

The Fasting Method #163 - Fasting Q&A with Dr Jason Fung: Order of Fat Burning, Fasting With a Gastric Sleeve, BMR Fluctuation, GLP-1 Drugs, and More

Megan [00:00:06] Before we get started with today's episode, I would like to quickly read you our podcast disclaimer.

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[00:01:13] All right. And now we'll get started with today's episode.

Lisa [00:01:19] My name is Lisa Chance and I'm a fasting coach here at TFM, and we are here today with our very own Dr. Jason Fung for our monthly Q&A. And a warm welcome to our podcast listeners who will be able to listen to this Q&A with Dr. Fung in a few weeks after our community members. In this monthly Q&A with Dr. Fung, he answers questions submitted by our Fasting Method Community members. And since it's recorded, it may also be found underneath our Program section under Past Webinar Q&As. All right. Good morning Dr. Fung. Great to see you.

Dr. Jason Fung [00:01:55] Good morning. Good to see you.

Lisa [00:01:58] So I'm going to start off right off the bat here with a question about the Lumen device. They said they have a Lumen, and they've heard Lumen talk about a fasting sweet spot. And they say that if you fast too long then your body might get stressed and you go back into carb burning. They say that if you test with the Lumen every two hours, you can see this switch from carb burning to fat burning, and then possibly back to carb burning again, in which case it would be a good idea to stop your fast, perhaps doing more shorter fasts to maximize fat burning instead of a longer one which switches back to carbs. Is this true and what do you think?

Dr. Jason Fung [00:02:38] In terms of the carbs, I'm not sure if that's what they're talking about exactly. They said that they are doing a study on fasting, but they haven't published it, so I actually haven't seen the results yet. But what they're talking about is what the Lumen measures. The carbon dioxide in your breath changes according to what your body is burning. It used to be that you had to wear one of those big devices with the big oxygen mask and all that in order to measure it, but now they actually have this very convenient sort of handheld device. If you're burning carbohydrates, it's going to be at a certain level. If you're burning fat, it's going to be at a different level. And that's how it tells - by the amount of carbon dioxide. And then if you're burning protein, it's somewhere in the middle. So what happens is that, when you fast, you're switching from burning carbohydrates, usually, to burning fat, so you see that switch in the exhaled carbon dioxide which is measured in the breath. There is a period called gluconeogenesis where-- so as you get to

sort of 16 to 24 hours or so, you get this gluconeogenesis. And I go over it in that video on YouTube called The Five Stages of Fasting. So your body starts by burning off carbohydrates or glycogen, and then there's a period in between where the glycogen sort of finishes and when you start fat burning, which can differ in people, right? So some people switch into fat burning very quickly and other people take a little while. So if there's a gap between where you're burning carbs and where you're burning fat, if there's a little gap, then the body uses that and burns protein. And it used to be thought, oh, that's really bad, you're burning muscle, but it's not. That probably is actually the area where you're undergoing some autophagy, which is where you're actually burning some of these subcellular organelles. And remember a lot of protein is not muscle. It is a lot of connective tissue, it's skin, it's that kind of thing. So burning connective tissue is not a bad thing because then what happens, of course, is that the growth hormone goes up, and then, when you do eat again, your body's going to say, "Well I need more of this, more muscle, more this and that," but what is not needed has been taken away. That's why we don't see the problems with excess skin as much.

[00:04:51] So what the Lumen does is it can detect that because of course if you're not burning fat, then you may see that you're sort of going back into sort of protein, the gluconeogenesis period. And whether this is good or bad, we don't know because we've never had this sort of data before. They're suggesting that, maybe at that point, if you sort of went to fat and then now you're back into a little bit of protein, that maybe you should stop it at that point. There's really not enough data to say yes or no because-- I'd have to see the data on the studies. It's certainly possible. And because there's a lot of individual variation-- because, you know, a lot of these things differ from person to person. You do these sort of averages, like, you know, at 16 hours, at 20 hours this, but if you're on like a ketogenic diet, you have no glucose, so you actually are ketogenic, even not fasting. So you're burning fat even when you're not fasting. So, therefore, a lot of these things can vary person to person. And that's where the Lumen can sometimes be useful because it allows you to measure it.

[00:05:50] So whether somebody might benefit more from shorter fasts more frequently, that's a possibility. You know it's good because, one, they're getting the data of what happens to the expired carbon dioxide when fasting. And then they're going to try to see how that can correlate to sort of tweaking it to your own body, because everybody's body reacts differently, even to different foods, right? People react very differently to different foods. So, while we can give you the average - on average, this is what happens when people-- you know, you have to do these things, these personalized things like the CGM, for example, or the Lumen is a different data set, right? I think there's a potential, real potential for it to be useful.

[00:06:36] And they talk about this thing called metabolic flexibility (I don't know if people have heard about this), and that's how easily your body switches from glucose to fat and back, right? So that's something that you really can't measure on a CGM, which measures blood glucose, but might be able to be measured on a Lumen device, which is measuring sort of what your body actually is burning. So perhaps there could be some way we can tweak it, but the studies actually are not-- you know, I think they have a hypothesis there, and I've heard that they're doing the study and it will be published, but it hasn't yet.

Lisa [00:07:09] Yeah, I had one and I used it for quite a while (I no longer use it), and I found it quite insightful on things that I needed to know. And I also lent it to my trainer, and it got him to change what he ate in the evening, to increase his fat and lower his carbs, so that he would be burning fat in the morning. So it was useful for him. He doesn't do any

fasting other than time-restricted eating, but it was helpful. So, it depends on what you're looking for, right?

Dr. Jason Fung [00:07:40] Yeah. Yeah, exactly.

Lisa [00:07:42] Yeah. I wish we had something that said, "You need to fast longer. You need to stop fasting." [laughter] That would be great.

Dr. Jason Fung [00:07:47] Yeah, and the more data you have, the better. So that's where I think these things are useful. You know, just like CGMs, there's a lot of people out there saying, "Oh, nobody should be wearing these." I'm like, "Why? It's just a data point." And what you do with the data, like, whether you overinterpret the data is one thing, but data is just data. So it's great to have if you know how to use it. And the more people that do it, the more we'll know how to use it, right? So that's why I think these people-- and it's always the dietitian who says that, right? "Oh, nobody should be wearing a CGM, right? It's going to make them paranoid." It's like, no, it's like having a home blood pressure monitor. What harm does it possibly have? You know, now we pick up a lot of people's blood pressures much earlier than we used to, because we know what it is. If you don't measure it, you don't know it. So I think these sort of things certainly do have their place. It's a little bit on the pricier side, the Lumen, but you know, again, it's up to you if you want to try it.

Lisa [00:08:43] Test don't guess, right? [laughter].

[00:08:46] This person says here, "I have heard conflicting reports about lemon in water and herbal teas breaking your fast. Do you feel that they interfere with autophagy if that is your main goal?"

Dr. Jason Fung [00:09:00] So, certainly, water, no. Water fasting is not going to affect autophagy. So the main thing that affects autophagy is protein. So protein turns off autophagy because, again, remember that autophagy is this state of sort of cellular maintenance and repair. So when you're not eating, then your body, instead of focusing on growing, switches and focuses on maintenance and repair, and that's why it's useful. Not that autophagy to you all the time is necessary, it's just that, most of the time, people these days haven't fasted long enough to get into autophagy. And restricting protein is also a little problematic because you do need protein in your diet. So very low-protein diets are generally not that well advised. So, therefore, the question is whether or not this herbal tea has much protein in it, because that's the main thing that's going to stop it. So it doesn't really. Like, perhaps there's a tiny bit of protein, but my guess is that there's so little because tea doesn't have a lot of anything. So it's mostly water and then whatever flavor compounds you get from steeping the tea leaves. So there's probably a little bit of protein in there, because otherwise it'd be water, right, but, you know, it's got to be pretty small. Like, the total amount compared to eating, like, you know, a steak or something, it's going to be tiny, the amount of protein. So, therefore, even if you do sort of get a little bit of protein, it's fine.

[00:10:23] Something like bone broth is different because bone broth probably does have more protein, although still not nearly as much as eating a hamburger sort of thing, but, definitely, there's going to be some because you're boiling the bone. So you're going to get a lot of nutrients like minerals and stuff, but you're also going to get some of the proteins that come out of that. Not a lot. So, generally, for herbal teas, I would say, no, it's not going to affect autophagy.

Lisa [00:10:49] Okay. I like this question. "Is it known if there is an order in which fat is burned during fasting? For example, the recently-gained fat burned first over the older, more stored fat, or visceral versus subcutaneous."

Dr. Jason Fung [00:11:08] So, in terms of old versus new, no, there's actually a constant flux of fat. You know, it's not like, you know, a basement where the stuff that goes in first gets stuck in the back and then comes out last. It's not like that. There's actually a constant flux so that it's always coming in and out. So even if the total amount of fat is the same, it's always going in and out of the fat cell. So, therefore, any fat you burn, new versus old, it doesn't really matter which one is burned first.

[00:11:36] The question of visceral versus subcutaneous is very important because the visceral fat is much more dangerous to your health than the subcutaneous fat. So the fat that's stored in and around the organs is going to be much more dangerous to you than the fat that's carried underneath the skin. And that's why there's a lot of people that say, "Well, you can be fat but fit," for example. And that's absolutely true because, if you're carrying mostly subcutaneous fat, then it's not a problem. So, you know, the nuance gets lost because most people can't differentiate between visceral versus subcutaneous fat. But you have to understand that fat in a fat cell is okay, that's where it's supposed to be. Your body is able to handle it. It's just a store of calories. So it's the subcutaneous fat that stores that fat. It's fine. It doesn't have any detrimental health effects. That's why when you do liposuction, it has no health benefits, because all you're doing is vacuuming out the subcutaneous fat. So it's for cosmetic reasons. But removing that fat has no benefits in terms of diabetes, you know, heart attack, strokes, any of that. So that's the subcutaneous fat. It's totally fine. The visceral fat is not because that is what causes metabolic syndrome and causes all that other stuff.

[00:12:47] Luckily, when you do fasting, the visceral fat tends to come out much easier than the subcutaneous fat. And it's just because it's sort of closer, right? So a lot of the liver fat, for example, that's the real problem, is all that fat in the liver. You get that with type two diabetes, a lot of people with fatty liver. When you don't eat, your body is going to need to-- you know, once it's gone through the glycogen, then start to burn the fat. And the fat that's in the liver is like sort of right there, so that just sort of takes it. So we can see, when they do studies on short-term fasts and preoperative fasting and stuff, you know, what they find is that the visceral fat tends to come down much faster. So, for example, they did this one study where they put people on very low-calorie diets. It wasn't fasting, but it was very low-calorie diets. And they'd have, for example, a 2% decrease in body weight, but you saw like a 20% decrease in liver fat, for example. So a big discrepancy because the body is going to use whatever is most readily available. And the visceral fat, luckily, is the most readily available.

Lisa [00:13:53] Okay. All right. "My doctor is not necessarily discouraging fasting, but is dismissive of it as another means of cutting calories. How can I explain, in like a short, elevator-ride speech, why fasting works but calorie-reduction diets don't?"

Dr. Jason Fung [00:14:13] I don't know if he can convince anybody [laughter] in an elevator ride, honestly, because the whole idea of calories is so ingrained into people's psyche that they can't see outside of that sort of world view. So the whole point is that fasting, it does a lot of different things, but one of the things is that it is also a way to control the calories, right? So, certainly, it's about the calories, partly, but it's also controlling some of the hormones that affect the calories, right? So if you do simple calorie restriction-- and I don't know why people can't get it out of their brains, but the idea that

calorie restriction is as good as anything else is funny because every single study on calorie restriction shows that it does not work. Sure, it works for one person, or two people, but, once you get more than a few hundred people in a study and you start putting them on calorie restriction for a couple of years, it virtually never works. It works for six months, right? So everybody loses weight in six months. Any study you do, everybody lose weight in six months. And that's why they say, "Well, you know, it's just from the calorie restriction." You know, the whole idea is that-- you know, sometimes I use an analogy. I say, well, the idea is not-- it's not that it's about calories in, calories out. Like, yes, in the end it is about calories in, calories out, just like if you're alcoholic, it's about alcohol in versus alcohol out, but that's just the sort of proximate cause. That's just the sort of thing that comes right before. So it's like you can't solve alcoholism by saying, "Just drink less alcohol," right? The question is why is alcohol in greater than alcohol out? And the reason is maybe they're depressed, maybe they have post-traumatic stress disorder, in which case you need to treat them with counseling, right? You don't just say to them, "It's all about willpower, man. You know, just drink alcohol." Like, oh, I just solved world alcoholism. Or cocaine - it's all about cocaine in versus cocaine out. So, hey, I just solved world drug addiction. "Just take less cocaine." Like, that's the stupidest advice I've ever heard, but yet people think the same thing of calories. Since it's all about calories in and calories out, therefore, the answer is eat less calories. Well, you know, did I just solve world alcoholism by saying, "Just drink less alcohol?" or did I solve world drug addiction by saying, "Just take less heroin?" No! What you have to understand is what is driving the alcohol in greater than alcohol out, or what is driving the heroin in greater than heroin out? Addiction, for example.

[00:16:55] So if certain people are food addicted, that is driving their calories in greater than calories out. Or if they're eating too often, it's driving the calories in greater than calories out. So you need to control what the ultimate cause is, which is the food addiction, for example. You control the food addiction (and fasting may be, certainly, one way you control food addiction), and that's going to make calories in less than calories out and allow you to lose weight, right? It's not that calories in, calories out is wrong. It's just highly, highly, highly simplistic, right? Or it's like, you know, you get rich because money in is greater than money out. Hey, I just solve world poverty, everybody. You know, it's like, oh yeah, yeah, that's great.

[00:17:37] I just don't understand how people can be so stupid to think that the calorie story is the be all and end all, right? That's what boggles my mind because in no other setting do we accept that simplistic, sort of, 'so simplistic as to be stupid' answer as the correct answer, right? So I didn't solve world poverty, I didn't solve world drug addiction, I didn't solve world alcoholism by saying those stupid things, yet people think that, "Hey, I solved everything I need to know about obesity, this complicated disease of obesity, by saying, 'Eat less calories.'" So, you know, it's a long conversation because I think that people just get so sort of focused on it.

Lisa [00:18:25] I know, for me, when I weighed 160 pounds more than I do right now, I was hungry all the time, and I never questioned why was I hungry all the time, you know, because I was burning glucose all the time.

Dr. Jason Fung [00:18:39] Yeah.

Lisa [00:18:40] You know, my insulin was up, so I never questioned that.

Dr. Jason Fung [00:18:43] Well, that's the thing, right? It's like if the hunger is driving your calories in greater than calories out, you've got to deal with the hunger, right? And that's what Ozempic does for a lot of people. So I have no problem with it, but that's what I mean, right? Everybody who's focused on calories is so focused on the wrong thing. And then every time something comes up like, oh, say you have ultra processed foods, right, which leave you hungry, actually. So you take ultra-processed food, which often leaves you hungry or are designed to make you eat more, right? So ultra-processed food, or hunger, or eating too often, or food addiction, those are driving your calories in greater than calories out, yet people want to focus on the calories and say, "Oh, I don't care about hunger. I don't care about ultra processed food. It's all about calories," right? It's like, okay, well, that's like saying, "I don't care about addiction. It's all about heroin in versus heroin out. It's all about cocaine in versus cocaine out." Does anybody talk like that in addiction medicine? Does anybody talk about that in alcoholism? Alcohol in minus alcohol out. It's like, God, it's so stupid. [laughs] Like, certainly, alcohol in minus alcohol out is stupid. But, yet, calories in minus calories out is not stupid? Like why can't we focus on what's driving the calories, what's driving the alcohol, what's driving the heroin? That's what you need to focus on. And it's always this uphill battle because I've been saying this for a long time, and, yet, people still come up to me and say, "It's all about calories." I'm like, "Mhmm." And these are like professional, these are like obesity researchers and stuff, right? Obesity experts - "It's all about calories." It's like, no, not again. That's not-- so it's often a much longer conversation than that. [laughter]

Lisa [00:20:32] An elevator speech - 50 words or less.

Dr. Jason Fung [00:20:34] Yeah, unfortunately. Because you have to break all that, you have to break all those preconceived notions. Whereas with, say, cocaine in versus cocaine out, there's no preconceived notion that you can just say, "Just take less cocaine," and solve somebody's problem. Yet, doctors think you can just say, "Just eat less," and solve somebody's problem. Like, you cannot. That's why we focus on what we do here, which is the fasting as a tool, right? And cutting back of carbohydrates and things like, you know, CGMs and Lumens and all this stuff which gets to the root of the problem, right? So if the foods you're eating is-- you know, there's too much glucose, then you can detect it with a CGM or a Lumen or whatever it is, right? Or you can cut your carbs, or you can do this, right? So it's all about finding out what works for you?

Lisa [00:21:22] Yes. In fact, one of our questions is, "What are your thoughts on GLP-1 drugs in conjunction with fasting?"

Dr. Jason Fung [00:21:30] Yeah, I don't have a problem with GLP-1 drugs because, again, they deal with the issue of the hunger. Now, they deal with it in a non-physiologic way. That is they increase GLP-1, which is-- while it's a natural hormone, the dose of it is much higher than you would normally get. But they take away the hunger, so it helps people. So, certainly, I have nothing against it, but if you rely on that drug-- and this is what happens, right? So the doctor says, "Here take this," and that's fine, but then doesn't follow up with any kind of dietary advice. So while you're taking it it's great, but, when you stop taking it, you haven't learned anything. So you go back to eating your junk food and chips and, you know, whatever it is that you normally ate. You didn't eat those because you weren't hungry before. Now that you took away the Ozempic, if you didn't learn those good dietary habits, then you just go back to it and your weight goes exactly back to where it was. So it's a temporary fix at best. It's a reasonable-- like, to me, it's no different than like a fasting aid, right? It's there to help you with your fasting, but you've got to learn how to do it so that, if you ever come off of it, then you know what you're supposed to do.

Certainly, it's better to do it without than with, but I have nothing against it because it's doing the same thing. If you look at what happens to insulin, insulin levels go way down with a GLP-1 because you're basically nauseated all the time. You don't want to eat. So therefore your insulin levels are going to fall. If your insulin levels are high, then, hey, that's all right. So it's an okay drug, but it's not magic. It works because it takes away the hunger, which is driving a lot of the eating behavior, right? And that's what I sort of said, is that Ozempic-- what it teaches us about weight loss is that it was not about the calories, because GLP-1s and Ozempic don't control your calories. If you want to control calories, then wire somebody's jaw shut, or do something like cut their stomach and do these bariatric surgeries, which are modestly successful at best. What you want to do is deal with the hunger which is driving the calories. So it's an all right drug. I don't have anything against it but, again, if you can do it naturally it is better. And, two, if you're going to take it, then learn the best dietary habits so that, when you come off of it, you have those habits to sustain you forward with your weight loss.

Lisa [00:23:45] Speaking of gastric sleeve, this person says that she's three years post gastric sleeve. "What do you find is the most successful fasting protocols for people that have had this surgery?"

Dr. Jason Fung [00:23:57] Really, there's no one best-- everybody's a bit different, but, certainly, longer fasts are sometimes not possible with bariatric surgery because, you know, you can't hold that much. So if you wind up doing long fasts and then taking only a little bit, sometimes you don't get enough nutrition, just because they cut the stomach so much. So that's why they often tell you to do small, frequent meals when you do these sort of surgeries. So, sometimes, you have to adjust the fasting, so you have to cut it down a little bit in order to get the proper nutrition, because you still need your protein, you still need your vitamins, your minerals, and so on. And if you do the fasting-- I mean, one time, is not going to be a big deal, but when you're doing it for months and months, then, yes, you have to worry about the protein intake and all that sort of stuff. So that's going to limit it. So you may have to do shorter fasts. So, if you do 24, you might have to go down to 16, or something like that. But it's different-- it's going to be different for everybody.

Lisa [00:24:55] This person says, "In your book, The Obesity Code, you explain that a large percentage of obesity is genetically determined." Now, they're thinking that the outcome of the research could also explain by something else, which is that we're getting addicted to sugar before we're even born if our mothers consume sugar. What are your thoughts on that?

Dr. Jason Fung [00:25:19] That sort of thing used to be dismissed as sort of silly, but, increasingly, it's become obvious that a lot of behaviors can be sort of-- even in utero, you can be predisposed to it, for sure. So genes are passed from mother to daughter, or mother to child, right? But genes are basically unchangeable. So when you have a gene, it's the same, like, it doesn't matter, but the expression of that gene, which is called epigenetic changes, still happens. So if you expose somebody to different environments, such as high sugar, which is high insulin, then you're going to be exposed to an environment which is going to change, not the gene itself, but how that gene is used. So it still affects the genetics of the whole situation. So it's certainly possible. I mean, the data is a little bit more sparse because it's often difficult to get data like that. But David Ludwig, a researcher at Harvard, I mean, he's done a lot of data on like weight gain during pregnancy versus weight gain in the fetus and stuff. We see a lot of women who have developed diabetes during pregnancy, they have large babies, for example. And then you can correlate that, later on, to a higher risk of weight gain, for example. So, there certainly

can, but the genetics- you know, the thing about the genetics is that it explains the difference in risk between one person and the next. So if you have two people-- for example, I have two kids and their builds are completely different. So one of them is skinnier and taller, and the other is shorter and stockier and more prone to weight gain. And that's genetics. Like, we can't change that. So it explains the risk of obesity from one person to the next, it doesn't explain the risk over an entire population.

[00:27:04] So if you take the entire population of the world, for example, you see that obesity is increasing. That's not genetics. If you take the population of the United States, obesity is blowing through the roof. That's not genetics, because the genetics just haven't changed that much. China, where obesity has gone crazy, as well. Again, same thing. It's not a genetic change. It's a change in the environment. It's a change in the lifestyle. But to say that my risk of obesity and your risk of obesity can be severely different. They can be extremely different from one another, and that's not due to your fault or mine. It's just that different people have different genetic risk. So when you look at whole populations like, oh, the United States or Canada or Western Europe, and you say, "Okay, if you look over time, obesity is increasing," then you know that you have to change something in that.

[00:27:57] You know, I know lots of people who are just naturally very skinny and nothing will change that. They'll always be skinny. And I think it relates to lots of different things. But I've also observed, for example, some people they eat like three bites and then they're full and you just can't get them to eat. You know, kids are always like this, right? They eat, and then, when they're not hungry, you just can't get them to eat anymore. Like, they just don't want to eat. That's why you're always trying to force these kids to eat and stuff. Whereas, other people are just sort of like ravenous all the time. They love to eat. You know, I have a friend who eats the same sandwich every day because he doesn't really care about what he eats for lunch. He takes, like, you know, half a sandwich and that's it. And he's like, "Yeah, that's it." I'm like, "That's it?" [laughs] You know? And then I have other people who are, like, they love to eat, they love to experiment and stuff. Those are just genetic differences. And they play a role in the risk of weight gain, but the same general principles hold for weight loss. It's just that you can't-- you'll never have the same risk of obesity as the person next to you. It might be higher, might be lower. That's mostly determined, 70% determined, by genes. They can't do anything about it, so it doesn't matter, right? That's why it always drives me crazy when people are like, "Oh, it's mostly genetic," but it's like, yes, it's true, but you can't do anything, so why are you even worrying about it? It's like worrying about your height. Why would I worry about my height? I can't do anything about it. I am the height that I am. I'm not six, five. I'm not six, seven. I'm not seven feet. I can't do anything about it, so I don't even think about it.

Lisa [00:29:27] Hanging upside down on a rack to see if that helps? [laughter].

Dr. Jason Fung [00:29:32] Yeah, so...

Lisa [00:29:33] Nope? It might help your back. [laughter]

Dr. Jason Fung [00:29:35] Yeah, yeah.

Lisa [00:29:37] This person says, "Since fish oil contains no protein and thus should not trigger mTOR, isn't it the best fasting aid as it is both anti-inflammatory and calming?"

Dr. Jason Fung [00:29:51] Certainly, it could be. That's why we do fat fasting, for example, same thing, because fat doesn't stimulate the insulin, it doesn't stimulate the mTOR. It

doesn't mean-- and this is where the keto people originally said, "Oh, you can eat as much fat as you want." It doesn't mean that it's good for weight loss. It's certainly good for mTOR, it doesn't raise insulin, but it doesn't help you lose weight. Because, remember, when you eat fat, it goes sort of directly into the fat stores. In some people, they tolerate it fine because, as the fat stores grow, it decreases your appetite and, therefore, you'll eat less of the other foods, but not in everybody. So they used to say, "Oh, fat is a free food." It's like there's no really such thing as free food. But, on the other hand, it can be useful for those reasons.

Lisa [00:30:36] This person says, "I know, in some studies in the past, they have shown that by not having an up day (I'm assuming they're talking carbs here), after a full fasting day in alternate-day fasting would lead to a decrease in your BMR. Do we still believe this is true? If I did a 48-hour fast and had one meal, and then fasted for another 24 hours right after, and it wasn't difficult for me, am I ultimately decreasing my BMR?"

Dr. Jason Fung [00:31:06] No. You know, those people who try and say those things don't really know because there's really no studies on what exactly triggers your BMR going up and down. I mean, we know that BMR can go up and down by as much as 30 or 40%, but how exactly you do it is always-- you know, that's what everybody wants to know, but nobody really knows how to do that, right? So some people say, "Oh, eat more protein." People used to say, "Eat all the time." People used to say, you know, do this, do that. It's not really that simple and most of it is still unknown. What we do know is that, if you simply cut your calories, almost for sure, that is like the one thing that will for sure cut your basal metabolic rate. It's just calorie restriction. So that's been done for ages because calorie restriction is the sort of standard of most people, so they've done tons of studies on this. So if you cut your calories by 500 a day, you think you're going to lose a pound of fat per week. What happens is that your metabolic rate goes down by 500 per day, and you wind up, after the initial part, not losing any weight at all. And then you think, "Well, how can I be eating 500 less calories a day and not be losing weight?" These are where the calorie people just go off the rails because they're always like, "Well, if you eat 500 less, for sure, you'll lose weight." No, because it's calories in, calories out. If your metabolic rate goes down by 500, then you will certainly not lose any weight because both have gone down. What they do is they assume that basal metabolic rate stays steady. It does not. For sure, it does not. Like I said, every single study in the last 50 years has shown that it does not. So the whole idea of just cutting calories is entirely based on a fallacy of stable metabolic rate. But it's not because, as you lose weight, by whatever method, actually, your basal metabolic rate will go down. So if you cut calories, particularly just by cutting fat and eating a lot of high-insulin foods, it also won't go down. So what's the answer? I wish I knew. I wish I could have a simple thing - eat more protein or eat more of this. It's actually not quite that simple and nobody really has a good idea. We know it happens with calorie restriction. That's why calorie restriction doesn't work. But what does work? We don't know. We know that, in some studies of fasting, the basal metabolic rate is maintained better. And that might be because of the sympathetic tone, but that's not the entire effect, because anything that makes you lose weight actually does reduce that basal metabolic rate.

Lisa [00:33:50] Thank you so much, Dr. Fung, for taking the time to answer our questions today. For those of you who asked about-- some of you were sending in questions about protein. Megan did the whole month of May, almost every single video was on protein. You can find that under Past Webinar Q&As. Some people are asking about how to test for insulin. Megan also did a presentation on that under Past Webinar Q&As that will tell you how to check for insulin resistance. And I think Dr. Fung's mentioned it in some past Q&As,

too. So thank you so much Dr. Fung, we really appreciate it. And I guess I'll see you next month then.

[00:34:27] Okay. Thank you. Bye.

[00:34:29] Thanks. Bye.