Obesity and the calorie debate

Well, Dr. Fung, great to connect with you again. And I know you know you've written the obesity code and sold over a half a million copies and yet we still and and with rave reviews and so many great testimonials that have come from that.

And yet we still have this obesity epidemic. I mean, you wrote that book seven, eight years ago, and yet obesity seems to be climbing, even though so many people have found solutions through your book.

And so let's talk about the root cause of obesity and why our society is really struggling with this. Yeah, I think, you know, the problem is that things are always very slow to change and medicine.

And so there's a lot of sort of old ideas sort of hanging around. And, you know, the people that are in charge of sort of academically obesity medicine, they still mostly talk about calories.

So, you know, and you see this in the newspapers and all this sort of stuff that, you know, it's all about calories in, calories out. You know, calorie deniers and all this sort of stuff.

And so it's really hard for people to sort of understand if, you know, all the doctors, all the dieticians, all the university people are saying it's all about calories, all of our calories, low in calories, then you think, well, maybe it's all about calories.

The problem with that idea is that it's you know, what what I talk about, which is trying to understand the sort of hormonal sort of underpinnings of obesity, is that it's it doesn't sort of go against the whole calorie thing.

It what it's trying to do is sort of go one deeper and I'll give you an example. Like, you know, we have the, you know, this this sort of thing. They say, you know, body fat equals calories in minus calories out.

And they always say, you know, you read this newspaper like everybody who denies this is like, you know, denying physics and all that sort of stuff. But that's not the point.

The point is not that it's not about calories. What you're trying to do is trying to get to that one level deeper. And it's like, why is it that calories in exceeds calories out?

Right. It's not that the question is not that calories in exceeds calories. That is why it is. Right. And then you have to say, are people eating more because they're hungrier or is it because their metabolic rate is going down?

What is that underlying reason? And that is not something that you can decide, right? Because they say, oh, it's all about calories. So it's basically choice. Right.

Whereas if you say, well, they're eating more because they're hungry, then it's like you can't choose to be less hungry. Or if there is, if they're gaining weight because their metabolic rate is going down, you can't choose to have a higher metabolic rate.

It just is. So how did people in the sixties and seventies maintain their weight? Well, it's because there are hormones, you know, and there are hormones that control how hungry you are.

there are hormones that control your metabolic rate. there are hormones that control when you stop eating. So there's lots of hormones. And that's the sort of what that's what controls that whole calories sort of issue.

So, you know, it's sort of like saying, you know what caused, why did the Titanic sink? Right. And if you're very a

very superficial thinker, you'd say, well, it hit an iceberg.

It's like, okay, so the answer is, don't hit any more icebergs. Okay? But that's not useful advice. If you told the captain of a ship, don't hit any icebergs, you think that that would be useful?

He'd be like, Of course I'm not going to hit icebergs. But the real reason the Titanic sank is that it was going too fast. It was going too fast in an area that had lots of icebergs.

So the answer is to slow down, not to not hit icebergs. Right. It's the same with the calories issue. Right. So if you say to somebody, just eat fewer calories, that's the same thing as just don't hit icebergs.

Right. You're not getting into the deeper reason as to why they're eating too many calories. If the problem is that the foods are too processed. That's junk food. Right.

So it's very highly processed. But what happens when you process foods, you take out the protein which creates satiety. You take out the fat which creates satiety.

You take out the fiber which, you know, stretches the stomach and creates satiety. So you take out all those issues. All of a sudden you've gotten rid of all those hormonal satiety factors.

Right now you have junk food like chips or something like that, highly processed carbohydrates. Now all of a sudden, you can overeat them because you don't have the natural satiety signaling.

Right. And that's the reason you're overeating. But it's not. So. So the problem is not to simply count your calories because it clearly doesn't work.

The problem is to try and find out, is it because you're eating highly processed foods? Is it because you're an emotional eater, for example? Is it because you're unconsciously eating in front of the TV, in front of the movie theaters?

Is it because you're addicted to foods? Is it because you know, you're eating too frequently like there's so many things that could cause your calories in to exceed your calories out.

you have to get into that deeper level of what is causing it, not just count your calories, right. Same as if you say, you know, drunkenness equals alcohol in minus alcohol out.

And you say the answer to your solution, to your problem of, you know, drunkenness is just drink less alcohol. Be like, that's not useful advice. Right.

Same as just eat fewer calories is not useful advice because you haven't gone that one level deeper and that's where, you know, things like fasting, for example, create a structure, for example, to the eating day.

So in the 1970s, for example, people didn't generally eat after dinner. You didn't eat until breakfast time. That's the very word. Break fast. By creating that fasting period as a standard, you know, habit that virtually everybody followed, you made it easy to have, you know, have a period where people were fasting.

Hormones, insulin, and why calories are not the whole story

And therefore, if you're not eating, then you're using your own, you know, sources of stored calories, which is sugar and body fat. Right. But the reason that you're able to do that so easily in the seventies is because everybody was doing it.

Nobody was. You know, if you're go to the movies or sit in front of a TV, it's not like other people around you are eating snacks and chips. When they do, you're going to want too right.

You've made it difficult for yourself and that's the reason you've overeaten. Right. So all those calories, folks who keep insisting that it's all about a caloric deficit, all about a caloric deficit is like, sure it is, but you're not getting into the reason that you're not getting to this caloric deficit.

Right. So same with Keto. Right. Well, if you have keto, for example, and you cut down a lot of these carbohydrates and you eat natural foods where you're eating foods that are naturally very satiating.

So you're eating steaks and you're eating, you know, eggs and things that make you feel full. Right? It's and you can compare that to, say, eating white bread and jam.

It might be the same number of calories, but you don't have the protein, you don't have the fat, don't have the bulk to make you feel full. So by 1030, after eating, you know, white bread and jam, you're ravenous.

So you're looking for that muffin. Whereas if you eat steak and eggs, it might have been the same calories. But you're full for the whole morning and you don't need to eat.

So therefore you're creating less calories. Yes, but you're getting to the sort of root cause as to why you're overeating. So so that's why I always think that, you know, and every know people who talk about things like that, you know, like you and I, we often get torn down by the sort of academics and people who are.

And I always think. But your thinking is so first order, first level thinking, you're not getting into the deeper reason you're, they just eat fewer calories is the equivalent of just drink less alcohol.

Answer Right. Like how many alcoholics have been cured with the advice to just drink less alcohol? Buddy it's like, yeah, that's the most useless advice.

Or Hey, Captain, just hit don't hit icebergs. Thanks. Thanks. That is not useful advice in the least. Right. Because the advice is to, hey, why are you drinking more alcohol?

Is it depression? Let me get you treatment. Let me get you some, you know, counseling, because that is going to help with the alcohol problem because you're drinking, because you're depressed, for example.

Right. Whereas, you know, in that and analogy, people would say, well, you know, counseling doesn't cure alcoholism in the absence of drinking less alcohol, of course.

Duh. Right. Or slowing down doesn't help the Titanic. If. If you didn't have an iceberg. Well, duh. Yeah, obviously. But getting to the root cause and I think that's the sort of simplistic thinking that I still see a lot of.

Like, despite everything that goes out there, people really want to grab onto that calories and so on. And it's like, well, if it worked, I'd be totally fine with it.

It actually doesn't work at all. Right. Telling somebody to slow down causes fewer accidents. And those people are attacked for saying that, hey, the advice to slow down doesn't work.

If if if, you know, if you didn't hit anything but well, that's the plate, right? It's slowing down so you don't hit anything. Whereas those people say, I can just give people and tell them, just don't hit icebergs.

And that'll do the same thing. It's like, No, it will not. And it's frustrating because it's like to me it's a very obvious sort of thing we're trying to get to the deeper reason as to why people are overeating calories, whereas they're saying, but that's the whole problem.

So just, you know, deal with it and tends to be a lot of these sort of bro science people who, you know, who are all about sort of willpower. And it's like, I think people have the same willpower now than they did 50 years ago.

I think the environment is different and we focus on the wrong thing. Yeah, for sure. It's a very robotic answer of

calories in, calories out and doesn't take into affect human behavior and it's not personalized enough for humans.

However, it does give processed food companies kind of an excuse because, hey, if it's just about the amount of calories you can eat, whatever, and just get your calories down to a certain level and you can eat our, you know, super processed white bread. Right.

And that's where Coca-Cola was was found giving millions of dollars to these universities. And this is maybe where it comes from. Like all these universities are getting millions of dollars to promote this calories idea, which is the whole idea, is that you can take 100 calories of Coca-Cola as to 100 calories of an egg.

It's the same. They're equally fattening. Right. Cookies are as fattening as broccoli for that because if the same number of calories this like like your grandmother would have said, you're an idiot if you believe that.

Right. And it's true, like and it's like yet this is what comes out of academic centers, universities, dietitians, doctors. It's like 100 calories is 100 calories, whether it's from cookies or whether it's from, you know, salmon, it's like, okay, the minute you put those calories into your mouth, the hormonal response to, you know, eggs versus cookies is completely and utterly different.

One will spike glucose, one will spike insulin, the other won't. So if you have a completely different hormonal response to those foods, why would your body react exactly the same?

It makes not even a little bit of sense. The whole entire calories argument is completely like it's completely nonsensical and yet it's frustrating to read that, hey, you know, this doctor and this PhD in this thing says it's all about calories.

It's like, is it because they're paid to do it? It's like maybe. But it's also because I think it's been ingrained into them over and over and over again.

So they believe it to be true. And sometimes these things just take time. These ideas take time to die out. Yeah. And it really disregards how the body adapts to the food you're putting in, like you talked about this hormonal response.

It's kind of like if you're, you know, a football coach and you just you're like, okay, we're just going to run this one play. We're going to throw it deep to the wide receiver.

Defense is going to adapt to it, right? You're not going to be you. You have to. You know what I mean? You have to understand how how the body is going to adapt to the food that you're putting in your body.

And that's what you've done such a great job with your books is helping people understand if you eat white bread, if you eat the coke, you're going to get a bloody high blood sugar.

You're going to get high insulin. And how that actually impacts your ability to burn fat for fuel and and your cravings. Right. And so going back to the root and you talk about this in your book, you know, you talk about the hormonal effect and insulin as one of the major trump card in a sense, right.

The yeah. And the hierarchy of hormones insulin really has its say. And so can you explain that in more detail here? Yeah, exactly. So there's other hormones that make me gain weight.

But, you know, people talk about like so if you're trying to lose weight, the most important thing to understand really is what caused the weight gain in the first place.

And people say it's all about the calories. And again, it's not because if you put calories into your body, calories as a is a source of food, energy, right.

Your body can decide what to do with it. You put 500 calories on your body can decide what to do with it. It can

either start as fat or it can burn it for energy. Right.

So your heart, your lungs, your kidneys, they all need energy. So what determines that? Well, it's a hormone. So insulin is the major hormone. So when insulin goes up and this is just its job, right?

Insulin is a normal hormone. When you eat and insulin goes up, your body wants to store that energy. That's what instance doing. Right. And it's because that if you store energy, when you don't eat, say, after dinner during that fasting period that you really should have every night, then you're going to need to pull that energy back out.

Right, because you're not eating. So where's your heart, your brain, your liver going to get its energy from, right? Well, it's going to be the calories that you stored away.

So the normal situation is that your body, you have a period of time that you eat, insulin goes up, you store those calories, then there's a period of fasting you don't eat, insulin falls, that energy comes back out.

So your body's really either in this Fed state or it's in the fasted state, in which case the Fed state, you're storing calories, the fasted state you're using calories.

And if you keep those balance, good for you. But different foods are going to have different effects on insulin. So you eat cookies, your body gets this massive signal because these processed foods, remember, don't have natural signaling because we've taken away a lot of these sort of natural foods.

So you take a highly processed junk foods, you eat it and you get this much higher than normal spiking glucose, which gives you this much higher than normal spike in insulin, which tells your body store that energy as fat.

So, okay, so now you take 100 calories of cookies, all of it sucks into your fat stores because you told it to because that's what the instant does. But where's your body going to get energy from? Right.

So an hour later, you know, and there's no satiety signaling. So you're not feeling full in any way, right? Eating cookies generally doesn't make people feel full.

If you drink Coca-Cola, you don't feel full. You could drink that huge, big Gulp. You don't feel any more for them before, but that's like a thousand calories sitting there, right?

So it's not the number of calories that you eat that make you feel full.

How fasting lowers insulin and restores energy balance

It's the hormones that make you feel full. You eat a bit of steak, those satiety hormone peptide, why? Why is this the closest to kind? And they go up, they tell you, okay, you're getting full, you drink all that soda.

It's a huge number of calories, no satiety signaling. You don't feel full. The problem is so you eat the cookies, instant spikes way up, you suck all that energy into your fat stores, but you don't feel full.

So an hour later, you go eat more cookies. Same thing happens, right? That's why you can't eat cookies for dinner. Because you're not going to be full.

You're going to be looking for food. And if you're if you're hungry, you're going to eat, right. And then people say you're overeating. It's like, yes, you're overeating.

But the reason is that you didn't eat the foods that made you fall and you spike your insulin. So all of it's getting sucked down. Your body has no energy to use because you sucked it all into storage, right?

So now you're going, looking, looking for food because you're like, I need more energy, right? Just like if you take if you go to the grocery store, right, and you buy groceries and immediately as soon as you get home, you throw that

all into your freezer in the basement right.

What are you going to eat? You have nothing to eat. So what do you do? You go back to the grocery store, go get more food because you had nothing to eat.

Same thing you eat these ultra processed foods, right? Mostly refined carbohydrates is the main problem. Right? The all goes into storage because insulin told it to go into storage.

Now you have no energy for the rest of your body. I got to go get more. Same thing. So insulin is that major determinant. If on the other hand, you eat, you know, an egg or something and insulin doesn't go up well, there's probably of energies floating around.

Why do you need to go eat right? Your body's like, okay, I'm being full. I'm just going to use the energy here. The difference, of course, is that none of that energy went into storage because you didn't tell it to go into storage.

Hormones are what runs the body. Every single thing in our body. Brands because of hormones. Right. Obesity is no different. So if you're trying to fix obesity, you got to say, what's the problem?

Well, what causes weight gain? Well, if you think it's calories, well, you'll you're not going to be very successful because people have done these studies.

Right. If you simply overfeed somebody, it's very difficult to overfeed somebody's natural foods. Right. If you keep eating steak, steak, steak, there's a point that you actually has to stop.

Right. You cannot eat and eat and eat because those natural foods have satiety hormones. So that's not going to work. However, if you think that insulin is the major cause of obesity, the really simple experiment, if you give somebody insulin, do they gain weight?

Absolutely. When you give people insulin, it doesn't matter who you are. If I give them insulin, they will gain weight by because the insulin is a hormone that tells them to gain weight.

So we know hundred percent people say, well, that doesn't prove anything. I'm like, I'm looking for causality. If you say insulin causes obesity, the only experiment that I'm interested in is give insulin.

Do you gain body fat? If the answer is yes, that means it is a cause of obesity. So it's not the only cause. There are other causes, say cortisol, for example, but it is one of the causes and probably a major cause.

So therefore, if you say insulin is a cause of obesity because we know this, then if you want to lose weight, how are you going to lower insulin? Well, obviously eat less of the foods that spiker insulin or do fasting, which is ultimately about lowering insulin.

It's not about lowering calories necessarily. It's about lowering insulin. Yeah, really, really important stuff there in insulin when it's elevated in the body, it will also accelerate cell reproduction and can have an impact on obviously inflammatory levels and aging as well.

Yeah, yeah. Insulin has a lot of effects, so it's also a growth hormone. So for a lot of reasons why insulin levels excessively high are not good. And again, I don't know why this is so controversial.

Right. So insulin is a hormone. It's supposed to be at a certain level, it's too high. It's not good. If it's too low, it's not good. I'm not sure why people are.

Don't get that. If it's too high, then you need to lower it. So in the state of obesity, we know hundred percent that it's a state of hyperinsulinemia that is in people who are overweight.

There is a levels are too high that's been shown for like 25, 30 years. Nobody doubts it. Same as type two diabetes

and type two diabetes for insulin levels are too high.

So solution lower that it's not that complicated. So the question is now how are you going to lower them? You could say cut your calories. But remember, some foods don't stimulate insulin barely at all.

So if you cut all your, you know, fat calories like a low fat diet, remember, dietary fat doesn't have barely any effect on insulin. So if you have a problem of, okay, my insulin level is too high, I'm going to cut calories, but I'm going to cut fat mostly because fat is very calorically dense.

You haven't impacted insulin levels barely at all. So you haven't really fixed your problem as opposed to, hey, I'm going to cut all my refined carbohydrates because those are the foods that stimulate insulin the most.

Therefore, it makes a lot of sense, in fact, highly effective for a lot of people. And yet people will still say, Oh, it's because you cut your carbs and actually cut your calories.

It's like, no, it's because I cut my carbs. And those are the foods that stimulate insulin the most. But, you know, it's a whole other discussion. The calorie counting, you'll never convince them.

Everything always comes back to the calories for them because it's just I don't know, it's just hard for them to wrap their brains around anything else.

But the whole the whole idea is that you have a hormonal imbalance. Insulin level is too high. Lower it a lots of ways to do it. Like you don't have to necessarily go low carb.

It's one of the ways you can do fasting and that's one of the ways. But there are diets that are low fat that you can reduce insulin to. I mean, there's there's lots of different ways to do it.

Exercise can be a very effective way. It tends to be a lot more work than changing your diet because it's it's it's it's not, you know, it's not primarily insulin's primarily not an exercise hormone.

It's predominantly a dietary hormones. But nevertheless, the exercise is going to affect it. But there's lots of different ways, right? There's different ways even in terms of foods like fiber, you can slow down absorption, you can use vinegar, you can change the order of your foods.

There's there's a lot of different things you can change in meal timing, like, you know, eating early rather than late. So there's there's all these sorts of things and they're important because they affect they affect the hormones and not necessarily the calories.

Yeah. So if we want to be healthy, we want to be at our optimal weight. We want to feel great on a regular basis and we want to live a long life and as as free of chronic disease as possible, we want to control our insulin levels.

And so you mentioned several different strategies there. Now, obviously, you have a lot of experience using fasting. And I know as a nephrologist you're working with a lot of people with diabetes, kidney issues, a lot of people coming in with chronic disease.

How do you get them started out with a lot of these strategies, including fasting? Yeah, I think that the simplest is fasting because it's it's very easy for people to understand.

It's been used for thousands of years. You know, the problem with changing diets very often is that people are very fixed to their the foods that they eat, which is which is normal.

If you simply say don't eat anything, then it's it's easy to conceptualize that and it's easy to to to know what to do. Right. Because if you just say, okay, eat this ketogenic diet, that's fine.

But then you get all these questions. Is this chemical is this is this is this, you know, whereas fasting is a much you

know, it's a cleaner, simpler solution.

So it's also a very powerful solution because, of course, you can't eat less than zero. So therefore, it is really the ultimate in terms of diet and sort of the fastest way that you can reduce insulin levels.

You really can't again, you can't go lower than zero, so you really can't go lower than fasting. So it's the most powerful. It's as simple as it's it's not sun like I never said it's fun, right?

I just said it's it's useful. So for people who are very sick, it is a very good tool. And the thing is that a lot of people, you know, over the last 20, 30 years of society, we've gone the other way.

Right. And as opposed to, you know, in the seventies where you had you didn't eat after dinner, you went right through to breakfast. Right. You had 12 hours.

So you eat dinner at seven, you breakfast at seven or nine. Say that's 12 to 14 hours of fasting that every person did every single day without thinking about it.

Nowadays, people think it's crazy to go more than 3 hours without eating right. It's like we've gone so far the other way that we have to eat, eat, eat all the time, even to lose weight.

It's like now always thinking, how does that work? Like do you eat to lose weight? You really can not because it's completely opposite. It's like, good jump in the lake to dry off.

It's like, no, you really can't do that, right? You can't eat to lose weight. So the fasting is the thing that I tend to focus on because it's simple, right?

And all you have to do is start slowly because I'm dealing with a lot of older people, a lot of people who are very ill, who are on other medications and gradually ramp your way up.

So you can start with again, don't eat after dinner. Make sure you go right through until breakfast and then you can gradually banked in that period of time if you need to a lot of people do well anyway, but then if they want to lose weight, then they can start experimenting with going longer, sort of either eating breakfast later or eating dinner earlier and gradually even dropping one of the meals.

Because the truth is that if you don't eat like people are always, they tend to overthink things. Things are not that complicated. Body fat and blood glucose are two ways that the body uses to store calories.

Okay. So if you have too much glucose, which is diabetes or you have too much body fat, which is obesity, then you have too much stored food on your body.

So if you don't eat, your body will use the calories that are stored as body fat or as blood glucose. That's it. That's all that happens during a fire.

Fasting, muscle preservation, and broader health benefits

So why are people, like, hearing the fast like why is it so bad so fast? When you fast, your body will use body fat. That's what it's there for. You're using it for what it's there for.

So why not do it right? Don't overthink these things after fast. Will you be more hungry? Yes, you might be. In which case you have to control the you know, you do have to control what you're eating.

But on the other hand, you just have to understand that there's nothing intrinsically wrong with not eating. That's the reason that your body has as these sources of energy.

We wouldn't have survived if we didn't have a way to store energy. We die in our sleep every single night, but we

don't. So therefore let's just use it for what is there for.

Yeah. And our ancestors, you know, go back thousand years ago, I mean we didn't have refrigerators, pantries, things like that. So it was very common.

They go through feast and famine cycles when food was available to eat as much as they could. And it was very satiating foods like you talked about, high in fiber, fat, healthy fats, proteins, things like that.

So they were satiated and they couldn't really store much. And so there were times where they didn't have a good hunt or they didn't have a good harvest, and therefore they were in a in a in a season of fasting and their body had to adapt to it.

And sometimes they would go days without food and instead of getting weak and like just laying there because they didn't have any energy, oftentimes they got stronger, they got their senses were heightened because all of the hormonal mechanisms that took place, elevated growth hormone or up in Africa and different things like that, which gave them a bit greater ability to go out and hunt and be more sex and, you know, higher probability of being successful because their senses were heightened.

So it's interesting what happens. It's interesting. And it's all physiology like people like this is all sort of basic human physiology that we've understood.

It's like first year medical school stuff, right, when you don't eat inside is going to fall right? So your body is going to start liberating some of the energy that's stored.

So glucose is going to go into the system. It's going to use body fat, that's fine. But other hormones go up, growth hormone goes up, which preserves lean mass or epinephrine goes up, which is going to increase your concentration abilities.

It's going to increase your senses and give you more energy, which is why we have all these studies. For example, like they'll measure, say, metabolic rate.

And, you know, after four days of fasting, what they measure is that the metabolic rate, the number of calories the body is burning, is actually up by 10%.

And people have known this forever. I mean, you think about the hungry wolf, the wolf who hasn't eaten for a what is it like just falling down higher?

No, it's focused and energetic. That's what you want to be. You want to be the hungry wolf. You don't want to be that lion that just eat, you know, sleepy, you know, sort of like that food, coma, you know, post-Thanksgiving sort of like, Oh, I just need to lie down, sort of feeling like, that's not energy.

That's because you ate and you're, you know, you need to digest, right? Hunger is not like that and fasting is not like that. And it's always strange that so many people are so against it.

Sometimes it means less now than when I started. When I started, it was completely like, people are telling me all about this. I'm like, Read your basic physiology textbook, man.

It's not anywhere close to what is happening out there. And, you know, the whole this whole idea about, you know, burning muscle, I think, is also way over blown, too.

I mean, it all everything depends on your clinical situation because I see this sometimes people are out there saying, oh, it makes you lose protein and stuff.

It's like, lose muscle is the one I was just looking at actually. And it's, it's sort of ridiculous because they do these DEXA scans or something like that before and after fast and they say, Oh, I lost like £10 of muscle.

It's like so in other words, you think the human body is so incredibly stupid that when you're when it's, you know, you have it when you're storing energies or body fat, but when you actually need that body fat, you go and burn your muscle.

Is that right? You think the body is just that stupid, right. And of course, it's not, because when they actually study, why is it that the muscle looks like it goes down?

They took these men, they put them through a ten day fast and said there's a huge amount of muscle loss, according to the SCAD. But when they actually broke it down, it was all basically muscle, glycogen and water that was being lost because if you actually were to measure these people after they sort of lost all this muscle, you know, a week later they've magically regained all this muscle without doing exercise, right?

It's like, what you think that people just lose £10 of muscle without for for no reason while maintaining muscle strength and then regain it without doing exercise like I wish.

And what was interesting about the study where they did a ten, you know, ten day fast is that when they actually measure strength, strength actually went up and certain in certain muscles by about 33%.

Wow. It's like, oh, so they weren't losing muscle. They're actually much stronger than they were before. And some of it may have been the sympathetic tone that was elevated.

But in other words, no, you're not burning muscle that if you're at like 3% body fat, sure, maybe you will. But I'm mostly treating people well in excess of the average, which is sort of 20 to 25% body fat.

Right. So for somebody who weighs £200, you're talking about £50 of body fat that sit there. And that's for an average person. Like 25% is not like really they don't look like overweight.

I mean, the people who look overweight are like 40% body fat, right? So it's like £50 of body fat and you think the body's just that stupid that's just going to start burning muscle right?

I don't think so. Yeah. Again, it doesn't take into account the hormonal effects. Growth hormone is a very powerful hormone in the body. And it's going to say, hold on to that lean body tissue and help preserve that you got you have elevated branched chain amino acids.

When your body starts to burn fat and insulin goes down, which tell the body, okay, hold on to that muscle tissue, we want to preserve that because we need to kill something, right?

We need to we need a hunt. We need a harvest. We need to find food. So we need that muscle tissue, you know, from an ancestral perspective. And of course, you have that in where I noradrenaline as well, then we're epinephrine that comes out.

And that would be why somebody would be stronger after a ten day fast. Right. Really fascinating. I think probably the only way you might lose some muscle is if you're somebody that has built a lot of muscle from resistance training and then you just start it's really more of the stopping the resistance training for an extended period of time.

You're going to have some natural atrophy just like you would if you were eating. You would have atrophy as well because you built extra muscle tissue.

And so oftentimes when we're fasting, you know, we're we're not we're not doing resistance training because it might stimulate more cravings or things like that.

So if somebody is doing an extended fast, that's that's certainly possible. But the hormonal impact is so powerful. And we know growth hormone has incredible effects on aging as well.

They call it the quintessential anti-aging effect. And when we just stop eating, when we fast and bring insulin down,

we get this nice rise of growth hormone that can have these powerful anti-aging effects.

Yeah, yeah, for sure. And the thing is that it has so many benefits in so many different areas. Right? So not just metabolic health, of course, but people talk about autophagy and people often talk about like cancer, for example.

And or insulin are both growth hormones right there. They're nutrient sensors, right? They go up when you eat. So when you don't eat, they tend to go down, but they also tend to be associated with a lot of cancers.

So obesity is associated with cancer. So can you reduce your risk maybe in all of these things are you know, they're not for sure. But there's a lot of, you know, really important benefits that go along with with fasting, you know, that that, you know, it's a it's a free it's it's it's amazing as a free intervention.

It's used for thousands of years as a sort of pro longevity, pro health thing. Right. People didn't fast for fun. They fasted because they thought it was good for them.

Yeah. And I think maybe they were on to something. I mean it's, it's crazy to think that we're so out of the loop that, you know, we, we think we're so smart when people in the past didn't didn't necessarily know why it would help them.

But they realized it would help them so that that was enough for them. Right. They just said, okay, well, it's enough to help me. So. So they did it, right?

It's it's that's incredible. Yeah. And the insulin effect on chronic disease, I always think about it like this. The there may be a genetic or a toxicity component or some sort of component that is kind of like the spark on a fire that kind of lights the fire.

But the higher your insulin, it's like you're pouring gasoline on it. And so you're allowing now that spark to really take life. And when you when you control your insulin, you're not you're no longer pouring the gasoline.

So now the body has a chance to kind of bring that fire down and under control. Yeah. And it all depends on your underlying situation. If your insulin is too high, then yes, bringing it down is perfectly, you know, is going to be very, very beneficial in somebody who's, you know, it's not high and people who are, you know, underweight or even malnourished, like, is it helpful?

No, not at all, because insulin levels are low. So why would you want to lower that? Right. So it all depends on your situation and understanding how to use fasting.

Where to use fasting. I think that is really the most important thing. It's just a tool, right? It's just like a knife. It's an either good or bad. It can be, you know, it can kill somebody. Sure.

But It can also heal if you use it like a scalpel and cut out a cancer or something. So the whole idea is that you have to understand these things and sometimes it gets lost in the hysteria of, you know, people who are just so dogmatic about this and that.

It's like it's all on how you apply it. Yeah, absolutely. You know, it's just so refreshing to be able to converse with you on this. I know obviously you're you're in the medical world and conversing with a lot of people, you know, in that world.

And that's probably why you kind of have this perspective of, man, I just wish people would get it, would it would understand this better. And so, you know, refreshing to hear that.

And, you know, in my space, it's like we're talking about this stuff all the time. So sometimes I, I forget that there are a lot of people that are just resistant to that message, but we're starting to make some headway.

Reversing metabolic disease with daily habits

And, you know, I think just conversations like this, getting these things out to the world, your YouTube channel, your books, I know have made a big impact for a lot of people and they've really gotten that message across.

And so just want to take a moment, acknowledge all the great work that you're doing. And guys, definitely check out Dr. Jason Fung, check out his website as well as his books and YouTube channel as well, where he's giving out really, really great information like we talked about today.

So Dr. Fung, thanks again for this great conversation. Any last words of inspiration here for our audience? I think that one of the things people have to understand is that it's it can change, like your life.

Right. Because a lot of these things, like if you have type 2 diabetes, you're at a high risk of lots of bad things. Okay. So heart disease, cancer, strokes, you know, infections, blindness, kidney disease, amputations.

Right. So and a lot of people in the US have either type 2 diabetes, or pre-diabetes like, you know, it's actually well over a third of the population has prediabetes or type 2 diabetes.

And so that puts them at huge risk of really bad things. And the point is that it's all reversible. So yeah, maybe, maybe fasting isn't the most fun thing in the world. Like it's, it's something to really think about.

It's sort of like doing exercise. A lot of people don't like to do exercise, but they do it anyway because they know it's good for you. It's the same thing as fasting.

It's really something that's part of your sort of daily lives, like brushing your teeth, like brushing your teeth is not fun, but we all do it because it's something you have to do to stay healthy, right?

Fasting is insane. It's just something you need to do to stay healthy. Now, if you're so far on that pathway to type two diabetes pre-diabetes, well, then you need to do more to get you to work your way down.

But if you do it every day, you simply keep at it. Then you can get to it. And the people with type 2 diabetes, particularly, you have to understand that it's a reversible disease.

So you have to put in the time and the effort. And it's not really just about knowing that you should do it. It's about, you know, getting the motivation, getting the help, getting the community to help you.

Right? Like, you know, we're all in this together and we can help each other, right? There's no reason to do it alone. It makes it more difficult to do it alone.

So it is something that is just a part of everyday life that has been neglected too. You may have to make up for it, so don't think of it, as some people think of it as some weird, crazy fad diets like, no, it's not.

It's just part of everyday life. And you may need to do more if that situation is like that. So, you know, to just just, you know, just to think of it that way rather than, you know, some something you can do like once I mean, I remember some of these studies that people used to do, they're like, oh, if you fast for 16 hours and eat in an eight hour window, you can eat whatever you want.

It's like, since when did anybody say that? And yet the studies were done using that exact principle and then saying fasting doesn't work. It's like, well, there is nobody I know who said, you can do a 16:8 and eat pizza and French fries during for 8 hours straight and you'll be fine.

Like, nobody has said that. And yet the studies say that and then say fasting doesn't work like the like there's so much sort of bias against it, almost so.

So don't think of that. Think of just as just another just another tool, something you have to think about every day. Yeah. It's a core component of a healthy lifestyle for for for longevity and for health optimization.

That's really the way you got to look at it. Well, thanks again, Dr. Fung guys. Checking out again, doctorjasonfung.com and check him out on YouTube and all of his books.

Great one is the Diabetes Code as well as the Obesity Code and your upcoming book, The Cancer Code as well. Looking forward to that. Thanks for good. If want to read that one's out already.

Actually. Cancer. Oh, it is. Yeah. Yeah, great. So the cancer code as well. Guys, check that out. Thanks again, Dr. Jason.