

How Uric Acid Disrupts Your Metabolic Health – Dr. David Perlmutter – #906

Dave Asprey:

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Dave:

You're listening to the Human Upgrade with Dave Asprey. Today is going to be a lot of fun because I'm interviewing a dear friend and a fantastic human being who's moved the needle on our awareness for health in much of his career. Dr. David Perlmutter. He's been on the show several times and is one of those guys who's connected the gut and the brain and how we treat kids, how we treat ourselves for decades of writing books.

So, one of the greats and someone I've recorded interview on his boat, it tends to be in my part of the world some of the year. So it's always good to get to interview him because he knows stuff that no one else does. And in our interview today, we're going to talk about what I think might be the next big biomarker. You've already learned about levels health, and what you can do with continuous glucose monitoring.

You've learned about key tone monitoring all the different ways you can do that, but do you know your uric acid levels? You probably don't, but it turns out there's equipment and there's reasons to measure this. So what you're going to learn as I promised you this year, I'm going to tell you exactly why to listen to a show before the show.

So you know that it's a good idea to listen to it, or you could say, "I just don't care." So you're going to learn in this one from one of the great functional medicine doctors out there, what uric acid does to you, why it's a key health marker and a major indicator of whether you are getting chronic degenerative diseases. And this is true at any age. If I had known this, when I was 20, it would've changed everything.

And it probably would've saved me a million dollars later. So in the show, you'll learn how to measure your uric acid levels, what they mean. And you'll also learn about a new book that has the best name of a book I've seen in a long time. And it's called Drop Acid, which is the best, most creatively naughty yet completely accurate title ever. So Dr. Perlmutter, my friend, welcome back to the show and thanks for a hilarious book title.

David:

Thank you. As we were saying before we went on just great to see each other.

Dave:

So what you've done in Drop Acid is identified okay, there's a level of something that medicine has looked at for a specific condition and said, "Wow, fluctuations in that level tell you all sorts of things, including an early indicator for diabetes, obesity, cardiovascular disease and Alzheimer's." Those are the big four killers from my anti-aging book. Those are the things that take out most of us, you have to take care of those if you're going to live a very long time. First don't die so you can live a long time.

David:

The No. 1 cause of death isn't a virus or anything infectious it is a consequence of our disrupted lifestyle. And the history of this mismatch, if you will, between our genes and our current environment or what

we call evolutionary environmental mismatch goes back as it relates to uric acid and the metabolic issues that we're suffering from.

This can be traced back to about 15 million years ago during the middle Miocene period, when the earth became cooler. And there was a strong selection pressure on our primate ancestors favoring those who had whatever genetic mutations might let them make a little bit more fat, make a little bit more blood sugar to power their brains.

And they would survive and pass those genes on to the following generations. And that happened all the way to us. And we've identified that there was a suite of genes in mutations that took place over more than a million years in an enzyme called uricase that breaks down as you would guess, uric acid such that these primate ancestors lost the ability to break down uricase.

So their uric acid levels were higher and that provided a signal in their bodies that food was scarce, make fat, store fat, raise the blood pressure, raise the blood sugar. And we inherited that thrifty genome even to this day, it was helpful for our hunter gather forebears because they might not know when their next meal was coming. But ever since agriculture and certainly a lot more recently, we've been targeting that whole mechanism to make body fat and store it.

And now we have this mismatch whereby fructose, which is the signal fructose fruit sugar becomes uric and in your body, in my body, in the bodies of everybody on the planet. And that's a signal saying that we've got food scarcity is coming, we better make fat. So now that we understand that we can target uric acid, you can measure it at home, you can get your doctor to measure it and then we can lower it. And that is turning out to be a really powerful player to reign in a whole suite of metabolic issues.

Dave:

All right, this sounds really promising for all the biohackers out there. And also you might not be a biohacker you might just say, "Well, I have this weight that won't go away and I'm tired of going to the gym all the time and it not moving. And I'm tired of trying a keto diet and it not moving and saying something's wrong." Well, this is an early indicator, so we can incorporate this. And what you brought to my attention when a box arrived and I opened it up and it says, "Drop acid." And there's-

David:

What did you expect would be in that box?

Dave:

Coming from you, you never know, but it was-

David:

Vinyl Hendrix albums, first of all.

Dave:

Exactly. I dug through those that tied that now-

David:

A tie [inaudible 00:06:10] right.

Dave:

It didn't just have a copy of your new book in it. It had a meter. One of these meters, which measures uric acid from a little blood stick, same as you would with an older blood sugar meter. If you don't have the continuous glucose ones or you would with a keto meter. So it turns out a little tiny prick on the finger really helps. And first off, okay, you sent me one. Thank you. But what is a meter like this normally run?

David:

I think they're about \$90 or somewhere between 80 and \$90. And I think they come with 20 sticks to measure and unlike measuring your blood sugar every day for people who don't have a CGM, this is something you do every two to four weeks. Because it's not going to vary that quickly depending on of course how aggressive you are about lowering it. But the nice thing is it records.

I don't know if you're able to see that that was my most recent measurement, 4.7. But it'll record your history of measurements and allow you to see what the impact is of your change in lifestyle, which is what it's all about. I mean, it's why we wear wearable devices to track our sleep, to track our blood sugar. Because once we know where we are, we can observe how our lifestyle changes affect those parameters.

And now we have a new parameter to look at, which is measuring our uric acid. And I just want to say that here in the United States, we're a little behind other countries. For example, Japan has been studying this and really actually intervening with patients who have elevated uric acid and other metabolic problems for decades. For at least a couple of decades.

They put out a really fascinating study back in 2009, where they followed a group of individuals, 90,000 people, adults. 42,000 men, 48,000 women. They followed them for eight years. They measured their uric acid at the beginning of the study. And they found that with people who had a level of seven, which is very common or greater their risk of what we call all cause mortality meaning dying from anything whatsoever was increased by 16%. The risk of death from cardiovascular issues was increased by 39%, risk of death from stroke increased by 35%.

And what I found really fascinating was that for every point elevation above seven, there was an additional eight to 13% increased risk of death from again, what's called all cause mortality, meaning you died from something. So, this a big study went on for a long time. That's compelling information, especially now that we know that uric acid is signaling our bodies it's sending an alarm signal to our entire body, saying, "Winter is coming."

And it is telling our bodies, get ready, reduce your metabolism so it compromises mitochondrial function, make body fat, lock up the body fat. Store it so you can't tap into it and even raise your blood sugar so you can do what? Power your brain. So you can avoid two things. You can avoid starvation and you can avoid predation, meaning getting eaten by another animal.

We have a pretty sizable brain we need to power it. So this is a signal then that's telling us to get ready. And it's very interesting because what it does. And I think many of your viewers, especially those who really consider them deeply entrenched in the biochemistry. What uric acid does is it shuts off AMP kinase. And I'm certain that many of your listeners, viewers know that we want AMP kinase pathway lit up all the time, because-

Dave:

Which is why coffee, right?

David:

Why coffee? Why exercise, how metformin works to keep diabetics blood sugars lower quercetin berberine lots of things we could do to keep our AMP kinase lit up. Because when uric acid is elevated, it shuts that down and it tells us don't burn your body fat store your body fat. It actually shifts this whole metabolism over to another way of dealing with AMP.

And that's through what's called AMP deaminase. And this is exactly the shift that happens for example, in bears, prior to their hibernation. They're trying to make as much body fat as they possibly can and ratchet down their metabolism so they could live in the cave for however many months. And they need to make this body fat during the fall when they're eating the fructose, eating the berries.

So unless any of your viewers think they're going to hibernate for several months, it's not what we need to do. We want to be burning our body fat. We want to be keeping AMP kinase active, keeping our blood sugar lower. And I think you mentioned something a moment ago. I think it was really very important about people who are struggling with their blood sugars, their blood pressures, their body weight, doing all the things.

They're listening to every podcast, trying to do their best, whether it's keto or paleo or whatever, but they're sticking to these plans and maybe making progress. But there always wondering if there just isn't something missing. Some other little piece of the puzzle, that little corner piece in the jigsaw puzzle that when you get it, you go, "Yeah. Finally." And I would submit that for many people, it's going to be targeting specifically, and we'll talk about it. Their uric acid.

Dave:

I have to say, having looked through your book and having just chatted with you about this. I wish that I had included this in Super Human because the percentage risk of lowering of all-cause mortality, it's a major thing you do when you're looking to live a long time. And the percentage that you cited there are very meaningful.

I went through many interventions and they are saying, "Okay, this one looks like it works for this. This one looks like it works for this." But uric acid as a signaling molecule, is something that a lot of people haven't talked about. So maybe this came out of Japan or something, but how come you're the first person in the West who's talked about this. It seems like it's a big enough thing you should all be talking about it.

David:

I'm absolutely not. You'll note that Drop Acid, which is something I think we should all do in the context of uric acid is dedicated to a man named Richard Johnson MD. Dr. Richard Johnson, University Of Colorado. He's done the pioneering work and really began to raise the level of understanding of uric acid's role.

But again, this is something that's not uncommon in many other countries around the world in America, it's all about lowering your cholesterol and hope for the best. We really see that the mentality here in north America is live your life however the heck you want. And when you're finally cognitively impaired, your blood sugar's going through the roof or whatever it is, we'll fix it for you. Don't worry. Pharmacy is here. Main mainstream pharmaceuticals are here to save the day.

That is just a perversion of reality, especially as it relates to the brain. And that's what really got me started when I reviewed studies like a Japanese study looking at 1600 people and followed them for 12 years. And every two years, they did an assessment of how well their brains were working. What they found was after the 12 years, those who had the higher levels of uric acid above seven, they

experienced an 80% increased risk of developing dementia. A 55% increase risk of developing specifically Alzheimer's disease.

Did I say a disease for which there is no treatment? And they had 166% increased risk of what is called mixed or vascular dementia. Now, I'm a neurologist and in dealing with these problems from an interventional pharmaceutical perspective, there's very little. From a pharmaceutical perspective, there's really nothing yet that we have that can arrest this problem.

It's very challenging. And it gets me both from my professional perspective and from a personal perspective, having dealt with this in my dad as well. So anything that we can do that has an impact like that, I think is very valuable, but the thing about this metabolic signaling is it has huge impacts on cardiovascular disease, on hypertension.

We've mentioned Alzheimer's and even various forms of cancer like pancreatic, colon, and breast cancer that are related to this metabolic mayhem and that's being kind. So, it's a new and very exciting tool. And the exciting thing about it is it's something that we could take home. It's not like you have to have your genome sequence and send it off someplace and hope that you get back an interesting interpretation that might or might not be effective for you. This is really very straightforward.

Dave:

All right, everyone in the Upgrade Collective. And if you're listening to the show, Upgrade Collective is my membership and mentorship group. And we've got a bunch of people in our live audience in a real active chat thread, all making jokes about acid. And at the same time going, "Come on, what do we do to lower it?" But first I want to know, what do we do to raise it? What are the things that are cranking this up in people?

David:

So for many years, people have known that elevated uric acid can be a problem generally, in the context of something called gout, where you develop painful crystals that accumulate in your great toe. And it's traditionally been described as the king of diseases and the disease of Kings. Meaning people who ate a lot of rich food, a lot of food rich in what are called purines. That's a lot of meat, but specifically organ meats, liver, and kidney. And it turns out that while those can relate in our modern world, the big player is fructose or fruit sugar.

Not necessarily the fruit sugar found in an apple, but the fructose that's found in soda added to sauces. Actually, found in more than 60% of packaged foods in the grocery store. Things like fruit juice, for example, there's nothing natural about fruit juice, the fructose content will knock your socks off fructose is metabolized directly into uric acid.

There are only three things that make uric acid alcohol, purines that I mentioned earlier, and fructose. And so when you see, for example, a combination drink that has both high purines and alcohol, which is beer made from yeast. So it's got a lot of purines. Then we begin to understand why people get a beer belly, because it's telling the body aggressively through two inputs purines and alcohol rather make fat because winter's coming.

And gaining body fat and raising your blood sugar and your blood pressure are terrific things. They're wonderful things for 99% of the time on this planet, but not now. So until just recently, if you could make a little more body fat you would survive, because you had that backup resource for calories so that if there was no food, you might make it through. Whereas the next person might not.

And this, again, we call this the evolutionary environmental mismatch. And I actually wrote my first paper on this whole concept of environmental match 50 years ago, a half a century ago. Published

that in the Miami Herald in 1971, I was 16 at the time. And I concluded that paper op-ed by saying, "But what about us living today with the outdated machinery?" Meaning we have machinery that's really set up for the hunter gatherer times or even prior to that, when the world was a different place.

And what I'm saying is, if we can emulate those signals to our DNA and our physiology that have evolved to keep us healthy, we're going a long way to offsetting these incredibly powerful metabolic disruptions that are paving the way for, as we talked about earlier, the biggest cause of disease on our planet. And to be clear, this uric acid is screaming winter is coming make fat.

And also important to recognize that it raises our blood pressure because it's a signal that we're facing dehydration. Now, that's a little bit more complicated, but understand, let me preface this by let's think about a camel and a camel is walking across the desert. It's not drinking water for three weeks and it has this great big hump. What do you think inside that hump? Not water, fat because when we burn body fat, we create two things, carbon dioxide, and what's called metabolic-

Dave:

Water.

David:

Water. So fat is a powerful resource for us as humans. Yes, as a resource for calories, we get that, but also a hedge against dehydration because when we burn that fat, we're making metabolic water. So it turns out that when our bodies think we're dehydrated, we turn on fat production.

And why do we think we're dehydrated? Well, we might be dehydrated if we're not drinking enough water, but we can also signal that by raising sodium. When we don't have enough water to drink, our sodium level goes up. And that turns on a pathway whereby our bodies make fructose. Then that fructose becomes uric acid. And what happens? Our blood pressure goes up.

We make fat so we can make metabolic water. How do you raise your sodium? Well, either with the playoffs or the super bowl, you park yourself on that couch and eat that bag of pretzels with a lot of salt and your serum sodium goes up. You start making fructose, making uric acid, making body fat. And then next thing you know, your signaling this entire alarm cascade in this case, thinking that your body's becoming dehydrated and it's trying to protect itself.

Dave:

Okay. Couple questions for you there. Low sodium diets make people feel like crap and raise risk of heart disease. The current levels that the RDA has for sodium for total sodium raise levels of renin in the blood enough that it increases your very substantially risk of cardiovascular disease. Higher stress means higher demand for sodium and from many of the things I've seen, you get enough sodium.

And for me, it's about six grams a day, roughly three times more than the RDA. Then I have a clearer head. I make stomach acid better increases in bone density. There's all this good stuff from salt. And then we've got guys like Paul Saladino and Liver King. And me I've been recommending raw liver since my first book on fertility yet it's high in purines. So, how do we look at that? I don't want people to lower salt, because they're going to feel like crap if they do [crosstalk 00:22:13].

David:

Let's first tackle the salt question and we'll get back to the liver. And first the important thing about salt consumption is that yes, you're right. We do need some sodium, but there are two things that are

extremely important. And that is the rate that we consume it and the concentration by which we consume it.

So if a person's eating a salty food that is going to give them sodium, which has, as you mentioned, some retrospective studies indicating that there are benefits. And we know we need serum sodium to be balanced. The trick is to follow it with water and there, your sodium level isn't going to change. So you're right, but eating just salt in and of itself tells the body to make fat. I mean, this is something that cattle ranchers have known for a long time.

Why do you think they put a salt lick out? So, that the cattle are going to lick salt all day long because it's making your physiology thinks it's dehydrating and they increase their fructose production and make body fat.

Now, as it relates to liver, which has huge properties that are helpful, the B12 availability, iron availability, et cetera, it's really all about the individual. I would say that the biggest issue by far in away, isn't eating high purine foods. It's always been the fructose.

Dave:

There you go.

David:

Even in the day of gout, it was always the fructose back in the 1800s, the amount of sugar consumption in England was actually quite substantial, especially in being mixed with alcohol. Then you layer on top of that, the purines and to this day, and we can speculate, we don't need to speculate.

We know why, to this day, when you look at a diet for gout or a diet to lower uric acid, go online, go to one of the institutions, their websites, it all about lowering purines and they're so loathe to talk about sugar. It's the sugar. It is-

Dave:

There you go.

David:

Purines with sugar, whether you want to talk to Nina Teicholz or Robert Lustig, or any of these people who are trying to get this message out. Casey Means it's all about the sugar and yet, oh no. You need to stop eating liver. You need to stop eating organ meats and venison and scallops and muscles really, as it relates to uric acid by far away, it's the fructose. That's the thing that increased 1000% in American adults consumption going from 1970 to 1990.

Dave:

In order, then the things that are going to raise you uric acid, the most would be No. 1 is sugar or typically fructose-

David:

Let me give the top five. No. 1 would be fructose-

Dave:

Then alcohol, then liver.

David:

Number two fructose, number three is fructose number, four purines, number five alcohol. And I [crosstalk 00:25:01].

Dave:

Purine is worse than alcohol, really?

David:

It's alcohol and purines, I don't know if the order right really depends on the individual.

Dave:

Okay. Fair point.

David:

Alcohol needs a little bit of, we need to double click on that for just a moment because wine, it turns out doesn't really have much of an effect because wine has offsets like fruit has offsets. You can eat fruit. Wine has offsets probably the bio flavonoids that target an enzyme that makes uric acid. So in women retrospective food, frequency questionnaire studies demonstrate that women who drink wine have a slightly lower uric acid than those who do not. Men it's about a wash. It's about neutral, hard liquor is associated with a slight raised uric acid level.

But as I mentioned for beer is a big issue because of the alcohol yes, but also the purines. And once again, Japan is ahead of us on this by creating and marketing, purine free beer. And I can assure you in Japan, this is well beyond the small percentage of their population that has gout. They recognize that purines make uric acid, which leads to high blood pressure, which leads high blood sugar and obesity. So now you find purine free beer.

Dave:

I did not know they did that. Why does Japan do so many of these cool things that we don't hear about here for many years?

David:

Well, I think they got into trouble earlier than we did. Japanese people tend to eat a lot of umami flavored foods. Umami foods are going to be very high in purines. And so, they have a risk for high uric acid and have been dealing with this actually for quite some time. And then began to study, well, what else maybe going on? What are the correlates that we're seeing with high uric acid?

And they began to unravel and reveal to the rest of the world these really high relationships with various metabolic diseases. One study published, I think 2016 by both Japanese and Turkish researchers is entitled uric acid in metabolic syndrome from an innocent bystander to a central player. Meaning yeah, we've known that there's elevated uric acid that correlates with obesity, diabetes, hypertension known that for a long time.

But that study really made it clear that it's not just happens to be elevated in conjunction with these issues it's causing it. It's playing a role with lots of research. I'd delineated it in the book showing that when you intervene and stop uric acid production, and don't even make a dietary change that you can reduce hypertension, you can reduce weight gain.

And in some of these studies, they actually raise the uric acid by giving humans what? Fructose, placing them on a high fructose diet. But frankly, you don't need to even do that. When you see the amount of fructose that adolescents and young adults are consuming these days in the form of energy drinks and sports drinks, along with soda and fruit drinks, it's breathtaking. And it's no wonder that uric acid levels, which were averaging about 3.5 in America in the 1920s now are averaging 6.0 in American adults.

And that increase is in lockstep with our increase in fructose consumption. So, there have been variations in alcohol consumption, certainly going through prohibition, et cetera, and purine consumption as more people adopt a plant-based diet. But what we're seeing is still uric acid levels are skyrocketing. It's been estimated and right now we know that in America, one third of adults isn't just overweight, but is obese. A third of American adults is obese.

And in the distant future in 2030, that it's way in the future, some distant future that number's going to be 50%. The flip of a coin obese, not just overweight right now, more than 70% of Americans is either obese or overweight. And this isn't that there's been a sudden change in our genome it's an environmental issue. It's really based upon our choices that are so heavily influenced by industry.

Dave:

I have a question for you. This comes from the Upgrade Collective. There are a variety of what's called Biogenic amines, and these are things that are formed in the gut and purines are one of them, but so is spermidine there's putrescine which strangely enough has benefits and negatives, but are all of these going to raise uric acid?

David:

No, I mean, these are metabolites they're from, so they they're not. And these are actually created to some degree by our microflora, by the gut bacteria. But that does segue nicely though into the notion that there's an interplay then between uric acid and our gut bacteria. Such that higher levels of uric acid favor more or what are called the pro-inflammatory bacteria. And I always want to break it down and say, "That sounds terrible."

We don't want more inflammation. That's always bad." No diabetes isn't always bad, body fat retention isn't always bad it could be a lifesaving situation. Let's look at it in context. So, having an increased amount of inflammation can be lifesaving and would have been lifesaving for our ancestors in helping them deal with various types of infection. Inflammation is an important life saving mechanism within your physiology.

So the notion that a higher level of uric acid by increasing inflammation and increasing gut permeability might have an upside I think, it just changes our perspective a little bit. Similarly, the APOE4 genetic allele is associated with increased risk for Alzheimer's. So obviously under any circumstance, that's a bad thing, right?

Well, no, we know that in certain cultures that are equatorial and live in a very agrarian or a hunter gather like environment carrying the APOE4 allele that we used to call the Alzheimer's gene is actually associated with a lower risk of Alzheimer's and certainly a better ability to combat certain infections, specifically parasitic infections. So getting back to the uric acid and relation to the microflora, we know that for example, gout can be treated with what is called a fecal transplant. By giving gout sufferers, normal gut bacteria in the form of a fecal transplant.

We've talked about it before, their frequency of gout attacks goes down. So it's a two way street. And again, hey, the various things that uric acid can do in your body are generally in the context

of our modern world, where it's 365 days a year, that we're signaling our bodies to get ready for winter, make fat, raise the blood sugar, raise the blood pressure. We have to think of it in the context of gosh, for our ancestors that was lifesaving.

And that's why we're in this situation today, whereby everyone walking the planet has inherited this uricase mutation. Wonderful review about this in scientific America, and about how this all happened. And therefore, when we come upon the blueberries in the late summer and early fall and signals our body to make fat. Well, that might have been great for our hunter gather forebears. But for you and me who have access to fructose 365 days a year, it's sending the signal, oh my gosh, you're not going to have food winter's coming. And it doesn't work for us.

Dave:

This is one of those things about eating seasonally. If you do that, you're supposed to fatten up in summer. And towards the end of summer, you would eat more omegas six fats because they're more of them available, which slow down your metabolism-

David:

Exactly.

Dave:

Make you tired and put you into hibernation. That's why bears do it. It's designed that way. But if we don't want to put on fat all summer long and then go through a winter without carbs, where our brains are slow and we're tired, you might want to eat seasonally, but maybe you don't need to load up quite as heavily, even on fruit towards the end of summer when it's available.

David:

Yeah. And I would say not just eat seasonally, but if you're planning to eat seasonally, in other words, not loading up, but eating more of those fructose rich carbohydrates in the late summer, early fall, you've got to be all in on the entire rest of the plant. Meaning that once winter comes, your body should experience fasting or at least the very least time restricted eating.

Dave:

And darkness.

David:

So, it's not really [crosstalk 00:34:51] choose from the paleo menu. And so I'm going to do part of it, but not all of it because it's a whole program. If you're going to emulate our ancestors, then you need go to bed when it's dark. You need to have high quality sleep and every aspect of what we assume our paleolithic ancestors experienced.

Dave:

Okay, I'm getting you there. And this is a way of monitoring if you get your measures every four weeks, you can see if what you're doing to probably just reduce your fructose, which you and I have been recommending for at least 10 years in the books that we write and all. But there are other markers that matter.

Now, I'm going to ask you this as an MD, as a neurologist, if you had a random person from the population out there, you don't know much about them. And you wanted a marker to predict if you got COVID, would you be hospitalized? And you could either get their vitamin D level, or you could get their uric acid level, which one of those markers is likely to be more important?

David:

Hard to say, we've seen the data on vitamin D and we've seen the data on blood sugar upon entrance. I think that one of the most powerful tools for predicting outcome is called a tape measure around the [inaudible 00:36:18] very sophisticated. But as they have it in May of 2021, a study came out, Chinese researchers actually looked at 1,854 people and measured their uric acid when they presented to the hospital. And what they found was really quite interest that the risk of being one of three things going in the ICU, being put on a ventilator or death.

And all three is what they called the composite score. But the risk of these things was between two and three times increased if you entered the hospital with a high uric acid level. So, that shouldn't be a surprise because that uric acid level is going to be seen in people with diabetes and with hypertension and certainly with a high body mass index or obesity.

So it does have an effect on immune function. I think we're just beginning to see how it relates inflammation. Like we talked about a little while ago, but again, there are interventional studies being done now where pharmaceuticals are used to lower uric acid and we're seeing results in terms of things like body fat and blood pressure, how the pharmaceuticals work like allopurinol, which is a gout drug.

Is it targets A specific enzyme called xanthine oxidase that'll be on the quiz. That's fundamental in the production of uric acid. Well, turns out that that xanthine oxidase is dramatically inhibited by some exotic thing called quercetin, who knew?

Quercetin and luteolin, another bioflavonoid available at a health food store target this xanthine oxidase enzyme almost as effectively as the drug. And so we see studies one study from Oxford and British Literature showed that giving quercetin 500 milligrams a day in a group of 22 young men with elevated uric acid lowered their uric acid by 8% in two weeks.

No other changes, just quercetin. And we mentioned it earlier, quercetin powerfully targets AMP kinase, who wouldn't want that? It's a senolytic, it's an anti-inflammatory, it's an antioxidant. So I'm all in, as it relates to taking 500 milligrams, of quercetin. I'd been doing that for quite some time, along with a hundred milligrams of luteolin.

Dave:

Luteolin and quercetin, right?

David:

Strong medicine. It really is. Just those two nuggets I think for your viewers going to have a really significant effect on lowering their uric acid. And you were alluding to the fact that you do have friends who are all in, as it relates to things like eating organ meats, for example. And I'm not saying you shouldn't do that. I'm not saying be even though they're high in purines, do you necessarily have to go on a program that eliminates them?

You do not depending on your uric acid level, but let's say you do your best to eliminate the fructose. You're taking the quercetin, you're monitoring your sleep. You're doing all the right things. And it's still a little bit recalcitrant. It's not reaching 5.5. That's the number, that's our goal. It's still around six. That's better, but not good enough.

Then that person may want to maybe cut back a little bit on the purine rich animal foods and see what happens. But I think, again, third time I've said it, the big players, the fructose add in the quercetin, add in some luteolin. And certainly, I think generally in most people they're going to see a pretty dramatic lowering of the danger signal, screaming in your body, telling you to make fat and store fat.

Dave:

Now, I got curious as we were talking about specific types of probiotics that produce uricase, which breaks down uric acid. What's your take on probiotics for this?

David:

Well, I don't think there's really much in the way of marketed-

Dave:

Nothing marketed.

David:

Probiotics that do in fact supply uricase. Again, to remind everybody the uricase is the enzyme that in other mammals, for example, breaks down uric acid to allantoin. We don't have uricase. We have really zero as it relates to uricase enzymes. So we don't have that nor do any of the great apes, the orangutans, for example, all of us have elevated uric acid four to five times higher than that of other mammals, because it was a good thing.

It was a good thing for us to become insulin resistant. Think about it, we're always castigating insulin resistance and all those things. You can input whether it's talking to Gary Tobbs or Rob Lusik, whoever, and that's in the context of our modern world, but again, a survival mechanism.

But that said, I think we're going to see it. I think more importantly, what we're going to see will be targeting an enzyme called fructokinase. And that's step one. It's so it's so interesting. That's step one in the changing of fructose through several other intermediates into uric acid. If we can inhibit fructokinase, that will be the home run.

There are a group of people who have fructokinase inherited deficiency, and they develop a disease called fructosuria where their urine is full of fructose, because they can't metabolize it. They can eat sugar all day long. They don't gain weight, they don't develop any metabolic issues. So there's a lot being done to look at what would happen if we inhibited fructokinase.

Dave:

So there's a whole pack of pharmaceutical or lifestyle things to do that. I want to make sure that listeners, because I'm seeing questions from the upgrade collective. So anyone listening to this Luteolin, L-U-T-E-O-L-I-N-

David:

100 milligrams a day.

Dave:

I'm going to take that every day. End question. What was the dose of luteolin that you recommended?

David:

A hundred milligrams a day.

Dave:

Hundred milligram a day. So, I take that almost every day. I don't always take the same thing every day, but that's certainly in my stack.

David:

I don't either. And I was giving a talk recently and they talked about you had to do your disclosures because it was a continuing medical education talk. And I had to indicate I was an advisor to a certain CGM company and whatever. And then I said, and another disclosure, I don't take the same supplements every day. And another disclosure is on occasion I've eaten gluten and I'm still here. So, and another disclosure, my wife and I binge watch shows sometimes on Netflix truth be known and yeah, believe it or not. Yes, we're still here, but-

Dave:

All right, Dr. Perlmutter, what's your favorite show? You have to tell us that.

David:

Suits.

Dave:

Suits, all right.

David:

Hands down. And the problem is we're at season eight at the end. We know we're at the end. Anyway, Megan Markle has probably already met Prince Harry. So I think she had to drop out of the rotation. So we know we're near the end. Anyhow, I mentioned a moment ago that this really critical enzyme called fructokinase is what is needed for fructose to do its dirty work.

For fructose to become uric acid and signal the body to really disrupt its metabolism. Uric acid enhances this enzyme fructokinase. So it stimulates even more and more of its own production. And we rarely see in physiology a situation where something feeding back actually makes itself even more active. Normally, we have what's called feedback inhibition. Like we see with insulin regulating blood sugar in this case, it's so desperately important for our survival, that uric acid amplify itself.

So gosh, now that we know that man oh man, knowing what your uric acid level is taking the quercetin, cutting your fructose, taking the luteolin, restorative sleep, get some monitoring device. I use an Oura Ring. I'm not on their board. I'm just saying I do. And it's very helpful. Know how well you're sleeping and really get in touch with your uric acid level. And finally take that last edge off in terms of your metabolic challenges.

Dave:

I love it. I just did a little quick sleuthing as we were going through this, looking at probiotics and it looks like there are some species of *Lactobacillus plantarum*, which is a common probiotic. In fact, you probably use *plantarum* in some of the things that you've created.

David:

All of the things I create.

Dave:

All the things you created. And there are specific subspecies that grow on buffalo milk, which is probably similar to yak milk, but it's grassfed, it has to be. So likely from grassfed milk would be the same from cows or casava or sweet potato. And casava and sweet potato are generally lower toxin carbs that I recommend. I think those are ones that you would also recommend that don't have any fructose in them.

David:

Hard to say. I would say probably what you're saying is true, but fructose in trace amounts is seen in-

Dave:

Doesn't matter.

David:

A lot of vegetables though, the name fructose comes from fruit sugar. And I want to be clear, we're not saying in any way, that the data does not indicate that we shouldn't be eating fruit. An apple a day keeps the doctor away five apples a day and the doctor, you will pay. Meaning, if you want to have an apple go for it, have an apple or to make sure eat the skin.

Cherries are actually a great idea for people who want to control that's... If you look at the, the O on Drop Acid, that's a [crosstalk 00:46:06] a cherry and falling from the sky. The indication there is that it's bringing down uric acid. So tart cherry area has been used as gout therapy for decades.

And why? Because it works. It does lower uric acid specifically targets that enzyme xanthine oxidase that's involved in the creation of uric acid. I think the other thing I want to just get back to just a moment is the notion that not drink enough water, grandma said, or mom said, you got to drink a lot of water. They said a lot of stuff to us. And they always said breakfast was the important meal of the day, most important.

But I think, nowadays it's not necessarily what mom told us to eat, but I think the bigger story is when do you break your fast in the day? But having said that, the idea of eating some fruit is appropriate. An apple has in it, some bioflavonoids that are helpful in reducing uric acid formation has vitamin C, which helps us excrete uric acid.

And it's got fiber that slows our absorption fructose. So the liver can handle it. We're not going to spill it over into the intestine where we then absorb it. And again, pave the way for activating uric acid. So, by all means, fruit is still very much on the table, but again, there is nothing really [solulious 00:47:34] about drinking a 16 ounce glass of fruits juice it may as well be a Coke.

Dave:

Well said. And when people give that stuff to kids, it even drives me crazier. Kids don't need that. It's just bad for them. And kids can drink water, right? They have this weird thing called thirst.

David:

That regulates how much water they drink.

Dave:

Yeah. Who would've thought, right?

David:

It's a great thing to ask somebody. When were you last thirsty and when were you last hungry? That's one of the great things about fasting, for example, is you get in touch with being hungry again, and that does two things, yeah. You know what it feels like to think that you need to eat. And B, hunger sort of for me anyway, triggers gratitude, because we do have food and we have food whenever we want food and good food at that. So you can reestablish a relationship with that sense of gratitude by fasting as well.

Dave:

That is something that certainly is in alignment between the stuff that we both teach. And it's interesting that your background is neurology as well. So all of this, you look at the metabolism, because you're also looking at the nervous system and the brain. What do we know about uric acid and lining of the nerves? Myelination neurotransmitters, things like that.

David:

Well, we're just beginning to understand that this process that we're talking about is clearly affecting the brain. And the fact that it would, should not be a surprise for people like you and me, where we've known that metabolic issues have been correlated to declining brain functionality right now, and also increasing our risk for things like Alzheimer's in the future. We see strong correlations between excess body fat, high BMI and risk for Alzheimer's incredible correlations between even subtle elevations of blood sugar.

And certainly the hemoglobin A1C and dementia risk, hypertension has been talked about as an Alzheimer's risk issue for many years. And that said, then it shouldn't be surprising that uric acid is related to all of those things. And therefore clearly related to Alzheimer's risk. Having said that, let me go back to what is called the polyol pathway.

That is the body's ability to convert glucose into fructose because a recent... And there there's several things that will do that. We talked about dehydration serum sodium goes up activates an enzyme aldose reductase that turns your blood sugar into fructose because it's a survival mechanism. So that happens in the brain. The brain can convert glucose into fructose and therefore lead to elevation to Valeric acid that will threaten mitochondrial function.

Alzheimer's is at its core a mitochondrial disease where the brain cells ability to make energy, which is the job of the mitochondria declines. And these brain cells just basically stop working because they run out of the ability to use fuel, first that they can't use is glucose. That's why there are studies by one gentleman in New Zealand, Matthew Phillips, putting Alzheimer's patients on a crazy diet called a ketogenic diet, giving the brain cells an alternative fuel.

And he's demonstrating improvement in cognitive function in patients with moderate stage Alzheimer's disease. I interviewed on my podcast. His name is Matthew Phillips. My point being though that the really seminal event seems to be a bio energetic crisis in the brain of the Alzheimer's patient. It's happening-

Dave:

It's all mitochondria.

David:

Pardon me?

Dave:

It's all mitochondria. Like how good are you [crosstalk 00:51:28] food?

David:

And one recent study demonstrated that, you know, we think the brain is starved for glucose, but the actual glucose within the brain, but not in the cell is as much as fivefold higher in certain parts of the Alzheimer's brain, the areas that are most involved, the temporal part of the regions of the memory center called the hippocampus. There's actually a backlog of glucose. Well, where does it go? What does it do? Well, it activates this polyol pathway and gets turned into fructose. Fructose is an alarm signal.

It makes uric acid... Uric acid is toxic intracellularly to the mitochondria. Why? Because it wants to slow down the metabolism in the rest of the body to conserve energy. But it's detrimental to the brain. And the initial event here is again, insulin resistance. So however we get there, we're ultimately going to play this forward through the mechanism fructose and then uric acid.

So getting back to conversations you and I have had for years, we really need to do everything we can not to become insulin resistant because the brain desperately depends on the function of this hormone insulin to allow it, to get blood sugar, not only into the brain, but also allow blood sugar to do what it does in brain cells. Insulin in the brain is more than just a glucose story. More than a sugar story. Insulin is actually a trophic, nutritious chemical for brain cells.

It's the fertilizer. If you want to grow brain cells in the Petri dish, you add insulin. So we tend to lock into our notions of, insulin drives the blood sugar into the cell. What's the next question? No, we still need to unpack insulin. It does a lot of other things in the body. It signals the body to make fat as an example. So all this stuff's coming together and the incredible role that uric acid is playing in insulin resistance is really breathtaking.

Uric acid is the signal telling our bodies to become insulin resistant and how it does it. One of the important mechanisms is, and I'm getting deep into the weeds, but I know that your guys are probably loving this uric acid when it's elevated, shuts down the production and functionality of something called nitric oxide in the blood vessel, that-

Dave:

It turns out everyone in the audience knows about nitric oxide. Because we did a couple episode and people just want to talk about erections just over and over. So that's got to [crosstalk 00:54:10].

David:

Uric acid is associated with a 34% increased risk of erectile dysfunction.

Dave:

There you go guys, see.

David:

Uric acid facilitates nitric oxide. We need nitric oxide so blood vessels, not just in the penis, but supply the heart and the kidneys and the liver and the brain-

Dave:

The brain. Yeah.

David:

We need to supply our organs. When we can't keep nitric oxide functioning, we increase our risk. I mentioned earlier of death from stroke, 35% increased risk when uric acid is elevated. So how does Viagra sildenafil work? It increases how nitric oxide is able to do its job and allow blood vessels to dilate. That's what you need for an interaction. And two very large studies came out just last month, demonstrating a 70% reduction in Alzheimer's risk in men who regular use Viagra.

Now, I'm not promoting Viagra as an anti-Alzheimer's regiment. This was a study looking at medical records of more than a million men. But what I am saying is we have to keep nitric oxide working. And when we now recognize that uric acid does its dirty work by compromising nitric oxide, you darn right you want to get your uric acid levels down.

Dave:

This really is a smoking gun behind almost all of the things that people are looking to reduce through biohacking, the stuff that makes you not live longer. And I'm actually experimenting with taking between 10% and a 25% dose of cildolophile. Basically the, [acias 00:55:53] in order to enhance nitric oxide activity. After all the studies on Alzheimer's disease and whatnot. The reason being that when I take the normal things that people say should work like beat root, it tends to go down the inducible nospathway, which creates peroxide nitrate, which is highly inflammatory-

David:

Well said. Absolutely.

Dave:

If beats make you feel like, it's okay, don't eat them not to mention the other oxalic acid problem, which leads me to my next question. Oxalic acid versus uric acid and gout. Talk to me about what you know,

David:

Well, gout is not just a disease caused by high uric acid levels. There are plenty of people walking around with uric acid levels of 10 or 11. I spoke to somebody just yesterday, had a uric acid level that varies between 10 and 11. He does not have gout, but oxalic acid and uric acid are far more relevant as it relates to kidney stones. Another issue that is seen as a consequence of having well in conjunction with having genetic predisposition, certain snipps, as well as elevated uric acid and oxalic acid as well.

There's certainly a lot of literature indicating that elevated oxalic acid can have far more wide reaching effects within the body in terms of inflammation. One thing that's commonly talked about is it relates to oxalic acid is something called vulvodinia which is basically vaginal pain sometimes to the extent that intercourse is impossible.

So a low accolate diet might be helpful for that. But, I think it's important even as relate back to gout, there are other factors that are involved like hydration, especially as it relates to kidney stones. I want to get back just a moment to the Viagra question or commentary or discussion as it were. And that is, there is a list of pharmaceuticals that are associated with pretty significant elevation of the uric acid. And unfortunately, Viagra sildenafil is on that list.

Dave:

Interesting [crosstalk 00:58:01].

David:

As you tinker with things and watch your uric acid level. That might be one of the variables you should think of. And let's just for the fun of a talk about a few others. A couple of drugs that are used to treat high blood pressure, like the beta blockers and the water pills the diuretics are associated with, or are shown to raise uric acid levels.

So even though you're treating your high blood pressure, you may be raising uric acid that may raise your blood pressure further. I wonder who might know that? I'm going to leave it at that. Aspirin, testosterone and I think one of the biggest players is a group of drugs that are called proton pump inhibiting drugs. These are the Nepresol type over the counter and prescription drugs, acid PPI, acid blocking drugs that Larry the cable guy would have everyone believe they need to take. And these are drugs taken by 15 million Americans and are associated with at least a twofold increased risk of Alzheimer's and stroke.

So having said that, one of the things to consider is that these drugs increase uric acid levels. So just, we obviously have a list of all the drugs in... Theophylline is another one in the book for people to look at. One of the thing I will mention is xylitol, a sugar alcohol that's often found and sorbitol would be one to avoid as well in terms of choosing an artificial sweetener. If that's something somebody feels like he or she has to do.

Dave:

Let's talk more about xylitol because I've been a general fan of it because of the benefits in nasal cleaning from products like Clear the reduction of cavities and even increases in bone density in women from xylitol without negative impacts on gout bacteria for most people, once you get used to it. But you've got some new evidence about what xylitol does for uric acid levels. Tell me about that.

David:

So again, it is clearly associated of all of those sugar alcohols with increased gout... Sorry, increased uric acid levels. So, again, I'm not dead set against it as I'm not dead set against eating liver or kidneys, whatever it may be, but it's something, we've put out a lot of information. And going back to the top five, the top three are fructose. So, but having said that, it really depends on now for everyone watching, what is your uric acid level?

And I will say that for most people, determining your uric acid might be as simple as picking up your phone and calling your doctor because people who get annual blood work again, it's frequently included. And unfortunately, what might happen is you call your doctor say, "Hey, I know I had blood work four months ago, what was my uric acid?"

And she will get back to you that, it was normal. Please remember that that's not a good enough answer for any of you for two reasons. Number one, who wants to be normal these days? We want to be optimal. And number two, the so-called normal levels of uric acid are derived from data that deals with gout, meaning seven or above seven milligrams per deciliter, or above is certainly associated with increased risk of gout.

But it's the level in your blood above which this uric acid will start to crystallize. And understand as a parenthetic here that these crystals are observed in your heart arteries and your prostate, not just

in the joint of your big toe. So this is something that's going on within your body. But again, that magic number of seven is not ideal.

We want to keep our uric acid levels at 5.5 or lower because it's at 5.5 that the more than 400 references that we reviewed to write this book, which are at the most of them in the back of the book, it's above 5.5, that we start to see a pretty steep, increased risk for the things that we're worried about the metabolic derangements that are so fundamental for us to reign in, as it relates to living a long and healthy life and prosper.

Dave:

This is a phenomenal body of knowledge that you shared here. And part of your book Drop Acid is something called the LUV L-U-V Lower Uric Values diet, which I wanted to run a through a couple things with you there. Mostly plant based foods, but you know that grass fed meat has all sorts of benefits. We've talked about this other times.

David:

That's why it's included.

Dave:

It's included. So when you eat meat, it's grass fed and how much protein per day are we talking about?

David:

Well, it varies of course, on a person's body mass to start a off with and their activity, are they weight training, et cetera. But if you're going to be eating meat, I would say six to eight ounces would be plenty.

Dave:

Six to eight ounces a day.

David:

Yep.

Dave:

Okay. Got it.

David:

And that would be the size of maybe a deck of cards or perhaps a little bit more. So do I eat meat? You bet. Do I-

Dave:

I've seen you do it.

David:

You know you've seen me do it. I've eaten your pigs and enjoyed every bite. But, I like the notion of at least one meal a day being entirely plant based. And the main reason is not to stay away from meat for

me, it's to make sure I'm getting a enough fiber, make sure I'm getting enough of all the great things the bioflavonoids the vitamins and minerals that organic vegetables are giving me.

And so it's not a question of steering away from me meat, especially in recent years, it's just steering myself towards eating more and more vegetables, because they're so important for just in and of themselves, but also how they're nurturing and changing the expression of our gut bacteria, for example.

Dave:

No, I completely agree with your perspective there. My typical breakfast is coffee with [crosstalk 01:04:19]. Well, it's actually, it's my new coffee that's coming out here. I'm experimenting in another few weeks after we record this, I should be launching my brand new, different coffee from what I've done in the past. But there'll be some coffee, there'll be some prebiotic fiber.

So I'm getting tons more fiber than most people get just in my breakfast and some fat, MCTs, and butter and whatnot. And you could call that a meal. It's not raising my insulin or my blood sugar at all. And because there's no protein, it's not raising mTOR. I imagine it's lowering if anything, my uric acid, because it's got coffee and nothing that raises it. And so that's very much an alignment with the LUV diet, I think. Right?

David:

Yeah. I would say, and throughout the LUV diet you made 40 recipes in the book. We feature some of our hero ingredients. For example, I mentioned earlier, cherries, red onions, for example, Lees made a almond cherry loaf yesterday that was phenomenal. And so now we're eating cherries mixed with almond flour. It was really quite wonderful that recipes in the book, one of my favorites as well.

Dave:

Okay. That sounds amazing. And the one area where we probably differ a little bit, in fact, I'm going to support a 100%... Not eating organ meats if you are above seven, right? But the benefits of organ meats are so high for minerals and for unusual forms of B vitamins that are not on the standard list and all these other things, it feels like an ounce of liver for someone with levels around 5.5, who doesn't eat a lot of fructose who doesn't drink a lot of alcohol, probably the benefits outweigh the risks. But if your job is to lower you should quit it.

David:

Completely, we've not found a place yet that we disagree because I would agree with that. And again, it's a question of what does each individual's uric to tolerate in terms of where they are. And I would say that in most people, if that's their choice that they're going to get away with it. Again, the average uric acid level was 3.5 in the 1920s. That was before the development of the technology from the University Of Oklahoma, Dr. Richard Marshall in 1958 for making high fructose corn syrup.

That's was the nail in the coffin right there. So, I think that you and I would definitely still be on the same page that if people want to eat a venison, organ meats, anchovies, sardines, muscles, scallops, that they're going to get away with it. And I think that you just, again, have to see where you are and how these things are treating you, how the offsets are working. What are the offsets things like quercetin, things like luteolin very important.

Dave:

I have here the, assure meter that you get gave me. I don't know how this lancet works, but you're supposed to test in the morning when you first wake up, right?

David:

Are we going live with your measure?

Dave:

Yeah. I'm going to prick my finger. I have not tried this yet. I've been saving it for the show. Of course, I don't know how this lancet thing works, so I got to figure it out.

David:

What I do is I stick it right under my thumbnail. I squeeze my thumb and just drive it in under my thumbnail.

Dave:

How do you cork it though?

Pardon me?

David:

How do you cork this thing? I don't know this kind of lancet.

Dave:

I don't use the automatic thing. I just stick the lancet into my-

David:

I'll do that. So guys, you've never done this before. This is a little lancet you pull the-

That's the one I use, pull it off and stick it under your thumbnail all the way in.

Dave:

Under your thumbnail. I just do it on the edge.

David:

Not under, but at the level, the thumbnail into the meat of your thumb, I'm telling you that's the best place for me.

Dave:

All right. I'm going to get my test strip ready before I stick myself. And yeah, I should wipe myself with alcohol, but I'm going to live dangerously. What do you think? Am I going to die?

David:

Were watching Dave Asprey on The Edge?

Dave:

All right. Now I'm opening up a test strip here. Very poorly opening it by the way. There we go. And with test strips, you want to touch the end that goes in the meter. So I think that [crosstalk 01:08:23].

David:

That's right. And a little notchy thing goes up.

Dave:

Okay, so now I'm going to stick my finger here.

David:

No. Put the test strip in the machine first.

Dave:

I put in the machine first that's interesting. It's different than the other ones. All right. So it's in the machine. Machine's beeping and doing stuff.

David:

Good.

Dave:

And it's giving me a code. So I'm going to stick my finger here. There, I'm going to see it's all the way in. I'm going to pull it out and look there's blood. Is it going that little notch on the side or down here. I haven't used-

David:

It's on the side of the test strip.

Dave:

Right there. It's beeping. How long does it take?

David:

10 seconds.

Dave:

All right. It's beeping. Meanwhile, I'm going to increase my heme levels. I sucked on my finger. Was that sanitary? Am I going to die?

David:

No, I think not. Let the dog lick it.

Dave:

I'll have medical people from the Upgrade. Collective are like, oh my God. They were supposed to have a bandaid on there down to one countdown. So I had a bunch of protein this morning, some coffee, 9.4.

That is not good. So is that because I'm testing in the middle of the day. Do I need to do this? When I wake up to get a real reading?

David:

Yeah. I would test first thing in the morning like you would do blood sugar. That's a high measurement, but you'll email me tomorrow and let me know what you are first thing in the morning.

Dave:

Okay. Good deal.

David:

If you fast, it's going to go up a bit. If you're deeply keto, it's going to go up. Keep that in mind. Those are good things to do. Keto's good, fasting is good. You will net an improvement on uric acid in the longer run, but just be aware that if you're fasting, it's going to be up a little bit. Or if you're into keto, it's going to be up a little bit.

Dave:

I'm definitely in ketosis and I'm fasting right now. So that could be part of it, but we'll see what happens and-

David:

So let's see what you are tomorrow morning and then you'll text me or email on me. We'll take it from there. That's [crosstalk 01:10:24].

Dave:

And what does baking soda or the potassium equivalent of that? What does that do for uric acid levels? If anything,

David:

It should have no effect. I mean, one thing is that you can change your uric acid excretion based upon certain inputs. We know that coffee will do it, but it's not the caffeine. For example, it's probably the polyphenols bioflavonoids and perhaps the caffeic acid uniquely, but generally things that may cause you to [di-resse 01:11:03] or lose a lot of fluid might actually net an increase of your uric acid.

Dave:

Got it. So my experiment with low dose Oxalis for nitric oxide could be contributing, but I don't eat enough fructose to do anything to this. And I don't drink alcohol and I take about an ounce of liver a day. So that's unlikely to crank my number up that much. It's probably pharmaceutical. I had to take luteolin and quercetin most days as well. Interesting.

David:

Yeah. So you have a lot of variables here.

Dave:

[inaudible 01:11:37] tomorrow morning and find out.

David:

Yeah. Average in America is about 6.0 women a little bit lower. But I want to make sure that we get your let's-

Dave:

It's totally fine in the morning.

David:

All the things you do for yourself, we're going to get your uric acid level down.

Dave:

We'll go to proper test first to see if it's really elevated or if it's something that's just throughout the day. How long does it take? Let's say someone wants to drop it by point. Can they do that in a day? Is it in two weeks? Is it a month?

David:

It can happen within a couple of days. Yep. I mean, quoted one study where just who wouldn't take quercetin anyway, but that was an 8% drop in just two weeks by just doing that. That was the only variable was adding in the quercetin.

Dave:

Okay. Got it.

David:

No dietary change whatsoever.

Dave:

And what's why having a meter is a good thing. And by the way, you and I don't have any relationship with the meter company, right? We're just talking about a cheap way to measure it.

David:

Yeah. On my website, hopefully I will have a discount for people who buy that meter. But I called these people and said, "Hey, I'm going to talk about your meter in my book and on public television. So you better put your seat belts on." So they're aware of all this informa...

Because this is a uric acid meter that was only available for people or bought for people who they needed to know it because of gout. And now that we know about the metabolic issues and I will tell you, there are various uric acid meters that you can find on Amazon. That's the only one I've tried, but I would suspect the others are probably worthwhile as well.

Dave:

They're all FDA approved for whatever that's worth.

David:

I don't know that they are.

Dave:

Really?

David:

I know this one is, this one does have FDA approval. I haven't really investigated the other ones.

Dave:

They would be taken off the market very quickly by the FDA if they weren't approved. Because there's a trade protection law on that.

David:

I hear you-

Dave:

Let's verify.

David:

But I'd love to see it in writing.

Dave:

I agree. I like your physician's level of caution versus the biohackers level of it's probably good enough.

David:

Abandon.

Dave:

All right. Final question for you, David, that has nothing to do with uric acid. I don't think. Okay. You've been working on really powerful books, ads, just changing the way we think about these things for much longer than I have, but I know you personally and you still have this, I'm going to call it childlike curiosity.

Like you get excited by stuff. You're curious about it. You go, "Look at this. And then you go figure it out." Let me put it this way. What do you do to maintain that level of interest and curiosity and just mental youthfulness that you have? Because I see it every time I talk to you.

David:

I don't know that I do anything to maintain it. Except that I cater to it. I just I'm interested in how things work, how the human body works, metabolism works. What are the underlying causes of armies? That interest comes from being a physician and I've always wanted just to unravel things and I thought your question was going to be what's next. And that's always a tough one, but I will say that I heard a podcast a couple of years ago when I was jogging about uric acid metabolism that lit me up. That was it because it really filled a lot of empty spaces in my understanding of metabolism.

And I think the biggest part part for me was I have been fascinated my entire life since being a teenager with the fact that we have this ancient physiology that we have this hunter gather or even before physiology and it's mismatched to our current environment and when I look at things through that lens, it's so fascinating and revealing that because we always pigeonhole insulin resistance bad, excess body weight bad, hypertension bad, but all of that is contextual.

Isn't it? It's in the context of our modern world. Those were powerful survival tools that we had as humans until yesterday. So that is, I think very exciting, but I think, I've always been interested in how things work. It's why I live on a boat for four months, because things are inevitably going to break and I'm going to have to fix them. And I like that most of the time.

Dave:

It's that desire to know how things work. We definitely share that. I was pretty sure that you were going to say you kept your enthusiasm because you dropped acid, but you didn't.

David:

I didn't deny it either though.

Dave:

Fair point. And I'm not going to ask because you probably wouldn't be able to answer, but I do appreciate your work in the world. Dr. Perlmutter, thank you for your new book Drop Acid. You are bringing some really serious, important knowledge about core metabolism with a cheap and easy to follow biomarker and some clear recommendations don't eat fructose. There you go. Thank you. I'll talk to you soon. If you like today's episode, you know what to do. Go to dr.perlmutter.com and check out the new book Drop Acid.

If you decide to read the book, you are a bad person if you don't leave a review for him or any other author, just like you'd tip a barista, it's the same thing. You have to do that. And if you thought this was a fun interview, imagine if you were here in the Upgrade Collective sitting here with a bunch of other people on video, looking at me, hearing this live, asking questions, influencing what I say, what I do.

You can do that along with getting a class on every book I've written along with weekly calls with me and my coaching team. So you can really be in a community of people who care about you. You can go to either daveasprey.com or go to Our Upgrade Collective and sign up to be part of my mentorship group. It's a ton of fun.

Literally a third of the questions that I just asked Dr. Perlmutter came from the Upgrade Collective, including that joke about dropping acid at the end. That was Brandon. Thanks, Brandon. See you all soon.