Opening on Evidence vs Hype

A cool hypothesis or mechanism, a compelling anecdote, and a person who's claiming they're an expert saying to do it does not equal credible evidence.

Credible evidence is not took some cells and put it in a lab and I gave it this nutritional supplement and the cells acted better, or gave NAD to mice and they lived longer.

That is not evidence. Evidence is you take people who have a problem, for example, you're not sleeping well, melatonin. Does melotonin help you get to sleep?

So you'd take a hundred people and you give them meletonin, and a 100 people you gave them a placebo, And you see who did better. When you do that, You realize that melotonin improves sleep on average by five minutes.

Unless you study it in a formal way just like the eggs, just the peanut allergies, they too had experts, mechanisms and anecdotes, but they turned out not to work.

Welcome to the TBD Fit podcast on Dr. Talks. I'm your host, Daniel Keeley, and I will be guiding you through this wellness journey in terms of optimizing health and longevity, where we unpack the science, the do's, and everything in between.

Come join us. Look forward to seeing you inside. Welcome back to another episode of the TBD Fit Podcast. I'm your host, Daniel Keeley. And I am a functional medicine practitioner.

My goal is simple, I want to find whoever is doing best in their category and bring that conversation to you all. So today is a very special guest, Dr.

Bobby, a physician, scientist, educator, and founder of Live Long and Well with more than 180 peer-reviewed scientific publications. a long career studying what truly contributes to longevity and the lived experience of an Ironman triathlon, which is absolutely incredible.

Dr. Bobby bridges the gap between science, practicality, and real human experience. We're driving into a topic that affects every single human. And our goal is very simple.

We're all trying to improve our health. So we're going to talk about the do's, the don'ts, and the hype, or the myths that are often confounded between science and influencer medicine, as I call it.

From supplements to training biohacks to fear-based food narratives, it's sometimes overwhelming and often misleading. Well, Dr. Bobby is here to cut to the noise.

Let's jump in. Welcome. Why, thank you. Looking forward to our discussion. It should be fun and hopefully enjoyable for the listeners. So I love part of each conversation with getting to know our guests, who they are.

You can showcase that with the audience and kind of maybe their story of why they're doing what they were doing today. Great. Well, I'm a physician, a scientist and an Ironman triathlete.

And everything comes together in my focus on wellness and longevity. So from a physician standpoint, I'm a board certified internist. I trained at Harvard and Hopkins and UCLA.

And then on the scientist side, i have always been interested in what evidence tells us something works and what Evidence tells, us doesn't work. So I have published about 180 peer reviewed articles on, in this space about

what's appropriate, what not, What can you glean from data from populations?

How do you determine value of an expensive therapy? And so that's the science part of me. And, so I bring a. I hope an evidence rigor to the discussions.

So often the discussion in this space, the health longevity space is a lot more hype than evidence. And so I've tried to take a focus there. and then I'm an Ironman triathlete.

I have done four full Ironmen triathlon and about 15 of the half IronMan distances. I'm 69 and I am still doing them. so, I try to walk the talk. And so the things I talk about with folks are things that I try to fold into my life.

And then over the last year and a half, I turned things into a podcast. So it's called live long and well with Dr. Bobby. Just put in Dr Bobby, you'll find me.

Guest Introduction and Background

and I. Try to address topics that are a lot of fun, like the five second food rule. Can you eat it when it drops on the floor or you know, your morning coffee, a good idea or bad.

Microplastics, whether that's something that we should be worried about, and if so, what to do. Ultra-processed foods, is it worth all the hype? Should we avoid it like the plague?

Organic food, you know, it isn't worth the money. So I try to explore topics where there's a lot of dogma, people that go out there and say, oh, You must do this, or you should never do that.

And I step back and say, what's the evidence? And then let's, you know, because I don't have a pony in the race. You know if somebody's talking about red light therapy, I, don' really care whether it's a good idea or a bad idea.

I I. Don't sell redlight therapy. So I just go to the. And say oh, What do we know? Where does it help? where is it a waste of money? and that's how I try to approach each one of these.

Foremost, I want to commend you because I definitely appreciate those who practice what they preach. I think too often as physicians, we should, model optimal health, but it often falls very, very short.

And it's not to undermine, We have busy lives, busy practices, But at the end of the day, prioritizing lifestyle medicine, just a healthy way of living, which we'll obviously define on this podcast.

That's remarkable. For those of you guys who are viewing, you look great. So you're doing something right. Thank you. I'm blessed with genetics and a stubbornness just to keep at it.

And I've been at endurance events. started doing marathons in my late thirties. so I'd been 30 years at this and I pretty much do real exercise almost every day for that 30 year.

It's an important part of my life as it should be for others. And it does require sacrifices, but of course, you know, You don't want to take time away from your career and your family.

That would be detrimental. So it's finding the balance and each phase of your life. It a little bit different. When I was younger, exercise was get up at 4.30 in the morning and be done before the family is awake.

Now the kids are all gone. Nobody cares. And my wife is fine if I go out and do something for a few hours. So each phase of your life, you focus on different things as best as you can.

What was the impetus to start? Because you said marathon, right? It's not just something you wake up one morning say, okay, I'm just going to run a marathon.

Or maybe you do. I don't know. You tell me. Well, i'm older than you. And if you go back to the 19th, the late seventies, early eighties marathons were for the elite.

I remember being at Harvard and my roommate had done the Boston marathon and he was in a bathtub looking like he dead with some ice in the bath. Damn, I'll never do that.

That's crazy. But, you know, fast forward 10, 15 years, all of a sudden Oprah did a marathon and Al Gore, the vice president, did. A marathon. It became very democratized and, and people were like, yeah, if you do the training, You can do it.

So I was in my late thirties and living in LA and I, was like if I'm ever going to do this kind of thing, better get started. And so I did and did a whole bunch for about a decade.

And then I was turning 50 and I, was doing spinning classes, which at the time were really the, the thing to do. Now, of course you got your Peloton at home, but back then you would go to a club with other people and some of the buddies were like, yeah, why don't you come with us?

We're going to ride outdoors. So I. Okay. I'll ride. Outdoors. and so then, I running and, and then it was like well, it's only one other sport, swimming.

And so I started with the short ones and I went to the medium ones, and then I got crazy and did the long ones. So it's an evolution. I didn't have a grand design for all of this.

No, but certainly you have discipline and you kind of re-identify your priorities because I support the idea of balance, I don't find we live in balance.

But we certainly do live in priorities, right? We brush our teeth daily. Some of us will prioritize the exercise at some point throughout the day. So I would imagine the volume of training is pretty intense, no?

It depends on the time of year and the race I'm getting ready for, but yes. Let me give a, maybe an easier example, because I don't want to set myself out as the model.

Oh, you must do 10, 15 hours of exercise a week. But I think we'll get across the point of prioritization. So sleep, which I call the unsung hero, does so much to improve our health and our wellbeing, our mortality, or risk of stroke, cognitive decline, likelihood of getting diabetes.

I mean, it goes on and on. And so many people, well, It used to be about 30 years ago that the average American got seven and a half hours of sleep. Now we're down well below seven for the Average, which means a whole lot of people get six or less.

And the magic number is probably between seven. and eight hours. But so many people say, well, you know, I got kids, i'm busy, whatever. I want to go out at night.

Occasionally I can't get seven to eight. And so this is where prioritization comes in, that I believe you need to place sleep as a huge priority. Obviously, if your kid's up in the middle of the night with a night terror, you're up, in in middle the of night taking care of your kids.

But in general, I, believe that's a sacrifice that needs to be done. I mean, i'll give you an example. We'll have people over for dinner and you know, we start generally pretty early, but by eight o'clock I'm telling the guests, look, You can stay as long as you want.

But I'm going to bed because I need to be asleep by around nine, nine 15. And so I making a prioritization choice. I think that is part of the dynamic, whether it's eating, exercise, it sleep, not having too much alcohol.

We have to set some priorities. Some are really tough to do, but sleep I, think is, is both an easy thing to, do and a

really. How much were you dialed into macros and nutrition?

When I was in my twenties during medical school, I looked around at older people by, at that point, my definition was, well, you're in your forties. And I look at people and I said, Oh, look your age and other people like, oh, You look great.

and so I sort of distilled it down. So what made the difference? Now this, this is not a recipe for proper health, but I've looked at their weight and said you are overweight.

You're not. I looked at their arms, it's like, you've got nice arms. You're in good shape. I want to be like you. And I look at there bellies and I was like that's not the belly I watch.

So when I in my twenties, I started doing pushups every day and a whole set of stomach routine exercises, which I've done every basically for 40 years.

I think at that point, weight was important. So calories in were important, but in terms of macros, you know, did I have the right amount of protein? Did I carefully about fat versus carbs?

The answer back then was no. At this point. And I have a whole podcast episode on nutrition where I lay out, lay all this out. I am a strong believer that at the end of the day, we want to be at a good weight.

And most people have the sense like when they were in college, they looked right and they want get back to roughly that weight And how you get there varies, but I think it's all about calories.

So I'm not real big on macros with one exception, and that is protein. I feel very strongly that we need more protein than the average person gets. The US government's RDA requirement, the suggested amount is 50 grams for a person.

Exercise, Sleep, and Life Priorities

It probably needs to be double that, maybe more depending upon what you're doing and how big you are. And it's very easy not to get enough protein. You know, that the numbers I quote is like 0.6 to 08 grams per pound of body weight.

I weigh 150, you know 100 grams. Left to my own devices, I'll have oatmeal for breakfast and I have pasta for dinner and bread. And I do that every day for the rest of my life.

And that's almost zero protein. So I consciously say each meal I need to get 25, 35 grams of protein, or it won't happen because that is not what I did.

That macro I care deeply about. Do I think the paleo diet is better than the corn or carnivore diet versus the Mediterranean diet, versus, the cantaloupe or the Twinkie diet?

No, I don't lose a lot of sleep over most of those. If you can get your calories under control, if you, can, get the right amount of protein, The ratio of fat to sugar.

if, you're not a diabetic, that is, You know, don, t spend much time worrying about it. Yes, of course, fresh vegetables and fruits are really important.

So in Latin, protein means prime importance. I adhere to your dogma of prioritizing protein as the most notable macro ingredient, but here's where I slightly push back.

My focus in the last decade has been on what I term microbial medicine or the interplay of a microbiome in every biological system of the body. And if I look at my heritage, so I come from Mediterranean roots, my family who lived well into their hundreds, protein was secondary.

Carb was really their primary source. However, looking at their microbiome, the utilization of carbohydrates was far more effective. Now, could one argue, well, if they had more protein, they might live longer?

Maybe this now goes back to the first pillar where I always say, if you've got to train hard, you got a train, but you gotta recover twice as hard. So the crux here is sleep.

And that's where you elegantly went to first. You're thinking about it correctly. We align 100%. That's great. our evolutionary biology, sleep was never an afterthought.

It was, there was no more sun. So, well, now it's time to go to bed, right? With the advent of light, we're still blue light. Sleep is now less of a priority.

How productive can I be? How long can it burn the candle? And then obviously we've only seen that over the decades to our own detriment. You're absolutely right in terms of prioritization.

I think we couldn't agree more, but in term of how you were thinking about, and maybe that's a good segue into some of these hypes and myths. Some things that people really put a lot of stock in example, red light or some of these other devices or any of this kind of bio-modern biohacks, some with great merit.

What were things maybe that you see now that wish you had back then or vice versa? See now, that are pretty minor in utility. There's always been a mismatch between what people recommend and where the evidence does or doesn't support it.

We know a hundred years ago, you would have the snake oil salesman that would this covered wagon. Of course, it wasn't snake-oil because getting oil from a snake is not such an easy thing.

It was some sort of potion or salve or whatever else. So we know there's always been hocus pocus. What people don't realize and I'll segue from mainstream medicine to the fringe stuff.

People think, well, okay, so the snake oil salesman, they're not trained physicians. Okay. You know, of course you shouldn't believe them, but mainstream.

Medicine has often got it 100% wrong. When I was young, you weren't supposed to be eat eggs. You weren't supposed to eat shrimp or lobster because they said your blood vessels get full of this cholesterol stuff and that gets you a heart attack.

So therefore foods with cholesterol, eggs, lobster, you shouldn't eat them. Of course. 20, 30 years later, now we know, oops, we were wrong, eggs are good.

You know we've just gone through this with hormone replacement therapy for women in menopause, where lots of women got it in the 70s. There was a landmark study, every woman stopped taking it for fear of stroke and breast cancer.

And now, thirty years oops, we got it wrong. For the right women, it's absolutely the thing to do. We did this with kids. Forever, kids would eat whatever they ate when they were young.

But then there was this brilliant idea, well, if you don't give kids peanuts, then they won't be allergic to peanuts and peanut allergies are dangerous.

So we had a decade or more of saying to kids and moms, no peanuts in the first couple of years of life. Okay. What ended up happening? We ended with an epidemic of peanut allergy.

So now we know you want to expose things. The first step is it's not because you have an MD degree that you are right. We in medicine, and I say that writ large, specialty societies, we used to say heart disease was a plumbing problem.

Okay. Your blood vessels are narrow. We need to open up those blood vessel. You might need a bypass surgery. Or you might. But then when they finally did a randomized trial and they took people with stable conditions, heart conditions.

And they said, okay, half of you we're going to give you a stent. Open up. Blocked blood. The other half, they gave medical therapy. What they found was it made no difference.

So again, There's a long history of where what we thought was right turned out not to be right. So now let's move a little more towards the alternative medicine view of the world.

Your audience may be too young, but there was a Nobel Prize winner by the name of Linus Pauling, and he was chemist. He was like, oh, vitamin C, that's the solution to colds, flus, cancer, whatever.

And so he promoted it and everybody followed it, of course. You know, decades later, they then finally did the studies and found made no difference. Okay.

Other examples, a red light therapy is, is a thing now everybody wants to potentially do it. And there probably are some good uses for it it's been shown in real scientific studies in people that it can help hair regrowth.

It does. You know, you count the number of follicles before you, count, the numbers of folicles afterwards. You take some people, give them red light therapy.

you give somebody else a sham. Maybe it's not red, light. It's blue light or green light, or whatever it is. And it makes a difference. The problem is, is that people then run with the concept and therefore.

They recommended for headaches. They recommend it for arthritic pain. They recommended itfor all sorts of things where the evidence doesn't show it. You mentioned NAD.

The latest thing that's getting everybody's focus in social media is mitochondria. Ooh, the reason you've got fatigue, the reason that when you get older, you don't have your energy, is your poor mitochondria, which create energy for the every cell of your body, they're getting old, They're not dying off the way they should, so they would get replaced.

And then people have, oh, well, you need to take my supplement. It could be NAD, it could any of a number of kinds of things. And again, it's a great theory, but there's no evidence yet to support it makes a difference in people.

Because for me, well, I'll pause there because I want to get to the equation for hype and health. Let's definitely segue. I mean, you brought up a lot of points there, which are certainly controversial on the other end.

When you suggested, vitamin C makes no difference or some of these mitochondrial supportive nutraceuticals. I don't know if you're suggestive that they make no difference or perhaps it's more hype than science.

I'm not, so maybe distinguish, um, because certainly they're, when we're administering some of these things, seeing clinically, I mean, substantial outcomes.

When we, we are, uh, So I didn't like the word necessarily alternative medicine. Uh, like I think it was restorative medicine, We are helping the body do what it is brilliantly designed to do.

And so our goal is we're just kind of shifting that, uh, such that the patient can, they're in a more restorative state. Now we are targeting healing.

And we see that in terms of blood testing. We see it in term of specialty testing, we were layering in nutrigenomics to understand kind what the holes in someone's biology are.

So we can be very, very precise with our approach. But in, terms, of some of these treatments, if you will, or

nutraceuticals, you mentioned NAD and vitamin C.

Are you suggestive that there is no benefit? And again, this again is just more hype. So I've been thinking about this whole area of my entire career.

Why were people getting back surgery when in that scenario they were going to get worse, not better? Why where they taking out every kid's tonsils who had a few sore throats?

On and on and over the decades have been these issues of why is it that things happen that are really not supported by the evidence? And as I got into the longevity wellness space, I realized there was an equation that kind of helps me and I think others figure this out.

And here's the equation. It's got three pieces to the puzzle. The first, a cool hypothesis or mechanism. You have leaky gut and when that happens, toxins get into your blood system.

That can't be good for you or the whole mitochondrial story. And when you hear it, it's like, oh my God, that makes so much sense. Of course I'm feeling bloated and blah, my gut is leaky.

Okay.

Nutrition, Protein, and Macros

So you have a cool mechanism or a hypothesis. The second is you've compelling anecdotes. Well, Sally did this and it really helped her or in my patients, they get better.

Kay. That's a compelling anecdote or two or three. And then the third piece of the puzzle is a credentialed expert. I'm a doctor. And I think this makes sense and I recommend it for everybody.

But taking those three things, a cool hypothesis or mechanism, compelling anecdote, and a person who's claiming they're an expert saying to do it does not equal credible evidence.

Incredible evidence is not, I took some cells and put it in a lab and I gave it this nutritional supplement and the cells acted better, or gave NAD to mice and they lived longer.

That is NOT evidence. that could be science, that can be interesting. To me, evidence, is you take people who have a problem, for example, you're not sleeping well, melatonin.

Does melatonin help you get to sleep? So you take a hundred people and you give them melotonin, and a 100 people you gave them a placebo, And you see who did better.

On balance, when you do that, you realize that meletonin improves sleep on average by five minutes. Okay. Now, some people may be more, or some maybe less.

But my point is, unless you study it in a formal way, just like the eggs, Just like, the peanut allergies, they too had experts mechanisms and anecdotes, but they turned out not to work.

So, you know, I don't know how much money one makes as a supplement. There's no clinical study that says we took a hundred people and gave them AG1, compared them to a 100. We gave.

I dunno. psyllium husks, and we showed that the AG1 people did so much better. And that's evidence. AG-1 can have a cool mechanism. They can say, oh, you need fruits and vegetables.

We'll give you your fruits, vegetables in a capsule. Well, that makes sense. they'll talk about people who loved it. and then of course it's on every podcast.

So you're hearing about it But that's not evidence. And I have a higher bar for when I would say it's ready for prime time. Many in the longevity space were pushing metformin.

That will help you live long. Well, now many of those people have backed away. Now some are on to rapamycin. Okay. They backed away. Neither of those have been shown in people to make things better.

Now you could argue nobody's shown it doesn't work, but for me, I'm a show me kind of physician. I want to see the evidence before I would recommend it to others.

Interestingly about AG1, um, actually apprehensive with shotgun formulas, because I usually I'll see kind specific adaptogens that are conflicting, like depending on someone's cortisol curves.

I was on the bandwagon way early on when they were athletic greens before now they have a lot of these influencers behind them, but I couldn't agree more in terms of really trying to identify the evidence rather than what's interesting.

But certainly we see things clinically that does work. So I'm curious in term of what you feel or what have seen rather that actually again does have clinical validation and efficacy and certain things that you've integrated within your routine or within you patient population or just things in general that actually you, that is more than just hype.

That's a great question. So I will, let's separate out what you need when you're ill versus what could do to stay healthy. Yeah. You got high blood pressure and your weight is okay.

You need a medication. you got diabetes and you have type one diabetes, you likely are gonna have to have insulin. If you had a heart attack, there are specific things you need.

So that's a, we're down a different path, but I think where a lot of the hype stuff happens is around kind of a longevity space. And I'll tell you what I believe evidence supports.

And I'm not sure there's much beyond these six. So again, I have a podcast on each of these 6 pillars, but I call them the 6 Pillars to Live Long and Well.

And then I'll sort of rattle them off and then we can go through them a little more carefully. Exercise, we've already talked a bit about it. Nutrition, sleep, mind-body harmony, which is sort yoga.

meditation, kinds of things, exposure to heat and cold, sauna, cold plunge, kind of thing, and social relationships. Those six, I've reviewed each one of them and there's really profound evidence to support that you should focus on those.

So I'm sure your audience knows the importance of exercise, the important of strength training, The importance speed work and the evidence is very clear.

It reduces your risk of heart attack and stroke and cognitive decline. So that one, you know, it's a no-brainer, folks should try to bring it into their life in the recommended amounts.

The second is sleep. And again, there's lots and lots of studies that show the mortality rates of people who don't get sleep and those who do, not to mention just how awful you feel if you don' get good sleep, so there is lots good evidence to support that.

Now the magic window is probably seven to eight hours or so. Mind-body harmony, I would say the evidence is pretty convincing about mental health issues that people feel better, their depression gets better.

Their anxiety gets. Your blood pressure can lower their anxiety levels can reduce on ways that you can measure. Whether meditation long-term and those kinds of things change how long you live and whether you're gonna have cognitive decline, we don't know.

I think it works enough for people in the near term that it gives benefits, it's worth doing. But I wouldn't say, look, if you don' have time to meditate, you'r gonna end up with dementia.

We don"t have the data to support that. The next is mind-body, not mind body harmony, the next exposure to heat and cold, so the sauna cold plunge story.

Sauna, there's really good long-term data in people that people who do regular saunas three times a week, 20 minutes at a time, live longer, have fewer heart attacks, and have less likelihood of cognitive decline.

So when people say to me, well, what's the evidence? It's a little tough because the people do sauna's have the time to do the sauna. People who do saunas have money to have a sauna or to go to a gym.

So it's varied and people who are more well-off financially live longer. Are we really looking at the benefit of a sauna or just the fact that that person has other things going for them?

And so there has been a whole series of studies in Finland. Now, why Finland? Well, in finland, there's a sauna everywhere. Every apartment has them and it's democratized.

You don't need money. you don' need a lot to do a son. So everybody in. Finland has the ability to. Do it. so you've kind of stripped away some of the other things that might make a mess out of.

The analysis. And what they've shown in multiple, multiple studies is that the sauna improves those kinds of things. And one of the other pieces of a puzzle that makes us more convinced is what's called the dose-response curve.

So for smoking, smoking one cigarette a day is not as bad as smoking 10 cigarettes a days, and it's not bad smoking 30 cigarettes per day. That's been shown over and over whether it is lung cancer or heart disease.

Similarly with sauna, if you look at people who go to sauna once a week, twice a, week three times a. Five times. It just gets better and better. And then if.

Well, what if they do five minutes versus 10 minutes, versus 20 minutes again, more is better? So that data is pretty compelling. Cold plunge is a whole different ballgame.

There are no long-term studies on the benefits of a cold plunch tank. there are short- term studies which have shown that it changes your mood. It changes, your dopamine levels hugely, and it lasts actually for many hours.

But I can't say to folks, the evidence is convincing that you will live longer or reduce your risk of certain diseases. Data doesn't exist. So therefore I don't push it.

And then the last is social relationships, which seems a little kind of soft and squishy that you want to have friends. You want have people you really can turn to at two in the morning if something's wrong.

But again, there's been a whole bunch of studies, one that's really the.

Longevity Myths and the Evidence Standard

Kind of the classic study is called the Harvard study of adult development, where they followed people, kids that were in Harvard college, compared them to kids who were living in Boston that weren't going to college.

This study goes back 80 years or so, and over the years have followed more and more people. So one of questions they asked is, We got a bunch of 55 year old, 50 year-old people.

What's the strongest predictor of whether you will live into your seventies and eighties, and be functional in your 70s and 80s. It wasn't your blood pressure in you 50s, it wasn' your cholesterol level, It was your exercise.

Its whether, you had social relationships. significant social relationships, not just your spouse, but other key people in your life. That was the single strongest predictor.

So those six, there is evidence to support them. When you go beyond those 6, then I would say they're good theories without yet. It's interesting because as science and medicine has evolved, we continue to see how grossly erroneous we were in very specific beliefs.

And you mentioned cholesterol early on and eating certain foods with higher saturated fat, which we look very, very closely because I myself and of one, I mean, poor, generally poorly with a higher saturated fat intake.

And so maybe we'll get into the notion of keto, like the whole keto craze. Everyone's doing keto. Well, actually, is it right for you? Is it starving some of the healthy microbes?

Are you going to be less metabolically flexible? I mean, there's risk with everything when people kind of exaggerate implementation, but looking at cholesterol in general, I, mean LDL, which has been certainly demonized over the last, how many years and still continues to because we have so many patients that are referred to us and say, How are you treating LDl?

So I have to provide the context that LDL is an antioxidant. LDl is part of the immune system. It goes inside the blood vessels and attaches to endothelium to enter smooth muscle to provide nutrients and remove waste.

it's interesting how we take something in isolation and then we hold it true across different kind of categories. I always say if man made it, stay away.

If nature made, it's okay. So my foundation five, you've kind of relegated it to six. I have a foundation, five. so I guess one less, but it you got to eat right, sleep right.

Move right talk right poop right now that talk, right is the, the usually one that's the most overlooked. The one, that last component there of social that you alluded to with Dan Budner's work and evaluating blue zones.

the two most common threads that I saw across all. or community and movement. We're kind of on this never-ending mission to find what's the best diet.

You go here, Mediterranean is the, best this is there, that is best. To me, That's such a fallacy. What's best for one is very different from to another.

And that's more indicative on seasonal nutrients on where you are in the equator, what your ancestors ate, What your microbes look like. what the environmental toxic picture, obviously the health of your relationships.

There's so much that's overlooked. Again, so we, we align identically in that regard. I'm curious what your personal, cause so that the foundation, I think we agree that we have the, you didn't get the Foundation met.

What are you, and you mentioned interestingly, cold exposure, less maybe critical than sauna. So growing up as, as an athlete and then have, higher. professional level athlete, to me, the best form of, of recovery was hot, cold therapy.

And that's kind of free. You just get in a hot tub, you get a cold tub. Y'all turn at restriction, vaginal dilation. We're now excreting a little bit more waste.

To me that was always the. Never was it that the red light or the Norma tech boots or some of these other modern gadgets. It's great that people feel well.

But you're right in looking at kind of historically, we understood the necessity of building this kind these heat shock proteins and cold was, you walked out in nature, right?

It was typically cold depending where you are. Certainly you would go into a river, a stream, an ocean, and there's your cold. Right. We are now so removed that we have to intentionally redesign our environments under these blue lights to try to modify the damage that were created.

But we're missing the basics. I think that's where we agree upon is most people are looking for that 1%, but they haven't mastered the foundation. In terms of your own, let's say stack or biohack or nutraceuticals, is there anything that you're doing Again, just N of one, but anything that you find, again, with a high degree of benefit.

So I'm really happy you raised this issue of N one. I have been talking about this for years, the concept of an N. Your listeners, if they don't understand, typically a clinical trial may have hundreds or thousands of people that get one approach versus another, and then you compare and see who did better.

And then what's published is an average. On average, If you take this blood pressure medicine, the blood-pressure falls by five or seven So if it was 140, now it's 133 or so.

That's an average, but the reality is there's a wide distribution. Some people will only have a couple of points drop and some people might have huge drop.

So you have to be careful looking at clinical studies and averages. Similarly, you may have things that haven't really been studied. So I mentioned the melatonin story.

Unbalanced for a population, it only improves your getting to sleep by five minutes and people might be like, well, that's not worth it. Of course, it has real uses for jet lag and some of the things, but just for routine, helping you get to sleep.

On the other hand, what we know is that there's a wide variability. Some people get no benefit. A lot more than five minutes. There's only one way to figure this out.

And that's to do a test in yourself. Okay. But when you test something in yourself, you have to do it scientifically because there's such a thing as the placebo effect.

If you think it's going to help you, You will feel better. You know, there have been lots and lots of studies where I give you a inert. cream to put on your sore elbow.

And I compare it to the quote active cream that has whatever it is that's in it and both groups get better. So placebo is very important. How do you do an end of one trial?

You begin by figuring out what's the symptom you're trying to get. Better. In this case, let's say sleep. I'd like to sleep longer and I like the quality of my sleep to be better So you need a baseline objective measure.

Can't do a blood test for sleep. What you can do if you happen to own an aura ring or a Fitbit, you've got some numbers that you could look at. Or you just go online and get the Pittsburgh Sleep Questionnaire, which asks you some questions and you add up the points.

You know, how long did it take to get to sleep? Did you wake up in the middle of the night? Was it hard to go back to asleep? did you feel refreshed in morning?

How did you feel in the afternoon? Were you needing a nap? So you come up with a baseline measure, might be a number six or a, whatever it is. Then you go ahead and you try this new thing.

Well, I wonder if taking a sauna before bed will help me sleep. Cause it's one of the things that can help people. I wonder if melatonin will help me.

I Wonder if I don't drink alcohol, whether that will Help my sleep. So you have a baseline measurement. You then start the new approach, whatever the New approach is.

And the good news about sleep is you're going to know within a few days or a week. so then you come back in a Week and you measure and see if it got better.

But the story isn't over yet because you need to stop what you were doing. Stop the melatonin, stop the sauna, and see if things go back to the way they were at the beginning.

Then restart your new technique and if it improves. By doing this off, on, off on with an objective way to measure, you can dial in what works for you.

And this can be applied to, I wonder if salt makes my blood pressure worse. I Wonder if eating a lot of saturated fats will worsen my cholesterol levels.

These are all easily testable in an N of one approach. And I highly recommend it for things like this. And I did it in myself. I looked at the data on creatine and there's pretty good data that in people who are trying to build muscle helps, but there was also a lot of hype around it.

So what I, did was I went and got a DEXA total body analysis and it told me how many pounds of muscle, how much fat I had, I was already in a strength regimen, and I didn't change my strength regiment.

And I started taking five grams of creatine a day. Six months goes by, I think I look stronger than I did the DEXA scan. And in fact, my muscle mass had significantly gone up.

So I continue to take creatinine because for me, an N of one trial, it seemed to work. That's how I kind of have taken what's evidence, how to bring it in my own life and then test it.

The problem with an N of 1 study is you got to get an answer quickly. You cannot use it for cancer treatment. If you take these supplements, you won't get dementia because that takes 20, 30 years and by then it's too late.

So ideally it is something you can measure within a week or a month and find differences. So agree with all that, anything that you have found and have one that moved the needle for you, performance, whether it's creatine or even salt in your water, minerals, electrolytes, definitely you already alluded to previously ensuring proper protein intake.

Anything nutraceutical related, I mean, vitamin D, certainly anything you've found that has very high degree of utility, again, versus more height. I'm not real big on supplements.

So in my review of the literature, omega-3s, vitamin D, those are the common things that people take.

The Six Pillars of Healthy Aging

The evidence doesn't support them. And in fact, there's a downside to taking each one of them, so you have to be careful. Obviously getting vitamin-D and omega 3s in your diet is great.

Taking supplements is a different story. I was not really convinced as, and I am not the only one, the major summaries have shown really no benefit. Now, the one area where supplements have been shown to be effective is a simple, cheap, generic multivitamin.

And that's been showed to reduce the risk of cancer, a modest amount, but statistically significant. So I take a multivitamin a day to keep my toilet habits under good control.

I love psyllium husks. I've done many N of 1 trials when I took it, it's all good. When I don't take it. It's not so good, I go back on and it works fine.

The one interesting end of one was my, in spite of the fact I'm, my health is good and I exercise and all those kinds of things. My hemoglobin A1C, which is a measure of potential diabetes, had sort of inched up higher than my

doctor and I wanted.

So he put me on metformin, a standard diabetes medicine. And you're supposed to basically take it at night. That's the recommendation. Some point after that, my sleep got to be a mess and I wasn't sure why.

And I had a continuous glucose monitor on for a while so I could check my blood sugar. and so it looked like my Blood sugar was falling in the middle of the night, waking me up.

So basically then I dialed it in and now I do the metformin in morning instead of at night. My sleep, got better. So that's again, another kind of N of one study, but I violated my own rules, didn't retake metformin at night to see if the problem recurred.

Since it doesn't really matter whether you take it at nighttime or in the morning, I figured I'll stick with morning. I want to underscore because you had mentioned a cheap multivitamin.

And I'm not trying to undermine anything that works for you. Certainly quality does matter. And this would probably be a good segue into what we speak about offline in terms of organic versus inorganic and such.

certainly we've seen evidence that majority of the products that come off the shelves of Walgreens and Walmart. often do not contain what they say in the label and sometimes often enough ingredients that can be very detrimental.

I don't like to push supplements. Again, remember my philosophy, if nature made it, it's okay. If man made, stay away. So ideally we're getting everything from food.

Certainly our environment is not that of our ancestors, but again, that doesn't mean that I'm trying to put any sort of supplement use. What I am trying do is educate the patient or the individual on lifestyle medicine and fill in holes.

So supplements to me are used to supplement the gap in someone's lifestyle. Ideally, you make the lifestyle change, but again, go back to our priorities.

Some of us, prioritize our careers to the detriment of our own health. I think when we talked offline too, with some of these retired individuals who have a degree of wealth or affluence, If you don't have health, you're no better off.

But I do want to make that distinction because I have found certainly is when patients are used, they come to me with a pharmacy, what they're taking and they are not any better.

I've to question, okay, is the use of what their taking actually helping them or hurting them? And often it is the latter. And so I want to be very mindful because I don't want too misinform our community that sometimes something that's generic is always going to best.

Certainly there are times that perhaps it can be, but I learned this early on from my mentor, always said, Daniel, this isn't Burger King, patients can't have it their way.

So sometimes we do have to create some sort of rubric that promotes healing and change. So I think the concern you're raising about the quality of the supplements.

It's a non-controlled environment. The FDA doesn't measure everything in your, you know, your supplement pills. So it's real issue. And for certain supplements, they'll claim it has this in it.

You know it, has, this must echinacea to prevent your cold. But, it'll turn out it doesn' have that amount. Or the zinc may be there, but there's other metals that you probably don't want in you body.

That's absolutely a concern. And so people talk about getting third party certified supplements, but this concern I have not seen for your basic simple one a day vitamin.

It's really when you're trying to get large doses of each of these things that you can have problems. I haven't heard when your just getting a basic thing that has a little bit of you know, folate and zinc and whatever in it to supplement your, your general diet.

Haven't heard problems. And, you, know obviously it's very cheap, but I'm not recommending people take, 10 of these pills a day. You know it, it is one a.

Obviously MTHFR is a hot topic and patients come to us, I'm Mthfr like it's some sort of a disease. I run a Neutrogenomics test, and I see in myself I have a 67% reduced capacity.

There's studies in Italy that men that were taking folic acid or the synthetic form of folate could not break it down and had specific forms of cancer that became prevalent.

And so my concern again is When we're taking things in a bottle, as you had, again, very elegantly alluded to, is it's not regulated, but there are certain, I think, companies or individuals that strive to make things with quality.

And certainly, you said early on, sometimes people make snake oil, right? You and I can make a company, call it Longevity's Best, say that it decreases telomeres and it could contain just baking soda and nothing else.

So I understand what you're saying. I just want to be mindful because there are certain version of specific supplements which have a less degree of bioavailability, which are, have, a higher degree, of sometimes miscellaneous ingredients or toxic components that when studied can be hurtful.

People don't realize that I always say nutrition is instruction. It's going to heal you, it's gonna hurt you. Don't find it binary. What we put into our mouth, we control certainly, is going, to have very, very positive or negative effect.

When you look at nutrition, the first sort of operations is toxin elimination. The body does a very, very excellent job of trying to detoxify and making sure that what you're consuming is in poison, right?

It wants to keep us alive. Again, we have this beautiful innate design. Second and third is nutrient absorption, cellular repair. Often people don't get to that third level because our nutrition is so toxic.

Maybe let's segue into organic, not organic. I know you said the five second rule. These things that you bring out are absolutely beautiful. So let's highlight some of that.

Okay. Well, let' talk a little bit about organic food because that's sort of become a religion. Pesticides are evil. Nobody wants to drink Roundup. So therefore we should make sure that our foods don't have pesticides.

And what we know absolutely without question is that in general, organic food costs more. I mean, you don't need a scientific study. It costs about 50% more, but you go to the market and you look at Fuji apples, they're $1.50 a pound.

You look for the organic version, They're probably $2.80 a pounds. And you look at your basic salmon from salmon, you know, maybe it's $8, $9 a pound.

You look the wild caught stuff, uh, Maybe it is $25, 20 a pounds. So I don't think anybody, You know can really make a good argument. It's the same price.

Uh, so on balance, about 50% Americans spend about a trillion dollars a year on food. Now this doesn't include restaurants, just at home food, So for a typical family of four, they spend about a thousand dollars a month on food.

Okay. That's just non-organic, just basic food, if in fact, organic food costs 50% or more additional, then it's costing a family three to $6,000 a year to buy organic.

Now, obviously, there are ranges. Some people do organic for everything. some people only do organics for

lettuce, but, you know, they'll buy flour that isn't organic.

But it's thousands of dollars a year. So the costs are obvious, hard to argue with. You can figure out what your number is for your family, But, it is hard argue.

Now you turn it to the other side of the equation. so for those extra two, four, six thousand dollars, a, year, what am I getting for it? How much better health?

The problem is, to sum up all the evidence, there isn't much improvement. But let me give you some data points. So people are like, well, I know pesticides are bad.

That can't be good. And there are studies in rodents, mice, rats, where you give them a hundred times the amount than any human would ever eat and the rodent's get problems with their sperm, problems, with cancer, fill in the blanks.

Then you go into human studies and you say, you know, farmers have increased risks of cancer and these other problems because they are exposed to large quantities of pesticides, organic, non-organic stuff.

But when you then go to normal people that aren't being exposed massive amounts of these chemicals, then the question is, are there any health impact?

Okay, so the first thing to be aware of is that not all conventional fruits and vegetables have any pesticides. I mean, there are FDA screenings for these kinds of things.

So in general, now there's not huge amounts of pesticides, but there have been studies in humans where they take a group of people and you get non-organic conventional tomatoes, and then later we give you organic tomatoes and we go back to where you were.

And pesticide levels in the blood go a bit higher. But does that lead to any problems in health? So when you look at the scientific studies that compare organic food people to nonorganics food, people you do see differences in mortality and cancer.

So some people will argue, oh, well then we all of course should eat organic. The problem is people who buy organic are not the same as people, who don't.

They're concerned about their health. they've got more money so they can buy the organic and they're probably going to the gym and sleeping better and not, you know, doing drugs.

Supplements, N-of-1 Testing, and Creatine

When you compare people with organic intake versus non-organic intake, it's not an apples to apples comparison. But in one reasonable study where they compared organic and nonorganics, they found that there was a 0.6% increase in the risk of cancer, so 1.3% to 1.9%. What that means is that a thousand people have to eat organic all the time to present, prevent six cancers, not six cancer deaths, six cancers, or roughly 160 people need to eating organic, all of the, for any one reduction in cancer.

So if you do the math, that, means that person or a family is going to spend $300,000 on organic food to prevent one case of cancer. Now, if somebody else is paying for the organic food or if the Organic Food is the same price, sure, have OrganiFood, but it's a real cost benefit trade-off.

If you had $6,000 extra a year because you didn't do organic, What could you do with that money that would be more powerful? Get a gym membership and a heart rate monitor, get a personal trainer to help you when you need it.

And here's an even cheaper one. When people have done studies, what they found is that 80% of US population

doesn't get the recommended amount of fruits and vegetables on a daily basis.

basis. And so if you ask the question, what if everybody had one extra fruit and vegetable a day? What would that do to cancer? And there would be tens of thousands of fewer cancers just by eating more fruits and vegetables.

Not organic fruits in vegetables, just more fruit in vegetable. So the bottom line is organic food is expensive. There are absolutely theoretical benefits, but whether that money can be better spent to improve your health, that's where I raised the question.

That's fair. I'll give you something that might interest you. So when I was visiting family in Eastern Europe, we would ban any produce at the local market.

in the morning, and the next morning spoiled, full of mold. I saw it on garlic, I thought on dried fruit, things that I don't typically see spoiled. And the turnover was literally 24 hours.

When I go to Whole Foods, that's here very local, so it's just convenient. Yes, there's a premium. But I'd like to think they source better quality. So I do value organic, but I certainly think, foundationally, eat more plants and vegetables.

distinguished, they're not equal to me, but I do work with my online patients to get five plant points at every meal that includes herbs and spices. But what's interesting is when I buy the, the produce in old foods, I could sit there for several days and there's absolutely no mold.

So I saw a very different distinction of what organic here is. And what is just inherently organic globally. So that's a really interesting observation.

That's something that flies under the radar. We don't often make that distinction, right? Because there is a certain degree of FDA approved and EPA approved chemicals and pesticides that can be used on the use of organic.

And obviously now it's found in the soil of both organic and non-organic produce. It's ubiquitous, but interestingly, what is kind of maintained, that's been inherited generationally in some of my ancestors across the pond, it's just a very different nutritional environment.

And the food certainly tastes different too. So when people consume fruit or vegetables, there's a flavor profile because of the rich minerals that is one that favorable versus I remember growing up here, the tomato tastes like cardboard.

It's devoid of certain minerals. So that was certainly interesting because I had no knowledge of that, right? That I literally go to the market the next day, it's garbage.

Because if you don't eat it in time, absolutely. Absolutely. It is a very good point. What about your five second rule? What does that look like? So I think most people know what the five second rule is, but it's basically you drop that wonderful piece of bread with butter on the floor.

And the wives' tale is if you grab it within five seconds, it' fine. You can eat it. So I had to, of course, go down the rabbit hole and see if there's any evidence to either support it or negate it.

And ultimately the Dr. Bobby verdict meter was a profound failure. So there was, there haven't been a huge number of studies, but there a great study called the Rutgers study, it was done at Rutger's University, where they took various foods and they dropped them on various surfaces.

So it's more complicated than you, you know, have your butter on bread and it drops to the ground. It depends what the round is. Is it wood? Is tile? is it carpet?

And it depends upon whether it is a moist item like watermelon versus a gummy bear, which is at the other

extreme, or bread, bread & butter. So they tested all of these things.

Then of course they test it if we dropped it for, you know, a half a second or a 2nd or 3 seconds or 5 seconds, or 20 seconds. Bottom line is the transfer rate is almost instantaneous.

You know, waiting less than five seconds does not make it okay. And yes, it does matter what the food is and what surface is. Turns out that carpet is the safest and wood and tile are, you know the transfer was much more rapid.

So that's the first piece of the puzzle. But the second piece, I think, is the more fascinating one. So what? So, what, your food dropped on the ground?

What, it got some bacteria and you ate it? It's not clear whether eating the bacteria is a bad thing or a good thing. And there's been some really fun studies where they looked at kiddos that were raised on a farm where their exposed to all sorts of junk with the animals versus raised in town.

Turns out that the kids that we raised it on the farm have much lower likelihood of allergies and eczema. than the kids racing in the city. And then there was a great study where they took 10 daycare centers.

Half of them, they take out the playground and put in grass, the other half they didn't. Lo and behold, The kids that were exposed to grass and things, everything looked better.

Their microbiome on their skin looked, better the microbiomes diversity in their guts were better, their blood tests were. So it's important to sort of not to stop at, yeah, the bugs get on my food pretty quickly, but ask the question, does it matter?

Now I draw the line based on where it happens. So if something drops on the floor here, I got three Vichela dogs. The floors are always dirty. I could care less.

However, if it's a 7-Eleven, If it is a hospital floor, there's no chance I'm going to eat it when it drops on the floor because some of the bugs there could be really, really dangerous.

So it just a fun topic that I just figured I had to look into this. And now we're looking at things like chicken soup for colds. Is there any data that chicken, soup, which every grandma says you need, is there, any evidence that it actually helps?

So I love this kind of stuff. It's what keeps me going with my podcast. Do you have an opinion? Have you, have you done the research on the chicken soup?

When I was earlier in my career, I had the sense that people had really tested this nicely. But as I've just started to dive in, haven't found great evidence.

There is some evidence that it's really the hot liquid that helps with congestion or whatever else, but maybe not the ingredients of the Chicken Soup.

It's early, I'm not sure. I am also going to go through all the other things that people say you need to do with a cold. You know, starvacold, fetifever, foetacald, starvefever.

Does zinc help? Does echinacea help, does vitamin C help. So I will go though all of those. Chicken soup will just be one of them. Well, it's interesting because earlier on I offered vitamin D and you had mentioned if I, correct me if i'm inaccurate here, again, low clinical evidence purporting the benefit of vitamin d.

I'm not sure in what context you're suggesting, but that certainly flies in the face of much of the signs that I've seen, But certainly in using that to help our patients boost, um, Well, depending on where we're working, it's certainly contextual, but I'm curious.

So no utility to vitamin D. Vitamin D is a really common supplement that people take. If you go to the doctor and you get a vitamin d blood level and it is low, well, duh, you need extra vitamin.

Okay. So that goes without saying, the question is whether average folks who have no evidence of a deficiency will do better with vitamin D. There's been many studies on vitamin d and calcium and whether it improves your bone strength and reduces fractures.

The answer is no. The other piece of the puzzle is that even though these are quote natural vitamin D. Now, if you eat it in foods, you know, wherever, it's fine.

You're not going to OD on vitamin d, but if take it externally as a supplement, there are some theoretical reasons to be worried. So what does vitamin do?

The vitamin helps your body make bones, calcify things. What is it we fear in our arteries of our heart? Calcification. People get coronary calcium scores and that's a marker of atherosclerosis.

Organic Food, Cost, and Value

So theoretically, increasing your vitamin D intake could increase the calcifications of your heart arteries. So things that people think, of course, it's not going to hurt me, there can be downsides.

There's data on omega threes and people taking a lot of external omega three fatty acids and atrial fibrillation risks go up. So now if you live in Sweden and you get no sun exposure, okay, maybe routine vitamin D is okay.

Even if, you don't do the blight test. But for most people who are outdoors a moderate amount of time, if they have a normal diet, not a crazy weird, you know, maybe just vegan diet.

There's no indication that vitamin D is needed. Of course, again, the blood vessels, blood values are low, different story. Okay. So again, we align similarly in some respects here.

I think again the premise of it being contextual, I do want to highlight what you said, nothing abnormal or weird diet, because certainly that's where things are trending these days, right?

Whether it's- Yes. Raw only or vegan has been around for some time, but what are some fads in nutrition or in diet that you have, again more hype than benefit?

There was a flurry of news reports when a study was presented at the American Heart Association meeting and the headline was intermittent fasting causes heart attack and death.

And it got so much press and everybody's like, Oh, I guess I can't do intermittent fast. Well, it turned out it was not a published paper. It was just something presented in a meeting.

So you don't know how accurate the work was. and then it's been fully debunked. Like this is crazy. So you're going to hear all sorts of stories that suggest something is dangerous or something good.

I don't believe intermittent fasting has a magic to it. Yes. If you starve mice, I mean, literally starve, mice reduce how much they eat by a third or a half.

They live longer. And so people have said, oh, well then intermittent fasting, which is going to change your biochemistry and lead to autophagy and all the other buzzwords that people love to, to spout will make all of the difference in the world.

You know, Peter Uttia, very, well respected in the longevity space, spent years doing not intermittent fasting, but like serious fasts. He's given that up.

I think where he nets out, where I net out is intermittent. Fasting is a technique to reduce caloric intake. If you skip breakfast, you're less likely to eat as many calories during the course of the day.

Is there magic because your biochemistry changes? I don't buy it. I believe it, but as a means to get your calorie count under control, I think it's reasonable.

The piece of the puzzle here, however, is that if you only eat one or two meals a day, and if we go back to where we were at the beginning of this conversation, protein is important.

You have a problem eating a hundred grams of protein in one or two meals. So it's one of the downsides of intermittent fasting is you have to be really careful about your protein intake.

Just a piece of a puzzle for folks to think about. What's interesting again, to me it goes back to the point of whenever often people ask me, especially in terms of nutrition, what I eat or what's the best or kind of what to adhere to and everything to mean is so personalized and contextual.

I don't believe in one size fits all. Certainly I have a high reverence for Peter as well and his rigor in examining the science. I think intermittent fasting is a tool for caloric restriction.

And I it's often done inappropriately. It's done to an extreme. I actually like cycling your calories earlier on in the day when you're a little bit more insulin sensitive rather than at night where it's reserved for sleep as you prioritize, right?

I always say nothing good happens after sunset. And in fact, insulin signaling goes down at that point. So you become more fat storing rather that fat burning to some extent.

But in terms of looking at this fast and feast and famine cycles, that's, I think, where we get it wrong because too often we're looking to push IGF-1 or mTOR muscle protein synthesis for growth, right?

The importance of getting adequate intake. And we do it sometimes with the consequence of AMPK or the ability for, yes, the body is constantly going through autophagy and apoptosis, but much more so when we are restrictive and never in nature did we have food prevalent 24 hours a day.

Right? So my philosophy is we evolved, we had to. Run away from a tiger, rest, eat, repeat. Well, obviously they're sleeping there, but in conjunction with the cycle of the moon and the sun.

Unfortunately, now it's just kind of we're, I call it circadian mismatch or circadian congruence where our cells, where a redox balance is off. We are not understanding the notion of push versus kind break, right?

Too often is everything is go, go go. What do we do? We caffeinate to go more. right, instead of pressing in the bank. I know you mentioned previously, so caffeine and timing, I guess maybe segue into that one.

Well, did a whole kind of down the rabbit hole on caffeine. Is it, is your morning coffee a good idea or a bad idea? And folks can listen to the full details.

Caffeine or coffee is really what we would call a clean drug. It has benefits that are demonstrable and very few problems associated with it. You know, it wakes you up.

It can improve athletic performance to some extent. For some people, myself included, tends to reduce appetite. I don't know that that's been strongly demonstrated.

And it's, been around for thousands of years. The monks used it in tea to keep them awake at night to meditate. Poffey was discovered by a goat herder named Caldean, 700 or 800 AD, when his goats in a certain part of where he was walking them would start jumping around like crazy animals.

And he realized that there was a bush there that had certain berries that the goats were eating. and obviously they were crazy because they had the caffeine in their system.

There's not much downside to it. One, of course, is if you're caffeine sensitive, it can affect your sleep. So that's something to be very aware of, that even a coffee at 10 in the morning may affect you sleep, some people, yes, That's true.

And some, people know, but that something, to, be aware, and it, can make some. People feel a little jittery, uh, coffee and caffeine is really, really.

Yeah, an option for folks. It's not going to, you know, change your life positively or negatively and it's safe. You've published more than 180 scientific papers.

What are some other nuggets here that, um, fly under the radar or that you really kind of want to bring to light? And so in terms of coffee, just to put kind a full stamp on that one, I don't metabolize caffeine well.

I didn't do well with coffee. In general, find people who don' tolerate caffeine or coffee well usually have the mycotoxic burden. too, just as a kind of a clinical pearl that I find.

But in terms of caffeine, I mean, it is a stimulant going back to the point of yes, there's benefit, but what is the context that we're using it in? Right?

Instead of affording the body to take a nap to recover, what do we do? Again, we say, no, you got to push harder. Right. First is our Mediterranean counterparts.

They acknowledge that like maybe that was a good time to rest, digest, and then take back on once we refuel the tank. which is just what we're not doing here.

I remember this was a beautiful Superbowl commercial the years ago. It was from, I think Cadillac, where they were kind of undermining the European culture saying, you know, in Europe you take breaks and you have vacations.

And here in America, we just go, go go and we drive Cadilacs. The epitome of wealth and success. Sometimes we have to be mindful of the propaganda. What we are digesting, right?

Our news outlets, what were reading or not reading. So I guess in terms of, of the papers that you have published, what else? Give some other good nuggets here that are commonly held beliefs, maybe that aren't just often misinterpreted, misalligned.

Five-Second Rule, Cold Exposure, and Caffeine

Well, I definitely encourage folks to take a look at the 50 or so episodes on my podcast, cause there'll be some areas that might be fun for you. You know, what can you do to reduce your risk of cancer?

What can he do do reduce you risk heart disease to test or not to tests? Meaning should you consider a total body MRI or the function health, you know several hundred blood tests.

So I go through lots of these different things. When I did the peer review publications, there were lots different areas, but one of the areas we just haven't spent much time on, I think we've got enough for this audience.

And that's the value question. So something may have benefit, the question is, is it worth the price? And we touched on that a little bit with organic foods, but when you think about arthritis care, you have rheumatoid arthritis, there's cheap drugs that cost a thousand dollars a year, and there are really expensive drugs, that costs 70, 80, 90 thousand a How do you justify the extra $90,000 compared to the $1, 000? How you look at the evidence to say whether that's a good idea or a bad idea?

And now we're down this path with the GLP-1 drugs, Dempic and Wigovi and Monjaro and those, they cost 500 to a thousand dollars a month and you're likely needing it for the rest of your life.

Well, is that a good value? And so analyses have been done to try to figure out how much illness will you avoid by losing weight? So that has been another area that I published a lot in is how do you go about thinking about the value proposition?

Insurance companies would like to say the drug is worth doing if the cost of hospitalizations that you avoid pays for the drugs. So heart failure, you end up in the hospital regularly.

I give you a drug and you don't go in hospital and it more than pays itself. Almost no drugs pay for themselves. Then, you know, then you then begin to ask questions.

Well, what's it worth to avoid a heart attack? A thousand dollars? Million dollars. So it's how do you begin? To think about that. What about people who take an expensive drug, but they can go back to work.

what is that worth? What is it worse if it doesn't affect heart attacks or strokes or going back? But you feel better. There's a whole branch of this called health economics, which really struggles with these questions.

And I've probably spent the last decade or so kind of delving into that and doing peer-reviewed scientific work on it. Value proposition. That's certainly something that we consider heavily when I discuss pros and cons to any sort of treatment, to, any, sort, of medication to.

Any sort. to any sort of decision. There's a trade off. I don't think people realize it's the same thing going back to sleep. So light is a nutrient, so too is darkness.

But we often negate one at the expense of another trying to kind of fuel what we believe is kind feeding our longevity. And that to me is the ultimate incongruence in our evolutionary biology.

So I appreciate how you're taking a very kind of myopic lens into weeding through the science, the evidence, most of which often enough have confounding variables.

Certainly there is a power 10 of 1, but it's difficult to extrapolate beyond that. So, I agree with nearly everything that we discussed today. In terms of medication use, because you point out osteoarthritis, RA, rheumatoid arthritis, anything kind, obviously has a underpinning of inflammation.

another clinical pearl, I've not seen one patient who didn't have some sort of infectious component as a underlying nature there. So while medication I'm not trying to undermine, the premise to me is the question is, okay, what is driving this?

And secondly is what's the best way to intervene? Are we chasing a symptom treating that versus trying figure out, you know, now it's kind of called root cause medicine or the underlying drivers that are causative for the individual.

This has been absolutely very engaging, very thought provoking. A hundred percent we have to do a round two in the new year. I definitely want people to, cause there's still so much that I want to talk about that we haven't hit on yet, but let's plug your podcast.

Cause then you said ever people can go there and obviously dissect some of the things that you're doing. Where, so where can they find you to your social channels?

So the podcast is called live long and well with Dr. Bobby. If you just put in Dr Bobby, you'll find me. if you want to get my free newsletter, just go to DrBobbyEvidence.com.

You can sign up for the free news letter. That can be very, very helpful for folks as well. I'm on Instagram and other things, but you know, I would say the podcasts and the website newsletter is probably the best place to go.

I encourage everyone to start following you. Certainly I am as well. So I love again, the rigor of what you bring.

Closing Thoughts and Podcast Outro

Last question I end every episode with is if you could have one superpower, what would it be? I think we go back to where we began, which is prioritization.

If I had a superpower I would hope that folks have an ability to step back. figure out what's really important in their life to live long and well and prioritize that, whether it's your sleep, exercise, whatever else it might be, but not to get lost in the day to day where you're just rushing from one thing to another and not really sitting back and thinking carefully.

So that's what I would add. When we are rushing, we miss out on the gift of the present. Absolutely beautiful way to end this episode. Thank you again for your time, Dr.

Bobby. This has been awesome. I certainly hope that everyone has enjoyed this as much as I have. Please like, review, and share this with someone you feel like could benefit from the conversation.

And until next time everybody, stay healthy, Stay wealthy. Thanks so much. Goodbye. Thank you for tuning in to the TBD Fit Podcast on Dr. Talks, where we unpack all things health and longevity.

If you enjoy the show, like, review, and subscribe. This allows us to have a greater reach and help others on their health & wellness journey.