words, a lot of kind of fad tools that are not useful.

Bret: So one fad tool, or one tool that seems like it could be fad and others swear by it is saunas. And when people think of a sauna, they probably think of you go to the gym, then you go to the sauna, and do sweat it out a little bit and release the toxins as some people say, sweat out the toxins, but now it's taken on a whole new meaning... infrared saunas, regular saunas, people are buying saunas for their houses.

So again it gets into that next level of this isn't necessary for everybody, but does the science back up the investment? And some people could say yes, I am curious to get your opinion on that.

John: So depends on what your goals are. So in terms of most of the science that's come out on sauna, it's Scandinavian, mostly from Finnish countries, but that data is really looking at cardiovascular health for the most part and there are some other studies that look at the impact on cortisol levels, on fasting insulin, on heat shock proteins, so there is data that is coming out and I think one of the exciting things about the bio hacking kind of world now is that a lot of research is being done to find out is there actually basis to this?

And the studies that look at cardiovascular health are in my opinion pretty impressive. Does that merit a \$4000 or \$5000 investment? Probably not for most people. Again going back to cost and cost being cost-effective, most people have a gym membership; whether they use it or not is a different story, but most gyms are going to have a sauna.

And you had asked me a question before we got online as far as biohacks and the way I look at it is number one, is it going to be effective? Number two, is it going to be safe? Are there going to be downsides as far as doing it? And then is it going to be applicable to people? I think when you look at sauna... is it effective? I think it's effective. I think in terms of a lot of people I work with really focusing on getting their fasting insulin as suppressed as possible. Sauna helps with that.

Bret: Does it?

John: Yeah. So it increases a couple of things, but increases insulin sensitivity in skeletal muscles. And so if you can actually impact insulin and fasting glucose, can you impact them metabolically? And I would say that you can. Is there a downside? Is there a risk involved with it? Sure for certain people, if you are elderly, if maybe have some cardiac arrhythmia, get dehydrated... sure, but in general I would say it's a safe modality that has been used for centuries.

And then is it applicable? I think for most people if they use their gym membership, they can go to their gym sauna they don't have to have a huge cost expenditure for that and it helps to think for a lot of people who use it.

Bret: Now I'd hate for someone to hear that and say , "I don't have to worry about my nutrition. I just have to go hit the sauna and improve my insulin sensitivity." So I'd imagine the impact it has is a fraction of what it would be for nutrition or fasting or time restricted eating. So would be again taking someone at the good level and trying to get them to a little bit higher level perhaps.

John: Again in pretty much any talk that I give I will say nutrition is-- I hate to use the image of a pyramid just because it's been butchered.

Bret: The food pyramid has been butchered.

John: Yeah, but we'll call it the keto hacking pyramid, but the base is going to be nutrition. And obviously my experience low-carb keto will be for the majority of people, then it's really getting to that next level in terms of optimizing your health.

A lot of people I work with are interested in living longer but they also want to live longer and healthier, they don't want to be dealing with chronic diseases and so for those people implementing certain biohacks like that can help take them to the optimization of what they're looking for.

Bret: And to get back to the sauna, when you said that outcomes have been for cardiovascular health, is it mostly sort of endothelial health and vasodilatation and--?

John: Correct. So most of the studies have looked at those two specific things and then mortality and morbidity which I know you can play with statistics but that's really the focus of most of the research.

Bret: Interesting, but I can't imagine it shows mortality difference for sauna use.

Bret: No, because it's such a short study.

John: And so if you'll recommend somebody to use the sauna at the gym since it's there, five minutes, 10 minutes, is there a threshold?

John: So 19 minutes is a threshold, so 19 minutes four times a day is really kind of the maximal benefit from that versus the trade-off of diminishing returns.

Bret: All right, interesting. I mean when new technology comes out like that, I think it's so interesting how to interpret the science and how to incorporate it to see if it works for people and I like your philosophy; does it work and is it safe? Is there downside? That's always a very important question. And then is it accessible? And infrared saunas, I would not recommend people to get them.

John: No, not at all. But something like-- You know, the question also is, do you get more benefit from that infrared sauna versus a dry or wet sauna? I would say the heat is going to be the most important thing rising your core temperature. There are some added benefits from infrared, but again is it worth the \$4000 investment? I would say most people would say no.

Bret: But in bio hacking circles that's what a lot of people are promoting. These amazing technologies that are sort of out of reach for most people.

John: Sure, which doesn't make sense.

Bret: We've touched on a lot of topics here and I just want to touch one more thing because you are a big family man and I really appreciate that personally and I'm sure a lot of our listeners do as well, but you are taking a little bit different approach on how you're raising your family and living your life. You're taking sort of a nomadic approach to things.

John: Yeah.

Bret: Tell me briefly about that.

John: I have always been a big traveler and I have traveled all over the world, I was fortunate enough to be raised by parents who loved to travel and I want to have my children have the same experience I think in a time where especially in the United States we are so polarized, we see things extremely different.

I think you can learn a lot about our country but also about people by being with them in different experiences, by learning what's driving their understanding of politics or religion or health. And showing how different parts of the country are going to experience a low-carb or ketogenic diet differently, based on resources, based on socioeconomic status, based on-- culturally.

So obviously people in the South will have different cultural norms than people in the northeast and yet we can all do some version of low-carb or keto but a bit differently. And I want to show how that's possible and maybe educate more people along the way.

Bret: That's fantastic. So you are just starting your journey now.

John: Yeah, next month we'll be going, we are starting in Puerto Rico. We had a really good expense there and so we're starting there and we're going to travel up East Coast over probably North and down the West Coast and then in the middle of the country. And then fingers crossed but maybe do that in Europe afterwards.

Bret: Fantastic, I mean that's such an unique experience.

John: I mean it sounds good. Call me in a month and ask me how I am doing, but yeah I think it's very easy to get stuck in kind of the daily routine and I kind of talked about this, but then the question really becomes are we exposing our children to different cultures, to different experiences? I think if we can do that we will be better off as a nation, we'll understand each other better, hopefully we'll get away from kind of the political swings that we're seeing.

Bret: In transitions like that, in travel like that, can be tough on health and nutritional routines because we can talk about routines in a negative side, but we can also talk about routines in a positive side that you're able to take care of yourself better with sleep habits and nutritional habits. So I am anxious to see how you come up with more hacks for that.

John: Yeah, luckily I have been traveling for quite some time and so I've come up with hacks for myself, but it's a different story when you have three little children who are hungry and they want something different than boiled eggs and, you know, avocado.

So it's definitely an experience but it's also a way to show other people who are dealing with children maybe how to actually transition them over to more of a low-carb version. I know that's a big struggle for many families, is they are low-carb, they've seen the benefits, but they transition their children and they don't have to be ketogenic, but maybe transition them over from the junk processed food... How do you do that? How do you do that when you travel? I think those are topics that are always being brought up.

Bret: Right, and the age of the kids matters too. I imagine in the teenage years it can get a little more challenging as they need a sort of independence.

John: Yeah, we have to do it now before they are taller than we are.

Bret: Right.

John: That's the goal, because once they are taller, you know, all bets are off.

Bret: Right, don't make it a power struggle, but make it a teaching.

John: Exactly, make it an adventure, we label it as an adventure and I think at this point they see it that way. And hopefully they will have good memories that will help them mature as good human beings.

Bret: That's what's important. Well, dr. John Lemanski thanks so much for joining me. Where can people learn more about you?

John: Biohackmd.com and in social media biohackmd is most of it.

Bret: Great, thanks for joining me on the Diet Doctor podcast.