Introduction and Doctor Fungu2019s Background

Everyone and welcome to this new episode of the Longevity Summit with Doctor Talks. This is your co-host, Doctor Joseph Antoun, I'm not sure he needs an introduction.

A very familiar face in the world of fasting and now getting into the world of longevity. The doctor Fung following this is going to be a special episode with you as usual.

Thank you for your time today and I really look forward for this session with you. Thank you. It's great to be here. Although you have millions of followers, maybe very few people around the world might not have or around the world of longevity, might not know you that well.

So I want to make sure that we spend a few minutes on introducing yourself to anyone listening to us today, if you may do so. Sure. So I'm a nephrologist, that's a kidney specialist, and I'm mostly clinical.

And a few years ago I started to get very interested in the question of diabetic kidney disease. And it occurred to me that really to prevent that from happening, you really had to reverse the type two diabetes.

At the time, everybody was saying it's quite difficult, it's impossible. It's a chronic, progressive disease. But at the same time, it was clearly not true because people who lost weight often reverse their disease.

So I got very, very interested in the question of weight loss. And clearly the standard approach, which is to count your calories didn't work. Everybody had tried it and it didn't work.

And it was silly to keep saying that this is what works. This is what works, when clearly it was what didn't work. And every single trial that's been done really in the history of nutritional science, do just looking at how the restriction has failed, like nobody's able to maintain that weight loss long term.

So I started thinking about other ways to think about weight loss. And, you know, one of the important factors that really talked about so much is the hormonal changes that happen when you change your diet, because there are, you know, there are very different things that happen in the body when you eat, say, a piece of, you know, brownie or cookie versus when you salmon or eggs, for example.

So even though they're the same number of calories, the hormones that the body responds with are completely different. And to pretend that's irrelevant for human physiology just flies in the face of common sense.

So that's where I start to think about fasting, because fasting is very, you know, as a way to really bring down the hormone insulin, which is one of the key hormones when you're talking about body weight.

We know this because people who have a lot of insulin or take insulin, high doses gain weight, and people who have don't have enough insulin lose weight.

So clearly it's a very, very important hormone for weight loss. And that's where I start to talk about it and think about it. And the more I read about fasting, the more beneficial it really seems.

And that's why I started to blog about it. And I wrote about a couple of books about it saying like, look, let's look at the science, let's look at the data.

And a lot of people started to follow it and got tremendous results. And that's really one of the reasons why I'm here, is just because I really questioned the whole science of why.

At the time, people said fasting was very bad for you, but in essence is actually very, very good for you for a number of reasons. Thank you. And I think, you know, you were one of the early voices with Doctor Walter Longo and a new trend, general to start talking, fasting to the world.

They've been historically multiple waves of doctors who tried to bring fasting to the world in the early 20s, etc., but the science was not there. And it was, you know, kind of a little bit put down.

I think today there's a there's an aggregation of social influencers who have credibility, like yourself and their key opinion leaders that have pushed the the they can have educated people on the value of intermittent fasting.

The science coming from preclinical clinical trials and multiple universes all came together to create this critical mass of trust and information and education that allowed a lot of people to pay attention to this topic and adopted.

Yeah. And I think that really a, you know, where we are today because, you know, social media allows people to sort of share what happens to them so they don't no longer have to, you know, say just listen to their doctor, for example.

Why Fasting Works for Weight Loss and Diabetes

And if the doctor doesn't, you know, no, then the patients don't get the benefits. And really, people are able to find stuff online and, you know, try it for themselves.

So the beauty of the whole, you know, the information age is that it's not curated in that people who find the information are able to act on it, you know?

And what I did was try to put out sort of credible information, keeping to the science of it and how it can help people. I'd like to explore with you to make this the very cost effective interview from a time perspective, an information perspective wanted to ask you, what do you feel are the top 3 or 4 benefits of fasting, and what do you want people to?

If I'm new to fasting, what I'm interested in fasting, what should I know and how should I start? Sure, I think the top 3 or 4 things to sort of benefit is that, first of all, fasting has sort of a huge number of benefits, but it's very simple in its essence.

Right? That is, if you don't eat, your body is going to use the calories that it's stored away. So body stores away calories, food, energy in the form of fat and in the form of sugar.

If you have too much storage sugar, you have type two diabetes. If you have too much stored fat, you have obesity. So all you're doing is you're allowing your body to use what's stored away.

Just like if you went to the Costco and you bought a lot of food and you put it in a fridge, but why do you have to go to the grocery store every single day?

You don't, because you can just go into your stored food, which is your refrigerator, and take it out of it. Right. So the same thing on the body, if you have body fat and you don't eat, your body will take the calories out of your body fat and eat that for energy.

Well, that's very good, because now you're going to get rid of some of the body fat and you didn't need to eat. So the whole idea again is very simple.

You're using your body fat so precisely what it stands for. So there's nothing bad about it. In fact it's very good. So the whole idea is that you can you can get these benefits in terms of, you know, type two diabetes reversal because you're using up the the stored sugar and weight loss, which is you're using up your stored side.

So those are the two main benefits. And you know, if you get people to lose weight there's actually tremendous

health benefits. You know huge. And nobody really denies that.

That's from, you know, heart disease and strokes and cancer and, you know, joint disease and back pain and, you know, the list goes on and on and on for the benefits of being able to lose some weight.

In addition to the weight loss type two diabetes, there's a third sort of very interesting and new thing with fasting, which is a toffee G, which is this idea that when you don't eat, you're going to switch your body into this sort of maintenance and repair mode, and you activate a process called autophagy where your body eats itself.

That's what the name means auto self and eat. You eat yourself. And that sounds really bad. So people thought it was a terrible thing, but in fact, it's actually a very good thing because if you think about how you rejuvenate yourselves, what you ought to do is you've got to get rid of your old cells, then you've got to grow your new ones.

So what fasting does is it reduces all your nutrient sensors, that is insulin, IGF one, mTOR, and at the same time pumps up your growth hormone. So then when you eat again you're trying to rebuild those cells.

So you're getting rid of old cells and you're rebuilding new cells, which is rejuvenation. People who talk about things like, for example, which blocks enter only affect one of those pathways.

It affects mTOR, but it doesn't affect insulin like growth factor, which I think like if one which I think is a huge factor, it doesn't affect insulin and it doesn't increase growth hormone.

So you're getting so much less benefit from doing such something, such as mice. And which is funny because then I see all these people talking about how great rapamycin is and then saying, oh, well, you shouldn't fast, but you should take your optimization.

It's like, well, that doesn't make any sense to me. You're getting so much more benefits in terms of longevity from fasting. Even people like David Sinclair, who's a who's a great, you know, sort of a rock star researcher in longevity.

I mean, he talks about fasting all the time because he realizes some of the benefits. I listened to an interview and he was saying, yeah, he does it all the time.

And, you know, he talks about these other longevity genes that that got turned on something, things like sirtuin and so on. So, so huge benefits. So not just your weight loss or type two diabetes reversal, but now more and more science behind the behind these activation of these longevity promoting genes.

I think this is very important because we build a society and we build medicine. I mean, it's interesting, you and I, two doctors and we're saying you don't have always to listen to your doctor and come to something.

You know, it's we build a society where pill is a solution to everything. And you hinted at their promise. And there's other, you know, metformin and there's the sperm now, I mean, there's a lot of individual ones, right?

The biggest one today, the ones there's a lot of the pill system. What I want to listen is to understand is most of the time works on the receptor, on one receptor, which does a fractional thing and induces side effect when you over skewed one receptor.

And the beauty of fasting is such a not upstream intervention that actually allows the body in a natural way, to cope with it, because our ancestors, for hundreds of thousands of years had to go through periods of fasting and periods of food.

So the body is built to deal with it and is built to deal with it on an upstream intervention. So all these receptors, all the things all the way from microbiome to the epigenetics, are all activated in a synchronized way and a natural way to do a positive defense mechanism, as you are explaining, rather than using a pill here to do that, and then cover the side effect there and get a fractional.

And we've seen it and we've heard it so many times, people saying you can get autophagy with this pill or that bill, I don't want to name them, you know, the only the only product that was tested for in humans is prolonged the five day fasting mimicking diet.

And I've yet to see in a true randomized clinical trial other supplements showing that they can use it. We see it on their websites. We see it on their claims.

We never see it published and showing the the resume nation. So this is an important message that this is one of the natural way to get a lot of the benefits that actually I got to add the metaphor and plus it up and to close all the shut down the receptors.

Any potentially a GLP one if you want to lose weight. On top of that, all these three combines in an artificial chemical way with side effects. Maybe we'll get you the fraction of the benefits of fasting.

Yeah, absolutely. And I think that, you know, there may be other things that we haven't even discovered yet. Right? It's you know, the whole science of it's is sort of is relatively new.

Even amateur is relatively new science, you know, and they're always discovering new things. However, when you're talking about treatments, then you go back to sort of like you want to go to the things that have been tried and tested and really work.

And, you know, fasting has been around for thousands of years. So, you know, there may be more benefits that we simply don't know of yet.

Autophagy, Longevity, and the Limits of Drug Alternatives

But certainly it's it makes sense that if especially in these days where there's a lot of this problems with obesity, there's an epidemic of obesity and epidemic with type two diabetes, those benefits are already huge.

And, you know, the side effects are going to be minimal as long as you do it in any sort of rational way, because people have done it for thousands of years.

So it's like we know how to deal with it. And, you know, the second thing that it amazes me as well is, you know, we have been such a circumvented system that we have to, you know, when we talk to fasting people like, you know, there is that potentially believable as its capital.

But we're saying if you overeat and now you're obese, and then with time and with aging, you become diabetic, guess what's the solution? If you ask me to medicines like pills, which will never how can you go back and go off of that?

You say, if if diabetes and pre-diabetes and obesity are the consequence of aging and overeating, this should be stop eating. The theory is like how? Like if if somebody say if somebody says, hey, every time I, I punch a wall, I have pain in my head.

You tell them, stop punching. Right? And then and then if somebody over eats and gets diabetic, the solution like naturally to slow down your eat and order to stop your eating.

And that now is the is the least believable, you know. And so that we need to justify whereas the entire system of a $600 billion diabetes management and all the medication in the dialysis machines and all of that is not helping any patient go backwards and getting cures, fasting is hitting.

I always call it the tree of diabetes, right? You mentioned the weight loss because that's the insulin resistance. And the weight is the aging factor, autophagy for the diabetic patients.

We thought we talk about autophagy for longevity. But autophagy for diabetic patient is as important because

getting the system a little bit younger to better deal with it, deal with the health condition and muscle protection.

That's probably one of the myths that I know you are very passionate about. People saying, well, I don't want to do fasting, going to lose muscle. I'm going to slow down my metabolic rate.

Can you talk a little bit about that as well? Yeah. So it's interesting because there is a very interesting study from one of the fasting clinics in Germany, the clinic where they put people on a ten day fast.

So that's very long, fast. And the measure muscle mass by bio impedance, which is basically like those scales and shoots an electrical current through your body and measures fat because fat and lean tissue sort of are different in terms of the way the conduct electricity, that's how they calculate the body fat.

The thing is, when you fast, you lose a lot of water as well, and you lose the muscles lose glycogen because glycogen is a storage of energy. So glycogen is like a chain of glucose.

The muscle has its own glycogen. So when you don't eat the muscles are going to use energy is going to use glycogen. So you lose glycogen. So your muscles may actually get smaller.

But that's not loss of muscle tissue. It's loss of muscle which will be restored as soon as you eat. So the thing is that what they did was there's all these studies where say, oh, if you fast, you lose muscle and the numbers are like insane.

Like, I have seen studies where people fast for like five days or something and they'll lose, like, you know, 10 pounds of muscle mass. And it's like, okay, well, that's not really believable because, you know, your muscles get stronger or weaker based on how much you use them, right?

So if you exercise, you use it, you build more muscle. If you don't use your muscles like astronauts or if you're dead down, then you lose your muscle. So use it.

It'll get stronger. Don't use it. It'll go. So even if you use it and don't eat. They were saying that you're going to lose all this muscle mass. But the.

And then when you eat again, what happened was that all that muscle mass miraculously came back. So okay, so when you fasted but kept the same activity, you lost all this muscle when you ate but kept the same activity, you gained all this muscle.

So how do you gain like 10 pounds of muscle without exercising? I'd love to know because I'd love to do it. It doesn't happen that way. You're just gaining and losing this muscle glycogen.

So what the clinic did was that they tested not this bio impedance, but they tested muscle strength. So they actually told them how to do wraps and, you know, grip strength and all this stuff.

And what they showed was that, you know, they looked at two different sets of muscles, the, you know, the skeletal like the axial muscles like that, that lift you up when you're standing and so on.

And also the sort of grip strength and so on. And I think it was a grip strength or something. It actually the strength did not decrease when you're fasting.

In fact, one of the muscle groups and I can't remember exactly which went up by like 30% or something. People were stronger when they were fast. Why? Because probably because of sympathetic tone and some of these other things.

So I don't think they gained muscle, but they were. And the growth pushing the well being. Since when we didn't have food houses a few years ago, the buddy is saying, let me break down fat ketones, let me increase the stress hormone in this, invest into the muscle so that we keep walking and finding the next fruit or vegetable.

Otherwise we're self compromising ourselves. So yeah, and their fasting wants to feed the brain with ketones to stay up and not go, not not faint and wants to increase the tone for the muscle.

So you keep going and find the next fruit and vegetable rather than deplete the musculoskeletal system. Exactly. So that's, you know, to me that makes a lot of sense, but yet you still have all these people out there saying, oh, fasting causes muscle loss.

And it's like, why would your body be so stupid? Like, truly? Like if you store energy calories in as a form of fat, right? That's what the body does. We all know that.

But when you don't eat, your body's going to start burning down your muscle. So you're going to store fat and burn muscle. So in other words, it's like, you know, storing firewood for the winter.

And then when it gets cold, you chop up your sofa and throw it in like you'd be stupid, like, how do we survive as a species if we were just that stupid?

And, you know, the problem is that there's not a lot of critical thinking. Sometimes people just parrot this, you know, there's a lot of bias in the, you know, against fast saying because people, you know, didn't think about it or do it.

So they, they, they go, it's new. So it must be wrong sort of thing. And yeah, it was basically one of those issues where people latched on and said, oh, it must be this, it must be this.

Muscle Preservation and Misconceptions About Fasting

It was just like, you know, for a while they're doing studies on fasting where they'd have somebody fast, you know, 16 or 24 hours and then eat double.

I'm like, why would you do that? Like that's like clinically. And I think that's the thing that these people were not clinicians clinically. You'd never do that.

So sure, you're going to burn some energy when you're fasting and then you're going to gain a lot of energy, which is calories when you're not fasting.

Like there's no magic in this. So it's like the same thing. People just didn't think clearly. They just thought, oh, well, the fasting itself is some kind of magic.

It's not a magic. You're letting your body use its body fat. That's it. And glycogen, which is in the muscle and. Yeah. Exactly. So I mean we the good news is science is on the side of fasting and mean.

I've personally shared with you a couple of articles that we tested on the fasting mimicking nutrition and muscle. And we have specifically when after young male athletes to show that even in that crowd who's very elastic and could lose a lot of muscle or win a lot of or gained a lot of muscle, we did a randomized clinical trial and were showed that we actually protect muscle performance and muscle function, as you mentioned, for those people who lose a little bit of an extended, you know, biometric measurement, if they see muscle decreasing in mass, that's not muscle cells, that's the glycogen, that's the storage.

And if anything, with the fasting, we can dive. You're feeding muscle under a high growth hormone environment. And we're seeing a lot of actually sometimes much better performance.

And that's a very important point because millions of people today are sacrificing their muscle with GLP ones with chronic dieting, chronic restriction and the GLP ones.

And now recently we had a new trial last week showing bone density decrease. I mean, that's where the GLP one. So going back to the same story, I think a lot of people attack the natural ways that are effective.

They want to sell you another drug or another way that they want to sell and ends up being the long the long deprivation, as we know historically. And you started the session was saying it's difficult to comply and have a long term side effects.

What is fasting triggers that protection reaction is a short term feasible solution, and is the natural way that the body had to go through, through thousands of years of evolution.

Yeah, people always say stuff like, well, maybe it works, but people will never do it. I'm like, did you tell people to do it? You can, you know, in the old days, people did it when you told them they did it.

Like, you think it's easy to do chemotherapy. No, but you tell them to do it and they do it. Why? Because they need it for their treatment or it's surgery or whatever.

You know, all these dialysis, all these things that we do in medicine that are quite difficult, right? They're not easy things to do, but they know that it's good for them.

So they do it. Same thing with fasting. It's like we don't tell them and then we assume that they can't do it. It's like, but you think that somebody will, you know, go undergo triple bypass surgery.

It's like, oh, they'll just cut them open and crack open their chest. And they're like, that's a lot. But they'll do it because they, they, they know that it's good for them.

And the doctors tells them it's good for them, whereas we don't even tell people that fast and good for you. We just get this, oh, people won't do it.

I'm like, God, like we underestimate, you know, sometimes the medical profession just underestimates the intelligence of the average person, right? They think, oh, people are so stupid.

Like, it really is very this very paternalistic sort of. Well, we know it benefits them, but they won't do it. So we won't even talk about it. And it's like, come on.

Like you're not giving anybody the benefit of the knowledge. Just tell them what it is. If they don't do it, they don't do it. If they do do it good. Maybe they'll benefit. It's quite striking.

Sometimes it seems that they would. They would risk it around injection of everyone agonist. Right. And and people are are injecting it biologic in their body and pay for it to lose the.

And you can do it in a much easier and natural way would be it would be would be with the fasting, whether it's intermittent or the long one. I wanted to ask you, I know you recently wrote a book on cancer as well, and you became passionate about that topic, and I wanted to ask you if you had a little bit look to the data of fasting and cancer or cancer treatment, and if that's the next horizon for potentially cancer treatment as well.

Yeah, it's a very interesting topic and it's a much more complex topic. So some people try and, you know, say, oh, it's just this or it's just that like it's just genetics or it's just this or just that.

It actually isn't is a very complex topic. And that's what the book was about, sort of complexity of it. However, the fasting does clearly have some benefits in terms of, you know, the risk factors for cancer.

So if you look at the risk factors for cancer, obesity is a very big one. In fact, diet obesity really are tied almost with tobacco smoking as causes of cancer.

There's like 13 different types of cancer that are called by the World Health Organization obesity associated cancers. So it's not that it's not well known.

Everybody knows it agrees that it plays a role. So therefore if you can lose weight then and these include things

like breast cancer, colorectal cancer, pancreatic cancer very bad ones.

And the thing is if you know that's a risk factor then you can do something about it. Because if you lose the weight or cut the diabetes, reverse the diabetes, then presumably you're going to decrease the rate of cancers that happen.

So it is, you know, certainly one of the bowls. And the question is what role does it play. And that's where the research has its super, super early. I mean there is a little bit of data.

You know, you've done several of the most, you know, the most important studies showing that you can have effects on these cancer cells by nutrition. And the thing is that cancer cell metabolism is quite different than normal cell metabolism.

So when you fast you force your body to feed off body fat basically. And the cancer cells can't do that nearly as well as a normal cell. So normal cell will switch over and just use body fat as a source of energy, whereas the cancer cell can't.

So very there's a good chance that it's going to be you're going to slow down the growth or even kill it by limiting the glucose that's available. Because a lot of these cancer cells really need super high or really thrive in the super high glucose environment.

Whereas when you fast, you get rid of the glucose because it's a short term energy source and you're switching over to fat, and therefore you may impact cancer cells, cancer treatment.

And the thing is that why not. Right. It's like people always worry about this thing called cancer cachexia. But that's actually a very, very different disease.

Nobody really knows what it is, but it's not calorie restriction. So the thing is, when you have cancer, your body actually the cancer actually breaks down your muscles and your fat to feed itself.

That's not just simply that's not just simply normal weight loss. Normal weight loss doesn't happen like that. But muscles are protected and the fat gets broken down.

So it's much different and why that happens. And you know what causes it.

Fasting, Cancer, and the Fasting-Mimicking Diet

There's a lot more research to be done. But you know, it's not a reason that early in the in the treatment you might not apply some of these factors such as fascinating to reduce your risk of cancer.

Once you have it. It's a much more difficult sort of thing to get around. You can use it along with chemotherapy, for example, you know, fast before the chemotherapy that sometimes that's very useful and wanted to ask you about.

Lately, I saw your increased interest in the fasting mimicking technology. You and I spent years talking about that and watching and building the science and watching the results.

A lot of people today are trying to fast with food, what we call fasting, with food and fasting and making technology. Do you want a little bit? Give your your perspective on it and around that as well?

Yeah. And this is where I've sort of changed my mind as more and more science comes out. And the thing is that there's two ways to do a longer fast. If you're doing a short, fast like 16 hours, there's not really any reason to have to take in food.

Like your body can easily handle that 20 hours. You can 24 hours. But when you're going five days, for example, which is the only five days, then there's two ways to do it.

You could do water only, right? You could just have water and herbal tea, for example. No calories, zero calories. And that is sort of the sort of purest way to do it.

And that's what I always thought was, you know, good, because that's the purest way to do it. And so I did it. It's it's not particularly difficult, but it does take a little doing.

The however, a lot of science has come out where they don't do that. And in fact, there's actually very few studies on pure water fasts of that lane. So if you look at your data, your data has food, but it's a low amount of food.

It's not like 2000 calories, it's like a thousand and sometimes down to 500. But there are other diets that have done that. 5 to 2 diet is also a type of fasting.

This do because again, on a fasting day, you take a couple of the other studies that came out. They don't, they don't name them, but like they don't give a name to it.

But they've also done, you know, long fast some, some of them ten days, but again with a bit of food. And the idea is that you don't need to turn down your insulin IGF one, you don't have to turn it all the way to zero.

Maybe you can just turning it down most of the way is good enough and maybe better. But in that case, that's how that's what all the studies have been, all the ones of past a certain length, right?

Once you get past a day or so, you find very few studies, but they just put zero tolerance. So if that's where the science is heading, hey, I think that you can get most of the benefits by having a little bit of food during the long fast like as a not necessarily.

Although the 5 to 2 diet, which Doctor Mosley had popularized is a shorter fast with still with food. Right. But he had great results like some of those studies are quite impressive on the 5 to 2 diet.

And again, it's the other thing is that certain clinics, like the clinic I mentioned in Germany, which has been around I think for like 100 years, there's been a it's been there a long time and it's a fasting retreat.

People go there and they stay there and they fast for ten days. It too is not a full water, only fast. They give you certain things like juices and all these other things, and you can quibble about whether you should take juice or not with all its fructose.

That's not the point. The point is that it also doesn't do that where they don't do a full water, only fast or, you know, for extended periods of time.

So because the science has moved that way and a lot of the traditional practice also like these fast Infinix and so on have moved that way, I've sort of thought, well, hey, if you get good results, who am I to argue?

Like why? Why would I argue with 100 years of clinical experience at the beach and your clinic, or the studies that are all coming out now in terms of doing the longer fast with a little bit of food support?

Like it actually, if I like I don't have the evidence to say that doing a water only long fast is better because that data actually just doesn't exist.

So I can either go with what's proven both historically, clinically, and in the studies, or I'd have to just say, well, I'm going to stick to my guns, Beautyrest, but I actually have no good data behind me either from a scientific standpoint or a clinical standpoint, because I haven't been practicing that long.

It's also the water long, long days of only water. Fasting has a lot of positive that we talked about, but also starts getting into a lot of negatives, right?

The body needs calories at the end of the day, needs minerals, needs vitamins. The normal operation of the body.

The brain has to keep operating the heart pumping the kidney is is too drastic.

I always compare it to a company with the revenues. Right? So yes, this year what is structure? The company. That's autophagy. It's healthy, but at the same time the best employees, they will leave because you cannot pay their salaries.

So you cannot you cannot buy your ingredients to sell them next the next month you cannot do any marketing. So going sometimes very drastic on the body.

It's a set of homeostatic environment going so drastic. Sometimes it's too much of the fasting with food probably is mitigating that and is keeping the pressure on the rejuvenating the cells, but actually nourishing the body to help it go through that, through that phase.

Yeah, I agree, I mean, I think that there's certainly a role for all of these sort of things. And if you're getting most of the benefits and making it, you know, if you're getting like 90% of the benefits, but making it, you know, 50% is hard.

That's the net benefit like that really is. So that's why I've sort of changed my mind recently about, you know, that's what happens, right? When when more science comes out, it's, you know, and it was it was clear that nobody was doing a study of water only fast.

And so as a science sort of changes, understandings change. And hey, you know, try it. I've actually so I've started to have people do it sort of in this sort of modified way.

And I'm seeing pretty much the same or better success. Even so is it the prolonged, the prolonged five days, the Prolog five days? Yeah. So I you know, I've asked people or I ask people just to sort of if they don't want to buy it, then just to sort of follow the idea of it just on their own.

And again, I don't see that it's much worse than the longer one. So again, I think that, you know, my own feeling is that you're getting the large majority of the benefit, but making it quite a bit easier.

So because you're making, you know, the relative amount that you're making it easier is more than, you know, any, any sort of maybe benefits that you may lose.

And that's again, questionable. I don't know if you lose any benefits. I really don't like. The studies are not there. Nobody's compared a five day water only to a five day.

Sort of. We did last. Yeah, we did only in animals and and animals were showing actually a little bit better in many instances. But in women's the reason why we don't see that because a lot of the indie boards, they say anything to fast people this long, or it's an ethical to do it when you have an alternative with food.

So we wanted to compare fasting mimicking diet to water fast, but a lot more is called that, that this is, you know, getting close to why to expose people to water fast this long when you have a better technology, or you can do it in a safer way to think about safety for hypoglycemia, etc..

And this is what we're seeing in mice and mice. You can do anything. I mean, in that sense. So when we did water fasting versus the fast segment became diet or the prolonged, we've seen better rejuvenation, especially stem cell reservation and GI tract, because you're feeding the stem cell resolution and you're keeping the right microbiome.

Something we don't talk about with water fasting if depleting the entire microbiome, it's water, right. And when you do a plant based fasting rejuvenation, you're actually helping the right bacteria.

You're helping closing the leaky gut, and you're helping all the downstream benefits from that as well. So to conclude today, I wanted to ask you, what do you do for your longevity, like Doctor Fang himself, you know, whether it's passing or other things, what do you do, how you eat, how you exercise, what do you do for your own

health and wellness and longevity?

I mean, I try to stay away from sugar.

Personal Longevity Habits and Closing Thoughts

I mean, I don't not eat sugar, but I compared to sort of when I was 20, it's sort of like 90% less than what I used to eat in terms of sugar. Right? I mean, when I was 20, I didn't really think about it.

If it was, they said, good, I ate it. So I do that, you know, from a dietary standpoint, I do stay away from as much as I can from refined foods and sugar.

And I think that's a lot of gets you a long way. So again, I don't not need it, but it's just down from what I used to do quite a bit. And then I do the fasting.

So I do sort of occasional long fast like five days plus plus the shorter fast, often a 16 hours and then sometimes 24 hours on a on a pretty regular basis.

My longer fast the last few times I've added some vegetables on the on like day four, day five sort of thing with because of the same thing. Right. The science has sort of shown it.

And then the other things are sort of common sense stuff that everybody should do. Exercise. I try to exercise, although I don't do as much as I really should, you know, and, you know, trying to keep a community is important.

Like some of these other people have talked about the importance of sensors purpose. Right. Because this is for your mental health, having, you know, friends or, you know, if you simply picked up tennis, which is not just good exercise, it's probably not as good exercise as running, which I also do, but it's much more social.

So you're getting sort of it's a gain, it's more enjoyable, but you're also sort of hanging out and, you know, so having a sense of people you can trust in a community around you and so on is actually quite important.

I think that, you know, when you when you look at a lot of these people who live a long time, they usually have these supportive people behind them. So that's that's what I try to do, you know, whereas before I did a lot of sort of running or solo stuff because, you know, my time was limited.

So if you want to get a lot of exercise in the short period of time, running is pretty good. And, you know, weights are pretty good, but it's not very social because I didn't I ran by myself.

Right. So whereas things like tennis are actually much more, I think something that you can enjoy for a long, long period of time. So that's the those are the things I mean, having that sort of, you know, idea.

It's not just a diet, it's not just the exercise. We all know you should follow a good diet right out the junk food, cut out the, you know, the chips and the French fries and the, you know, the sugar.

Like, that's not that controversial exercise. That's not that controversial. Like, everybody knows you should do it, but it's a matter of some of these other things.

You're sort of coming to the forefront, which is community and so on. I know Doctor Dan Buettner talks about it in the blue zones and so on about the sense of community.

I think he's absolutely right. I think that people who live the longest really have a sense of why they're here, whether it's taking care of your grandkids or, you know, doing something like helping the world by volunteering, by, you know, educating, which is something that, you know, you and I do, and then having that around you, those, those sort of source sort of things, I think actually wind up being just as important as the sort of, you know, what some people like to do.

Oh, I eat this percent carbs and I fast for X number of hours. But the softer things like having having friends, making sure you're connected to your family and stuff, that's probably just as important or more important.

It's just hard to measure it. Yeah. So fully agree. The social capital. I think it's nutritious. Social capital at the top two then then exercise and stress and sleep.

This is when we study the centenarians is what we observe in social capital. And happiness is the mother of all. When you're happy and well nested, you eat better, you sleep better, you stress less and you exercise more.

So I fully agree with you on that concept. Doctor FungI want to thank you very much for your time and the valuable information. Hopefully we change somebody's life today and inspired people to embark on the journey of fasting and longevity.

Appreciate you very much. Thank you so much.