

Podcast: Health Goals for the New Year

David Roberts:

Hey, everybody, it's David Roberts and you are listening to the Mara Labs Podcast. Today, we have Dr. John Gildea here and we will be discussing health considerations for the New Year. It's pretty broad, but it purposefully so. And so as many of you know, we are currently as we're recording this in the midst of our ProLon Fasting Mimicking Diet that mimics the fast and the fasting benefits and specifically the stem cell benefits are the ones that I'm most excited about. John, how's it going? And just share from your perspective, your thoughts, let's start off with just discussing the fast and specifically the ProLon.

John Gildea:

Yeah, I was struck this time as I'm doing it how neat and tidy it is, the packaging and the messaging. Because the last couple times I've done my own ad hoc versions of it. It's so nice to not have to think about anything. It's super spelled out. Really impressive packaging and messaging. I was really struck by that. So far, I think things have gone really well for me. My one issue was that we're snowed in on my first day. So then on the first day of fasting, we had about three hours of shoveling our driveway, which I think may have pressed me into ketosis a little faster than anticipated.

David Roberts:

Indeed.

John Gildea:

I normally don't feel really hungry at the beginning of these fast, but I for sure did this time.

David Roberts:

Well, three hours of exercise in the cold will do that.

John Gildea:

Yeah. That made it a little tough. But yeah, I was super pleasantly surprised by how this is a new version of ProLon too there's new items, tastier. I think it's true. It's very good.

David Roberts:

Yeah. For those listening, we have done the traditional ProLon soups, which are fine. But I do it quarterly and they get old. So this time they're new and improved flavors, which is good. So going back to ketosis, are you measuring your blood numbers this time?

John Gildea:

I'm not, but-

David Roberts:

You can tell.

John Gildea:

... I normally don't get into full deep ketosis with my intermittent fasting that I do. And it's pretty striking when you get into actual ketosis that I can tell from my vision, I think my vision gets brighter and when

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you get into deep ketosis, at least for me, that aches and pains of really disseminate, they disappear. And so I normally don't get that till the second or third day. But I'm fully there on the second morning.

David Roberts:

And you mentioned deep ketosis. Can you clarify, there's the light, medium, deep, what those numbers are because you have measured blood glucose before and what that is for you?

John Gildea:

Yeah, for sure. I mean, I have it in my mind what deep ketosis is or not. And maybe a good definition that would be helpful for people in general is sometimes if you're speaking to a physician and you use the word ketosis, the eyebrows that go up because they have that associated with ketoacidosis, which is when your ketones get so high, they are acidic molecules. So you actually throw your blood pH off and you can get very sick. It's a very different set of circumstances in that case because that's most often when you are not producing insulin. So your blood glucose is going up very quickly. You just don't have insulin to get your blood glucose into your cells. So you're really achieving that cell starvation. But with the added unbenefit of messing up your blood pH, I mean, those ketone levels can be up over five to 10 millimolar, which is really high. Deep ketosis from fasting, rarely gets up over two millimolar.

John Gildea:

And so for me, when I've tested just for myself doing intermittent fasting, it rarely gets above one millimolar for me, it's most often lower than that. So I can tell the difference between the typical 0.2 to 0.6 or so when I'm doing intermittent fasting, I can feel it, but it's not profound as opposed to when I'm doing ProLon, it's almost always over one. So I would say 1.5 to two or so it's not going to be as deep as a water fast or doing a much more restricted fast.

David Roberts:

Yeah. And what would your blood glucose numbers be if your ketones are 1.5?

John Gildea:

Yeah. Often they'll be in the 60s for me.

David Roberts:

Yeah. And that would be deep?

John Gildea:

Yeah.

David Roberts:

Yeah.

John Gildea:

For sure.

David Roberts:

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Yeah. And so you notice at that point, so you're adapted, you're using the ketones and there is a benefit with pain.

John Gildea:

Yeah. For sure.

David Roberts:

And brightness, your mental-

John Gildea:

Vision and mental clarity goes along with that vision that seems lighter. I'm sure it's just in the brain side of things, it's not... Your eyes working better or anything like that.

David Roberts:

Yeah. And then how much weight do you typically lose?

John Gildea:

So I lost two and a half pounds on the first day. This time, just a little radical.

David Roberts:

That's a lot. Yeah. Are you hydrating? Is some of that water?

John Gildea:

Oh, I don't know. I've been doing liter per day, which is probably more than I normally drink. I don't tend to drink a lot of water, in general. But I don't specifically have a plan to drink a lot of water.

David Roberts:

Yeah. Yeah. Well, good. So the fasting, I do fasting quarterly. How often do you do the fast? Water fast or ProLon fast?

John Gildea:

I've been trying to do it three times per year. I think the study isn't it four? If you're trying to do it four times per year.

David Roberts:

Yeah. Yeah. You can do it more, but the benefits level out four.

John Gildea:

Yeah. And in the mouse studies, I think one of the most obvious after reading a lot of papers on the fasting dieting is not increase in longevity, but in what's the term use for when it's just your health span is?

David Roberts:

Health span.

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John Gildea:

Health span, health span. And that health span often has to do with lack of cancer. I don't think it's directly said on the product because it's not specifically FDA cleared for cancer, but fasting for sure has this benefit of at least in the mouse studies, they weren't living any long, but they were very healthy right up to when they died. And the one thing that went down by maybe 50% was the general cancer in these mice, that is really super dramatic.

David Roberts:

Yeah. And that made me think when you're talking about that, are you taking any supplements when you fast or when you're doing this version of the ProLon?

John Gildea:

I'm just doing the ProLon. When I do my ad hoc versions of it, I had previously done burberine at the same time because it makes a pretty big difference when you're fasting. I'll usually in my ad hoc versions, I'm taking a sodium potassium magnesium mixture. That I came up with just because I need more salt than most people. It's just this weird phenomenon that I'm studying. So I'm making up the mixture of more salt than most electrolyte drink mixes.

David Roberts:

Yeah. And that's the magnesium citrate. Potassium citrate and then just regular sea salt?

John Gildea:

Yeah. I use real salt just because...

David Roberts:

The real salt brand. Yeah. That's a good one. In fact we have some on table.

John Gildea:

On the table. Yeah. That's good stuff. And has insulin, a daily dose of insulin and not insulin iodine. Sorry.

David Roberts:

Iodine. Yeah. Great. Yeah. And so I have been taking burberine for that reason with the blood glucose and then a broccoli, two burberines at night, two in the morning and then a broccoli in the morning and at night and then two curumines in the morning and night. Is that?

John Gildea:

Yeah. I'm sure that's good. The difficulty with fasting is because you spill so much salt. I think a lot of people don't know that happens, but you spill a lot of salt and if you're not feeling well when you're trying to do fasting often it's because of that.

David Roberts:

It's interesting. One of my good friends gut COVID last time in September when we did the ProLon, he was doing it with us and then he was not replenishing salt. And there is that link we discussed late after

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the fact of low salt increased risk of COVID because of ACE-2, can you briefly just give a blurb about that?

John Gildea:

Yeah. I think the most harm that comes from having low sodium, if you're really underrating sodium, or you're spilling sodium, is that you turn on a lot of these, they're called counterregulatory factors and they're designed for you to reabsorb more sodium. So in that particular case, it's a set of molecules, angiotensin II aldosterone renin that are designed for you to not spill sodium. But those molecules are generally bad guys. They don't do good things. So there is a limit to whether low sodium is good for you. And that's one of them.

John Gildea:

And the whole aspect of sodium also has to do with just kidney health in general. I'm sure this is not common knowledge, but when you have excess sodium, you make dopamine in your kidney. And it's a good thing. It's a very protective of a lot of pathways. So just in the realm of kidney health. So from mouse studies, if you block production of dopamine, just in one cell type in the kidney lifespan of the mouse goes is in half. And so if you're opposite of dopamine, dopamine is natriuretic, angiotensin is anti-natriuretic. So if you're undereating sodium you're not producing as much dopamine. So there's a balance there. And from all the benefits are there for fasting, one of the difficulties is that if your blood glucose is very low, you don't want to have very low sodium.

David Roberts:

No.

John Gildea:

There's a number of mouse studies that show that that causes insulin resistance actually, which is the opposite of what you want to do. You definitely want to make sure you're eating enough sodium.

David Roberts:

What's a ballpark as far as potassium, magnesium and sodium chloride?

John Gildea:

So RDA or potassium-

David Roberts:

Recommended potassium daily allowance.

John Gildea:

Yeah, is 4.7 grams is really high. I think it's for magnesium is 800 and that's a reason why you can't have a supplement with more than 400, I believe magnesium, but there's a lot of magnesium and potassium in a lot of foods. Especially leafy greens and vegetables that you're supposed to be eating. So you don't want to take the RDA because it's in food. You don't want to exceed that. And then for sodium depends what you're talking about. Just sodium or in most cases it's sodium chloride. So for sodium, it's 3.5 grams. That would be the equivalent of that potassium. But 3.5 grams of sodium is about 8.5 grams of sodium chloride. So that's close to two teaspoons.

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David Roberts:

Wow. So 8.5 sodium chloride and then potassium is...

John Gildea:

4.7 grams.

David Roberts:

Grams and then magnesium...

John Gildea:

800.

David Roberts:

800 milligrams. Right? That's a lot. And I haven't looked any idea of how much of those are in the ProLon.

John Gildea:

I don't, they're definitely under that for sure.

David Roberts:

Yeah, yeah, yeah.

John Gildea:

But what's interesting is I forget for those, for potassium, magnesium, calcium, iodine a lot of the minerals, it's a very, very small percent of the population gets RDA.

David Roberts:

Yeah. Yeah. One of the things I do primarily for the taste, even for the taste and the sodium chloride is I'll just put a pinch or a decent amount of salt in those soups, to supplement and it actually improves the taste. Not that they're super bad, but they could use some help and taste wise also throwing some hot sauce. Well that's good. Thank you, John. And then moving from the fasting to just other goals, I know we were talking about goals in general for health in the New Year. We started off our New Year with fast, but there are a lot of broad sweeping goals. There's sleep goals, exercise, just different things that we could want to do health wise. And we're talking on a little bit before the show, some of things you're thinking about, I'll share some of the things I'm thinking about. Of course we don't have Martin here because of our snow situation, but he could be the one that talks about exercise, but we could probably give it a go.

John Gildea:

Yeah. The big one that's on my mind is stress. That seems to be prevalent to so many people that I talk to as well as my own family is with the pandemic. One of the prevailing things that comes from that is stress and fear. And both of those things have adverse effects on your health in myriad ways. We were just talking about sodium. If you're low in sodium, I didn't mention it, but you're also, your epinephrine goes up. So your low sodium, your epinephrine is higher. Your heart rate is higher and then sleep is

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more difficult. So low sodium would affect sleep. But similarly what does distress hormone cortisol do? So cortisol or stress hormone is called a glucocorticoid. So it's to design to raise your blood glucose levels.

John Gildea:

As you can imagine that you having that chronically on all the time would it's deficit, have a negative impact on your health. And I've seen this many times in people that I do nutritional counseling with in cancer if you don't have a good handle on stress, you're going to always have a difficult time managing blood glucose levels, which is one of the things that you want to try to control and in a nutrition scenario. So cortisol's going to raise blood glucose levels by are going to stimulate insulin. That's generally not a good thing. And so you always, I don't know if this is common knowledge or not, but when you're thinking about these big homeostatic mechanisms, another one that fits in is fertility or reproduction. So in times of stress, you're not going to want to reproduce because there's tons of stress around. And the way that that works is a lot of times stress directly affects testosterone and estrogen levels-

David Roberts:

Lower.

John Gildea:

Yeah. Block the effects of these. And the precursor molecule for both of those is DHEA. And that can be a supplement when people can be low in that, but it's not helpful to take that to boost testosterone estrogen unless you're handling cortisol, you're handling stress hormones. So the connection again, back to pandemic is that ACE-2 again, is regulated by testosterone and estrogen. And it's likely the connection with age is that throughout your lifespan, your ACE-2 receptor goes from very high to lower, to almost absent when you're very, very old. And part of that is because of the testosterone regulation of ACE-2 and estrogen regulation of ACE-2. So lack of stress is also a big component of your immunity. Cortisol also turns off your immune system.

David Roberts:

Oh, wow.

John Gildea:

Yeah, so immune suppressor. So without going too deep into how bad it is for you, you want to say little something about what are things that you can do about it? And it's interesting. I think most people know what stress is and how to manage it is to try and be in the present to not think too much in the future or dwell too much in the past to be in the present. And staying busy is a big thing, doing something that you like to do. Most people realize that if you love paintings or something, if you look at a beautiful painting, you're in the moment, you're in that scenario and there's no fear, there's no dread or worry about things that are going to be happening or in the past.

John Gildea:

And I also think that that's a big component of what exercise does for a lot of people, forces you to be in the present for particular amount of time. And that's really good for you. Supplement wise, my favorite is ashwagandha for stress. I also like saffron, but yeah, these are pretty well studied molecules. They're known as adaptogens, but I think some of the interesting studies of ashwagandha in aged men because

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their testosterone is going down is that I know taking ashwagandha can raise actual circulating testosterone levels, not a very well known thing, but an association with that is also the ability to put on muscle mass.

David Roberts:

Oh, well, that's nice that you mentioned that because that's one of my goals that you drop some body fat, increase some muscle mass.

John Gildea:

Yeah. It's such an important thing because a lot of people have those things separated from each other, but that muscle mass as opposing insulin resistance is very well known so that sarcopenia is the loss of muscle with age. And the good part about maintaining muscle mass is that it's a sink, it's a glucose sink. And that's a big component of why lifting weights is we really good for you, longevity in general is that muscle mass is really helpful for counteracting insulin resistance, which is obviously a huge problem in big percent of our population now.

David Roberts:

And so supplement wise, do you have a brand that you use as far as ashwagandha and then also touch some on the saffron?

John Gildea:

Yeah, the most studied version of ashwagandha is called KSM-66. It's a extract that's standardized, it's 5% with anilides. So with anilides is one of the components that is necessary, but there are other ingredients in ashwagandha that are good for you. And there are what are soluble components of ashwagandha. And I think the best studied effect of that other fraction is for sleep at the molecule is not in my tongue right now, but it's actually the active ingredient in ashwagandha that's shown to increase the Delta wave sleep or deep sleep, which is missing a lot of people that have insomnia.

David Roberts:

And what are the saffron? I'm sure people have not maybe even heard of supplementing with saffron. It's a spice. And so, yeah. Touch something about what you're doing with that.

John Gildea:

That's another extract that has a number of different molecules in it. It's the stamen from a flower, it's known as the most expensive spice in the world. It doesn't take a lot of it to have a therapeutic effect, but the components of it, sulfonyl and transcortin, they have their own set of benefits. Transcortin was I think originally studied at UVA.

David Roberts:

Oh, wow.

John Gildea:

As a compound that increases oxygen carrying capacity of blood, which seems like a pretty big deal. And then sulfonyl is the component that is the adaptogen. That would be with anilides in the ashwagandha, but saffron has been known to be effective for depression as well. So that connection between stress

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and fear and depression and this insulin resistance is pretty well known. So they're in the middle of a bunch of important processes and yeah, the combination of ashwagandha and saffron is really good.

David Roberts:

Do you take a specific supplement? Do you buy the stamen and take that?

John Gildea:

I've done both. If you get the actual saffron, the way that we found for it to work the best is just in a tea. So we'll often just take two or three of those strands, the stamens, which is probably equivalent to 300 milligrams or so. And we put just a tiny bit of alcohol in it and crush it like a mortar and pestle and you can see that all of the red would go into solution and then do a warm tea from it just hot water. So it's really relaxing late night tea. There are a number of brands of it, but just getting the standardized dose is important. I don't think I know the name of standardized dose, but there are brands that have been studied the most. So maybe I can get back with you with a good extract, usually a good extract from these things have a name.

David Roberts:

Yeah. And we'll have those in the show notes. And so exercise wise that we've touched about on sleep, muscle. Well, have you noticed an improvement in your sleep during ashwagandha and saffron?

John Gildea:

Yes.

David Roberts:

Okay.

John Gildea:

Definitely.

David Roberts:

And...

John Gildea:

I think it's mostly pain. So in my case I had a vaccine injury and a lot of my old injuries flared up. Just because I was athlete in college and in high school and had a number of injuries and that affects my sleep a lot just from the pain from that. So both of those together helped a lot with my pain and sleep, which has gone away enough. So I'm back at the gym again, which is really helpful and that's like a snowball.

David Roberts:

Oh yeah.

John Gildea:

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If you can lift weights, then that exercise is really helpful for sleep as well. And of course I had my daughter home, she's a exercise fiend. So she was, I guess recently certified for HIT training.

David Roberts:

Oh wow.

John Gildea:

High-intensity interval training. And she was using me as a guinea pig just to see how fast my heart rate recovery was. Unfortunately it's not great.

David Roberts:

Yeah. Wow. What were you getting your heart rate up to?

John Gildea:

160.

David Roberts:

Yeah.

John Gildea:

And then seeing how fast it returns and a minute, I wasn't in the lowest category according to her, but my age was showing. My daughter who exercises probably six to eight hours a day, her heart rate recovery was astonishing.

David Roberts:

Yeah. Well, I can imagine. Wow. And so, it sounds like you're going to be lifting some?

John Gildea:

Yeah.

David Roberts:

Weights and then any cardio?

John Gildea:

So this HIT training is-

David Roberts:

You're going to keep up with that once she goes back to school?

John Gildea:

Yeah, for sure. I mean, she made me promise, but it's not that difficult. It's pretty fast too. So we started off with three, 32nd equivalents of a sprint, excuse me, in a session that lasts about 10 to 12 minutes.

David Roberts:

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Yeah. So it's-

John Gildea:

It's pretty fast.

David Roberts:

High intensity, low volume. Yeah. Great. And then let's touch base, let's talk some about one of the things I have little belly fat I'm trying to get rid of. And also I have thought some about doing Wim Hof, we've gone in and out, we've cycled Wim Hof, discussing Wim Hof, which is a breathing method where Wim Hof is the Iceman and he's been on Everest with shorts, that type of thing. And so your ability to do ice baths is elevated. While we're talking about it. Can you just share a bit about... Does the ice bath help with the production of, is it brown fat, which is the good fat. And do you know the mechanism there? Does the regular fat get transformed into brown or how's that work?

John Gildea:

Yeah. So the basis just as a quick review of what Wim Hof is where you breathe very deeply and quickly for, is it about a minute or so?

David Roberts:

It is.

John Gildea:

And then you blow out all your air and then hold your breath for as long as you can. And then you do it-

David Roberts:

Comfortably.

John Gildea:

... three times.

David Roberts:

Yeah. I think it's like thirty in and out, however long that takes and then breathe in, so that it's comfortable. You hold it in and then you breathe it out same thing. So that it's comfortable.

John Gildea:

Yeah. So that act really interestingly when I was reading about that, it violated a lot of the things that I've said in the past is that you normally can't change your pH very much. And there's a lot of people always talking about pH. But this actually has been shown to change the P pH is at least especially of the interstitial fluid surrounding your cells. So the pH goes up and interestingly, that is part of the mechanism of how you get a number of pathways at activated. And I think the issue is, I mean, your interstitial fluid pH is high like that, your oxygen on your hemoglobin won't transfer to your cells. And so you're inducing hypoxia in the short-term, but that hypoxic, your response to hypoxia is to induce a bunch of factors that are really interesting. And the biggest one that he's studied a lot is norepinephrine and that's very good for health in general.

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John Gildea:

But I think the most important aspect of this that ties into his ice water bath thing is that there's a set of receptors called TRPV or TRPV4, and they're classically known as the capsaicin receptors. And so there's a number of different ones and classes, but basically if they're monomers in the cell membrane, they tend to not signal pain. And so if you're ISF fluid is acidic, they tend to dimerize. And they're also a temperature sensitive, temperature and also this auto regulation. So basically what it's doing is resetting your TRPV receptors back to monomers. And so your pain tolerance goes up dramatically. And so normally when you jump into ice water, it hurts-

David Roberts:

It burns.

John Gildea:

It really feels like pain, actual pain. Especially if you get to the threshold you're trying to get to, which is 17 degrees Celsius. And the reason you want to get to that degree is that's where you get this uncoupling protein induction. So UCP 1, uncoupling protein 1. And so that is the mechanism by which you brown fat. So there are fats cells that are in a, I think it's in a kind of like a strap that goes over your shoulder and down your back, if I'm remembering this correctly from a while ago. But that fat can be converted to brown fat. So the browning of fat is where this uncoupling protein is induced, and that fat becomes a sink kind of like your muscles instead of storing energy as fat, they are burning energy as heat. And so you have those two benefits is that you're using energy all the time. And that's the lumberjack effect if you ever knew somebody that worked outdoors in the winter, and you realize that they are capable of eating 16 flapjacks every morning and staying thin, that's kind of the lumberjack effect.

David Roberts:

It's also the swimmer effect.

John Gildea:

Yeah.

David Roberts:

Staying in cold water all the time.

John Gildea:

Yeah. Notorious swimmers, being able to eat huge amounts of food and not gain weight. But yeah, that's the effect is this uncoupling protein and browning of fat. And there's a number of supplements that do that too. I think our probably the most famous one is ursolic acid, just a known to brown fat.

David Roberts:

So the fat on my belly is not going to brown.

John Gildea:

I'm not sure if all the-

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David Roberts:

The acid is going to get rid of it.

John Gildea:

That, yeah. Just shrink. You don't change a number. It's just whether it's filled with triglycerides, you want it to get emptied. When you lower your blood glucose and have drained your liver of glycogen from fasting, you're mostly running off of your own fat stores. So, one of the best things you can do is fast for shrinking your fat.

David Roberts:

Yeah.

John Gildea:

And the external fat that's on the outside it's important to have that low, but it's the visceral fat that's inside among your organs that-

David Roberts:

Like your liver.

John Gildea:

Yeah. They secrete cytokines and how have inflammatory components to it. So I think that's a component when you're fasting is those cells are shrinking. So they're preoccupied with draining triglycerides, that whole metabolism, and they're not producing as many cytokines as I think one of the factors that's really amazing from fasting is you decrease the amount of cytokines that are circulating, which is probably that effect that most people that are maybe over 50 or so feel when they're fasting, is that great feeling like you're 30 again, with that lack of muscle pain, joint pain that you just have gotten used to, and didn't know it was always there.

David Roberts:

Yeah. And so with the 17 degree water and the browning of fat, how often it just doesn't happen if you do it once. What would be a reasonable number of times to do that? To get to know that you've arrived?

John Gildea:

I don't think I know that answer of how many times, I know when you go for the retreat for Wim Hof, it's like 10 days until you have the ability to regulate. Some of the tests that they've done is showing that they can inject people with lipA polysaccharide and not get a fever.

David Roberts:

Toxin essentially.

John Gildea:

But I think the whole aspect of doing that system is that you're tolerant. So it's not just cold tolerance because he also went to the Sahara and hiked huge distance in the Sahara Desert without water. So he's

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also heat tolerant. So it's just tolerance in general, I think. But yeah, that whole aspect of hormesis in general, I think is going to be a big topic that everyone's going to hear about terms of health. So a sauna where you actually raise your body temperature up over 101 or so core temperature purposefully, medically induced hyperthermia. It's going to be a big deal. And I think same with cold. There's going to be a very strong hormetic response from that. And I think everyone thought that sauna, you had to do every day for a long period of time, but there's a number of studies now where if you do it medically and keep it in that range for an hour, which is really difficult to do, you can achieve it in one session.

David Roberts:

Oh, wow. Yeah.

John Gildea:

So that may be the same with cold, is that when people are doing it just self inflicted, they might not be doing it adequately really getting it into under 17 degrees to get the full uncoupling protein induction. And so maybe in the future, there'll be a method shown where you get the absolute peak of that. It may actually have been already done, but I'm not aware of the research.

David Roberts:

Great. Well, we've shared quite a few ideas about goals we have and just things to consider for the New Year. And so thank you for joining us, John, and thank you for joining and listening to those on. And so we will be back next week and thanks so much.

John Gildea:

All right, bye.