

Paleo Solution - 351

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Robb: Hey, Folks. Robb Wolf here. Another edition of the Paleo Solution Podcast. Very happy to report that the Lazy Lobo Ranch did not wash away in the flooding that occurred around Reno. We came within a foot of our irrigation area actually flooding the house but we came out of it okay. So that was a little touch and go but everything is going well on that.

Very excited for today's guest. He is Kamal Patel. He is the Director of the outstanding research website and publication Examine.com. Kamal has a Masters in Public Health and also an MBA from Johns Hopkins. Apparently he's taken a bit of a hiatus on his nutritional PhD program and is reporting to us live from the sunny environs of Honolulu, Hawaii. Kamal, how are you doing?

Kamal: As you can guess, I'm doing pretty well.

Robb: Absolutely. Yes. Hey, it's really great to have you on the show. We've had, I guess, interactions via the interwebs for years and I think have ran and crossed each in real life a time or two but I've never really got a chance to sit down and chat with you at length. So this is going to be a lot of fun.

Before we start recording I mentioned that we tend to get a lot of career path type questions and people looking for jobs or what they want to next. And you have quite an eclectic background. Could you talk about that? What brought you into graduate programs, the interesting health or ancestral health orientation then the founding of Examine?

Kamal: So like a lot of people, I listen to your podcast. I was always interested in a bunch of different things. In college I was an Econ and Communications major so nothing to do with science. And then I got into science through being a wannabe power lifter. And then as I've tried to get bigger, I've learned that nutrition is much more important than your reps or your cadence at the gym.

And then I did that for a while and then I got more into health stuff. And in the past probably 10-15 years it's more of evidence-based medicine and nutrition and then some other things I'm personally interested in. So my PhD research was on nutrition and chronic pain. And I worked for a while at a meditation research center. And in the PhD program my course work was mostly in food policy because I had an Econ background.

So I like to look into different things. And for my own lifestyle, mostly I focus on awareness and meditation and habits and that kind of thing because it often seems to be more important than sort of what the different uses are for B12 or different types of creatinine or that kind of thing.

Robb: Right, possibly a bit more life applicable significance, for sure. Yes. Hey, I'm curious. I do want to dig into your background a little bit more but maybe kind of a side jaunt to that, I've always had this sneaky suspicion that an orientation or understanding in economics evolutions and thermodynamics gives me one a remarkable -- and I say leg up only because so many other people don't look at things from that perspective. I'm asking a bit of a leading question here. But how important do you think it is from the average person to researchers to ask significant questions about our world and have an epistemological basis out of these things, the fundamentals of economics, thermodynamics and evolution? I feel like that's a huge advantage. I feel like that gets the conversation started in a very favorable spot. But what are your thoughts on that?

Kamal: I'm glad you brought that up. I used to talk about this a bit with Paul Jaminet. He's possibly the smartest guy I know. And his background is varied. And I think in college he was a Physics and Religion or Philosophy major. But afterwards, after he was an astrophysicist, he got into economics and he wrote up a white paper too. Have you heard of the Great Books Curriculum? I don't know much about it but --

Robb: Yes.

Kamal: So it's a cool idea to me because people have been asking the same questions about living and health that kind of stuff for eons. So if you go back, not even just Paleo and nutrition, just go back in general and start the questions in you, then it's often a good way to go about things. And one of the fundamental things is how people exchange ideas, exchange goods, have relationships and that kind of thing.

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So I remember in grad school I made a club called Learning Club because I felt like when people got into grad school they just focused on their research that they had to do and finishing their dissertation and they didn't really learn outside things that much. So in this Learning Club you had to teach some something and then people would run with it if they were interested. And then the next week somebody else would teach something.

The club was a complete failure. And the reason is that the first lesson was something like on Scandinavian history and it was super interesting. And then

nobody volunteered again because they're just so busy with their own stuff. So I made a presentation about how economics influences or dovetails with some major philosophies and religions. And my first slide was -- if anybody's taken Macro 101 in economics, you know marginal benefit and marginal cost. A company is supposed to produce things where marginal benefit equals marginal cost because any additional unit produced would not be worth it if it goes beyond that curve and vice versa.

So it also happens to coincide with the middle path in Buddhism. So if you do things to the level that the additional unit that you do is beneficial, then it eliminates some things like gambling too much or being on the internet too much, using Facebook too much, social media too much or doing certain things not even like if you don't pay enough attention to your health or if you spend all your time reading nutrition research.

So I do think there's something to be said for what you mentioned which is if you know a bit about a bunch of different things and often it's things like economics or very basic things in the sciences it gives you a really great foundation to study other things.

Robb: Cool. I didn't want that to be too leading of a question to try to create some confirmation bias for my thought on that but I was just curious what your take was on that. So you clearly have a great academic background. What brought you into developing Examine which is maybe an interface between the business, entrepreneurship side of things but also having a real love for and interest in what's going on in academia? What was that process?

Kamal: So I was about seven years into this PhD program in nutrition and I was particularly studying elimination diets for rheumatoid arthritis with a rheumatologist in Boston. I studied that because I had a lot of pain issues. I have a condition called Ehlers-Danlos syndrome which is basically faulty collagen production. So that's why my never-launched power lifting career ended because I got hurt so many times and had too many surgeries.

So as I was studying pain stuff I was having more surgeries and more pain issues. So then I took a break from the PhD program and I started working for the hospital which was contracted by the federal government to do the vitamin D systematic review to inform the 2010 guidelines. So I'd read 500 papers on vitamin D and report all the data about bone health, cardiovascular health and impacts on diabetes and other metabolic conditions.

So as I was doing I learned a lot about evidence-based medicine and stats and how to synthesize information. And I was helping out Examine.com where the founders started it from Reddit after a discussion about how there are a lot of

pain and nutrition websites out there but nobody had the man power to be systematic about it. It's really great to provide 10 or 20 or 30 of the best studies on vitamin D but it's even better to provide 700 of them because then you get a really full picture of it.

So as I was taking this break from my PhD program they were like, "Oh, we're actually in need of somebody to run the organization." And I was like, "Well, I like this kind of stuff and it's what I'm doing already. So I'll go ahead and run with it." So as I took over I tried to get the website still looking at body building type supplements and things and body composition but more so health. As we all get older we're less interested in our body fat percentage. We're more interested in our health and our family's health and our friends' health. And also health issues and sleep issues and those kinds of things tend to be the things that limit your gains at the gym less so than what you're doing at the gym.

So that's our goal now; to be a source and really the source for systematic evidence analysis whether it's on nutrients or supplements and more so on dietary issues.

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Robb: Got you. Could you go into a little bit what's the screening or vetting process that you guys use to inform the -- it's reminiscent almost of a Cochrane review but you guys have a focus in nutrition and supplementation and whatnot. Are you relying exclusively on randomized control trials or are you using review papers to set up the thesis for a particular topic? What's getting included and what isn't cutting muster as far as informing this process?

Kamal: So it's actually a pretty interesting issue in and of itself. At the evidence-based practice center I worked at a few years there's this concept of update signals. So we released an omega 3 report on omega 3 and heart health and then we released a report on when is the best time to update the evidence for that kind of stuff. You look for triggers, updates signals. So either something changes in the evidences, something changes in mechanisms that are known, something comes into the news, their side effects, whatever.

And we're still trying to figure out how best to do this for nutrients. Let's take two examples. Vitamin C and vitamin D. Vitamin C is not a hot research topic. It's something that has been well studied for its primary purposes which is as an antioxidant or for basic commune stuff and also for some collagen production related things and wound healing. But for other things, it's not really that well studied. So these are the type of signals that I look for.

In the past five years there's been some research on vitamin C potentially helping this condition reflex sympathetic dystrophy otherwise known as chronic regional pain syndrome. So RSD or CRPS. And if anybody's known somebody with this condition, it's possibly the worst pain condition known to man on the McGill pain scale which is a scale used to measure pain for studies. I think the scale goes up to 50. And giving birth is somewhere in the 20s. It's like 25 or something. Breaking your arm is somewhere in the 20s as well. This condition, RSD, CRPS, can go up to 41. So it's extremely painful.

Often what happens is you have surgery, you break an ankle, you sprain an ankle, just something random happens, and then the limb starts swelling and changing color and you can start getting more hair growth. And then the burning type pain never goes away. And it can develop to a point where if you go outside and there's a strong gust of wind, it's too strong and it hurts too much and you have to go back inside.

So it pretty much ruins people's lives. There's no way to get around it other than an experimental mid coma. Have you ever seen the show House?

Robb: Yes.

Kamal: There used to be this blog about House and about the cases and whether they're actually factually accurate or the producers just made stuff up. And there are actually a lot of cool gems from House. And the disclaimer is I love House and Hugh Laurie. And there are just a lot of cool things to research from there.

So I remember one time I was watching and House is a big jerk so he got shot in an episode by a patient because he's being a big jerk. And when he was shot then he had this dream sequence where he didn't know if he was dreaming or not but then in the sequence he was on a hospital table in the OR and then he told the doctor to put him in a ketamine coma. And then when he woke up he didn't have that limp anymore and he didn't have pain.

So I looked that up and it turned out that a ketamine coma was the only way to sort of reset the nervous system if you have this terrible condition, RSD, where your nervous system goes into overdrive kind of like how other things can go into overdrive like serotonin can as well. So anytime something that is supposed to be a little bit vigilant goes into overdrive you have bad stuff like autoimmune disease or, in this case, RSD.

So the only way to possibly treat it is ketamine but the only way shown to prevent it is vitamin C. And it's very simple. Just 500 mg of vitamin C every day for 30 days. And it's a Got you pretty good way to prevent this condition. So I was thinking if there are studies about that kind of stuff, vitamin C might have

more studies in lesser known journals that we haven't covered. So that's a signal for that.

Vitamin D is totally different because there are so many studies and new studies basically every day. So for that I look at meta-analysis and then also reviews of meta-analysis. So the guy who published over 90% of research findings are wrong, Joseph Ioannidis. I still don't know how to pronounce it even though he worked on the research center. But he wrote this umbrella review of vitamin D which is basically a meta-analysis of meta-analysis. So I look at things like that to see where there are gaps in the evidence and if those gaps have been filled yet. So it really depends on the topic but it's a super interesting issue to see when you should update a topic.

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Robb: Interesting. Are you using any type of Google Alerts, machine learning algorithms? Because it seems like certain topics like type 2 diabetes -- I think in 2013 there were like 30,000 peer-reviewed articles that type 2 diabetes or DM2 as part of the subject line. It seems like a daunting task to stay on top of all that material. Are you using any technology to try to establish these flags or is this just basically having a neural uplink to PubMed and scanning that stuff?

Kamal: It's a little bit of both. So we do have some crawler type services we use to alert us, PubMed alerts and then we also look at the high impact journals and nutrition every month. But then some of it is just basically Twitter, Facebook and smart people's blogs. Like for example, Stephan Guyenet and Sarah Ballantyne review some of our Research Digest. And then their updates, people who follow them including you, we scour those websites and Twitters for new articles. By the way, I'll probably rope you into reviewing stuff on our Research Digest.

Like you said, there's just too much information out there. A newly graduating physician will never be able to practice like a physician did 50 years ago because there's more than ten times as much evidences out there now as there was back then and patients are so much well informed now. So as much as some doctors try to say, "Oh, don't trust Dr. Google," sometimes Dr. Google is the best doctor if your doctor either doesn't listen to you if you have a really good background in the sciences. There's a lot of information out there and there's too much information which is basically why we exist. We try to find the best information and the highest efficacy information and interpret it.

Robb: Great. I have a string of questions here. I'll see if I can set it up and keep all this straight in my own head. I think most people are familiar with the concept of evidence-based medicine. But could you talk about what exactly that is? It gets

thrown around frequently. But could you talk a little bit about what evidence-based medicine is?

Kamal: Sure. Evidence-based medicine actually sort of grew out of Canada. There were a couple of universities there and associated hospitals and research centers that had people who are really good in methodology of assimilating a bunch of evidence into a conclusion. And they work with some people down here as well as some people worldwide such as in the Cochrane collaboration to come up with standards of how things are reported.

So a systematic review is when you do review all the evidence according to a set search strategy. So the search strategy could be many, many, many lines long. For our vitamin D search strategy it was 200-300-4000 joined by Boolean operators (AND, OR and NOT). So if you have a search strategy for a given number of years and you have given inclusion or exclusion criteria, that's a systematic review.

Now, if you have enough studies and a particular outcome, let's say blood pressure or bone mineral density, if you have enough studies looking at those outcomes that are not too different, that don't have too much heterogeneity, then you can quantitatively pull the results and do a meta-analysis. So nowadays most systematic reviews have meta-analysis and sort of -- systematic review plus meta-analysis plus a few other things equals evidence-based medicine.

Now, that's sort of a narrow interpretation. A broader one might be for people who are into -- I don't know which term you use for alternative medicine, holistic health, alternative medicine. I gate western and eastern because that's not accurate either. Probably a lot of people that listen to the podcast are weary of woo, basically things that don't make sense mechanistically or of evidence or of experience but they're still interested in holistic medicine basically beyond the basic ten-minute HMO visit where the doctor takes measurements and then gives you a medication.

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So somewhere in that gray space is alternative stuff that either does have a mechanistic basis or could have a mechanistic basis. So a great example is meditation. There's a lot of research for meditation. It also happens to be something that's really hard to do long term clinical trials on and it's hard to have like a sham group. And that also applies to a lot of other things like tai chi. It's hard to have a sham tai chi.

And I remember when I was at that research center a coworker had published something in the New England Journal about tai chi and fibromyalgia. And it was

a huge hit and a lot of media covered it. But when I read the actual study -- I hope she's not listening to this -- I was confused because it was tai chi versus -- the control group was like a lecture or something. I don't quite remember. But if you're going to control for the effects of tai chi, why would you not control with it using movement? Because what you're trying to do is narrow in on the effects of the actual tai chi, not just of moving around slowly.

So it's hard to study that stuff and the same type of trial that you study vitamin D by. And because of that, evidence-based medicine is a tough concept because some people will use it in the strict sense and some people will use it in the sense of the broader-looking clinician who's looking at both what the evidence says, what case reports say, what their own patients say and what animal studies say. So I think it's still a developing topic and we should probably write something about it on our website to have it clarified.

Robb: Yes. I think that that would be fantastic. Again, it's almost this fundamental epistemological framework about where this thing exists and what, as you said, the gray areas are. And I guess the other question with that is -- my sense of this stuff is that so much of the evidence-based medicine is valuable to the extent the questions that were asked are well couched in that. And that goes back to my original question about thermodynamics, economics, evolution.

I just have this sneaky suspicion that a lot of the noise that we have currently might be cleaned up if medicine being a sub-discipline of biology, like if literally every question that was asked is what's the evolutionary context here or what's the evolutionary implications. It just starts noodling around on this stuff instead of just symptom chasing, mechanism chasing.

But what are your thoughts on that? Do you agree with that? Do you think that really getting people fired up about using evolutionary medicine is a starting point for hypothesis generation? Is that going to move the needle or is just pie in the sky stuff on my part?

Kamal: Yes. I think ideally, every journal would have somebody on their board that's interested in this type of stuff because what's happening right now is research starts backwards. It starts assuming that the question that they ask is important and then try to answer the question and then they try to replicate trials. But if you read some of the bio stats research you'll see that -- you know that whole 90% of medical findings being wrong thing?

There have been other papers about that. And if you work out the math -- I don't know if anybody has the stats who listens to the podcast but using Bayesian stats -- when you replicate a study there's a pretty good chance that the previous result will not be replicated for a wide variety of reasons but there's even basic

statistical ones. And then the sort of idea behind the research that they do now like does a statin help heart health, what are all the different trials you can do, what are the remaining questions of how whole grains can help health, that's research in every different facet.

It doesn't really make sense conceptually because what we should do is use a static method as people knew it back in Newtonian times. What is our question? Our question is how can we live longer and be happier and healthier? So what are the major influences? You don't start with things like do we have a statin deficiency. You start with things like how do we get energy, what do we need to live. We need sun, for example. So there's actually not been very much research into sun-like benefits. Part of the reason is that there's not a big sun lobby. There's a big dermatology lobby getting against too much vitamin D and sunlight exposure. But nobody is going to be paying \$10 million for a two-month trial on sunlight exposure.

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But it doesn't make sense because even at the hospital I worked at, it was Tufts Medical Center -- and the pediatric hospital is called the Tufts Floating Hospital for Children. And a lot of people even who work there didn't know why it was called that. But the reason is that 80 or 100 years ago some enterprising physician found that when kids are outside they tended to be happier and they felt better.

So he thought there are all these kids in beds inside and they never see the sunlight. Why don't we put them on a boat in the harbor because it's in Boston? So they did that for a while. And there was literally a floating hospital. And the kids were feeling better. But then modern medicine, it's not really safe and a variety of reasons. So they brought them back in and they expanded the pediatric hospital. It's a good pediatric hospital but it used to be a novel one.

So nowadays when you look at sun benefits you get like oh, vitamin D, sunshine vitamin. That might be the least important benefit of sunshine. There's nitric oxide synthesis from skin exposure, increasing dopamine, some very basic societal stuff like when you're outside you're more likely to interact with people while you're moving around.

Being into meditation there's one thing that people ignore a lot which is it's great to meditate as a group on Saturday morning or whatever but things like walking meditation are also part of tradition. And walking outside in a beautiful environment or going for a hike while being aware and mindful, it's nice because it's a lot easier to make observations, to think introspectively and to be nonjudgmental. So there are just so much things associated with sunlight

exposure and being in nature that aren't rigorously studied. And conversely, there's tens of billions of dollars spent on things that don't need to be studied like we don't need to have anymore research into whole grains. There's been a ton.

I remember when I was doing my exam for my first two years of PhD in front of three professors and you got nailed with questions. I got asked a few questions about whole grains. And I have reviewed almost all of the important studies in whole grains. I was listing some stuff down and I was like, "You know what. I'm actually going to take a step back and talk about why somebody would or would not eat certain food groups. I wasn't going to say that it's bad to eat a piece of bread but I just want to look at what compounds plants produce, historically, why humans ate or avoided certain things and how that interacts with current studies that have been done." And they didn't like it. It's because researchers get paid to collect grants to do research on things that somebody else is interested in. Unfortunately nobody is rich enough to spend \$100 million in what they think is interesting. So if anybody knows Bill Gates or anybody else who made that pledge and wants to convince them to do more novel health research, I think there's huge improvements that can be made.

Robb: Man, it's funny. It's so interesting because 30 years ago I think we could argue that in general, the bestest, brightest people tended to go into medicine. There's some pretty good argument that today the bestest, brightest people tend to go into technology. So you have folks running around with a bunch of 160 IQs and stuff like that. But I've just seen some really boondoggley behavior that seems like these folks are quite divorced from economics, evolution and thermodynamics. The Soylent thing is one of the things that comes to mind.

Kamal: Yes. I think I'm going to start on Soylent.

Robb: Just some really whacky stuff. Even like the Bill & Melinda Gates Foundation, they're super geeked out on these skyscraper type farming and stuff like that. We've tried to get them to look at some of the Allan Savory stuff and just like photosynthesis, animals, soy bacteria, carbon sequestration. The folks that we've talked to, and we've climbed reasonably high up the food chain -- not to top but reasonably high. But the looks that we get are just like, "This is madness." You're talking about something that's like the 1870s or something. We need technology to solve this. And it's like, "Well, evolution and nature have done some pretty good engineering." It's fascinating. It's really interesting stuff.

Kamal: Yes. I think for stuff like that it sucks because everybody who is anywhere in middle management, even if it's the highest level of middle management, has something to lose by implementing something that they don't fully understand. Elon Musk, for example, if you got in his ear directly, he's open to probably

literally anything because he took big gambles to gab into stuff for basically humanity, possibly in profit as well.

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I know people feel fear because they need to support their family and they don't fully understand things. But as somebody else who's also interested in food policy and possibly bringing back things that have been forgotten, it's just so distressing that you have to work that hard. And knowing that you've tried and are still trying, I just hope you get somewhere with that.

Robb: Well, it's funny. We don't have great options with Elon Musk but there's another person -- actually two people in that kind of tier of billionaire tech entrepreneur that we have some really great connections to, and one of them we've actually had some sit down both with the risk assessment program here in Reno and then also pitching this idea that maybe we need a diversified ecosystem in the way that we produce our food and that we might have some really huge benefits to that. And the individuals have been reasonably interested. So there's a little ray of hope.

And again, I think that the way that we whole system, the medical system, our financial system, the economics are finally coming to bear that you can't just do an extractive process and expect everything to keep going. At some point, purely extracted processes break. And this is true whether you're a CrossFit games competitor and you only train and don't recover or if you have an economic system built on exponential growth on a finite planet. At some point you've got to figure out what's a stable flight path and not exponential climb.

Some of those chickens are coming home to roost. So the basic economics again may be part of what forces folks hands on this but there are some really goofy notions, again, like Soylent that are chewing up a lot of bandwidth and a lot of resources. It would be great if it could go into different directions.

Kamal: Yes. Somebody emailed us like a year or two ago saying that Soylent was most of their diet. And usually I say, "We can answer medical questions. We don't want to say what you should or shouldn't do but here are some papers." But for that one I said, "Be careful if you're using one thing especially if it's from a factory as your main calorie source." And then that thing happened a few months ago. So I don't know what to tell people other than think about things. Don't just do what everybody else is doing or because it sound simple. There are a lot of human behaviors that are influenced by --

That's why it's good it know about economics and microeconomics and behavioral economics because people are influenced by so many different

things. Even though they examine websites about evidence surrounding nutrients and supplements and stuff, that's not nearly as important as human behavior. And everybody knows that. It's just when you get the two to mesh then that's where plenty of the magic happens.

Robb: Yes. One of the most profound examples of that, I think, that I've seen are CrossFit gyms because you get a community, their support, it's kind of like cheers, everybody knows your name, you're doing workouts instead of just drinking booze although there are some booze involved also. But a well-run CrossFit gym, the coaches will talk about sleep and food, the exercises baked in the cake, the community is kind of baked in the cake. And that's most of what we need to be happy, functional human beings. And folks get some really profound changes out of that. This is something that we've been looking at with this risk assessment model, how do you produce that community element.

There's so much money being dumped into the quantified self -- Fitbit trackers. Everybody wants to make something that's scalable which is fantastic but for real behavior change I think that so much of it is always going to necessitate a legitimate human contact. And so technology will probably be able to support that to some degree but we're still going to need these communities whether it's CrossFit or church or meditations groups or whatever the modality happens to be. I don't know that we're going to bypass that need for the social contact and the social support to really make big change.

Kamal: Yes. It's funny. I used to mention that. A few years ago I was working with a physician in San Francisco who goes by the moniker "The Quantified Doctor" or something. And obviously he did quantified self-tracking with his patients.

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But what's interesting is half his patients were former addicts and half his patients were people with normal CVD risk factors. So we had to start and then modify this quantified self-tracking program. And then people would email us to see how they could implement that kind of thing.

And we learned a lot. The main thing we learned is like you were saying, people will often look at what the Cleveland Clinic has about something or that Harvard School Public Health. And there are so many issues with those two institutions that could be in other podcast. The first thing is you have to teach the person to think for themselves but it only really works if there's accountability or a community, like you said. And then with quantified self, people are getting more and more addicted to that. So if a study comes out that Fitbit can help something, then they're like, "Oh. God. I Fitbit all the time."

We tracked how well people did according to what they tracked. So if they tracked three metrics per day versus ten or if they did very general stuff versus very specific stuff, objective versus subjective, we tracked all that and we did regressions and all that kind of thing. So what we found is once you got beyond tracking three things per day there was a marginal decline in benefit. That's on average.

For my personal self-tracking, the first time I self-tracked was I think -- I bought a sleep watch, an ActiGraph in 1998 or 1999. It costs like \$300. I spent all my student loan money on it. And now affluents do that for free and I feel like an idiot. So I bought that thing and I did a ketogenic diet for the first time. And I was like I'm the coolest guy in the world. And I did learn some stuff but I was tracking so much stuff that I can isolate anything.

So now when we track things what we would do is like how do you feel today from a scale of 1 to 5 or something. How hard did you try today to improve your health or how hard did you try for anything for work if you're buying in work? And then often one other thing like did you go to bed at the set time or even specific things like if somebody is addicted to peanut butter or something else that is contributing a lot of excess calories then they will track one other thing. So we would do that.

And then only once they got used to that for a month or two when we tried other things. And it's crazy the stuff you can find out from this. We found out using this kind of method that somebody had been using so many supplements and tracking so many things. And when they narrowed it down and then sort of building back up after a month or two and we tweaked their supplement measurement we found that all they had to do is switch from taking a probiotic with 10 or 20 billion bacteria to microdosing that probiotic, opening the capsule and sprinkling a little bit on their food and then doing a little bit more the next day and so on and so forth. And then a lot of their stomach upset went away.

It's crazy because I didn't do this. I was just the person on the nutrition side who was analyzing stuff and coming up with a program but the doctor did this. And it's basically being like Sherlock Holmes. Once you get the basics down you can figure out a lot of stuff about some of these personal psychology and habits and people just want to skip forward to the gamification part or whatever part. And I think it's a mistake. Being part of a community where you're accountable and tracking one or two things seems like a really good middle ground for me. It depends on the person but I think people should just try to be very basic to start with and get that perfected.

Robb: It's interesting. To circle back to the CrossFit analogy, I tend to deceive very little of what I would call disordered eating in CrossFit gyms. And a lot of that I felt like

was due to the performance orientation in the gym. If somebody skipped a meal, if they binged and purged or something like that, they felt like shit. And when the next workout came up and they ended up further down the list or dead last on the workout, then there was some feedback there.

But you were basically tracking how you looked. Everybody wants to look better. And then how you were finishing out in the rankings. And it was pretty clear day to day. Certain people would be better at running, certain people better at lifting. And then when you mush it together you get an amalgam of that. It was interesting that, really, people in these gyms and the way that they evolved -- you were tracking some very simple things that gave you some really broad feedback about how you were doing and people were able to affect some really remarkable change.

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Kamal: Yes. Another thing like that is when you're at a CrossFit often there's somebody who either you take liking to or who is directly teaching you or you'll hang out with afterwards or possibly one to one person. And there's something to be said for having a person who knows more than you or knows as much as you but is really good at implementing. And you talk to them every so often.

So whether this is somebody in your family or friends or spouse or at your gym -- I only know what I read from other people and read in studies. I probably know a tenth as much about fat soluble vitamins as Chris Masterjohn, for example. I can either do a bunch of research myself or ask him. And then when it comes to looking at the big picture then there are other people I ask. And when it comes to if I have my own personal issue and you have to talk to different people.

But there used to be, before our great grandparents were alive, often you'll have like a guru, not like in a mystical sense. But if you have somebody who teaches you stuff, that can be more powerful than all of Wikipedia. And sometimes people lack that nowadays because people are so rushed and cramped by work. It's an invaluable tool and it's not something that a website can replace.

Robb: Absolutely. And maybe to dovetail it back into some of that evolution stuff, that's the whole grandmother hypothesis that extent to postreproductive life span was because human are so culturally rich and diverse that it's beneficial to keep members of the group alive and do with a pretty advanced age even beyond reproductive age because there needs to be that cultural transmission and the anchoring. And even, I believe, in elephant groups and stuff like that. If the older individuals are killed then there's a huge cultural loss. And the poor behavior and not really a lot of understanding ends up getting cut off from that group. So it's fascinating.

I want to be respectful of your time because you are hanging out in Honolulu. And I appreciate you coming on the podcast and taking an hour out of your sun and fun to chat with me a little bit. Let folks know where to track you down on the interwebs and then also how to check out Examine.

Kamal: Sure. So me personally, I'm on Facebook at Facebook.com/mirandajuly. It's a log stupid story why that's my address and not Kamal Patel. And we're on Facebook at /examine.com, Twitter, the same. And then if you go to the website and you send us a message, I read every message which is really talking to people who are curious about stuff because we're also just people who are curious about nutrition and health.

So send us what you think about the website. Send us new ideas if you run across an interesting paper. We have a Research Digest where we cover the most important stuff every month, and sometimes it's stuff that people send us. So talk to us and we'll talk back.

Robb: Awesome. Thank you so much for coming on the show. Are you going to be at Paleo f(x), Ancestral Health? Are you going to be in any big social gathering here where folks can track you down?

Kamal: Yes. I try to be at one of those two every year and also some random Paleo type stuff around the country. And I especially like hearing from people who have a Paleo background and go to Examine.com because I got started on PaleoHacks and at the first AHS and seeing those people and how their views have evolved over the years. I just like seeing that. So get in touch.

Robb: Awesome. Sounds good. Kamal, thanks so much for being on the show.

Kamal: It's really my pleasure.

Robb: Okay. Well, talk to you soon.

Kamal: Yes.

[0:44:45] End of Audio