

## The Fasting Method #149 - Fasting Q&A with Dr Jason Fung: Broccolini, Metformin, Exercise and Weight Loss, 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] Hello, everyone. How are you doing? I'm Lisa Chance. 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 a few weeks after our Community members. This is a monthly Q&A with Dr. Jason Fung where he answers questions submitted by our TFM Community members. Since it's recorded, it may also be found (by our members) to watch and listen to under our 'Resource' section, under 'Past Webinar Q&A's'. And just a reminder to you, Dr. Fung cannot give out personalized or medical advice, but your fasting and nutritional questions he's happy to answer. So, Dr. Fung, welcome. Hello.

**Dr Fung** [00:02:11] Hi, how are you?

**Lisa** [00:02:12] I'm good. Good to see you.

[00:02:14] This first question is about your amazing book, The Cancer Code. And this person says, "I haven't read it yet, but I wanted to hear your thoughts on broccolini being an anti-cancer food. I understand it contains sulforaphane, Indole-3-Carbinol, which is I3C, glucosinolates, vitamin C, and fiber. Should I concentrate on cruciferous vegetables like broccolini or just work at getting a balanced diet? What are your thoughts?"

**Dr Fung** [00:02:47] Yeah, so, you know, specifically with regards to the cancer risk, I mean, the idea with cancer is that it's not specifically like a vitamin deficiency or anything like that. And one of the things is that it's more of a reaction to chronic injury. So anything that helps it is better, and anything that doesn't help it is not good. The other thing is that things that help promote growth, like insulin (insulin is a growth factor) also are not good, so broccolini, in that sense, might be advantageous just as a natural food. You know, it can help in terms of weight loss because it's less problematic than high carbohydrate, highly refined carbohydrates. It's hard to link any specific food to anti-cancer risk. I know a lot of people like to do that because it sells books and subscriptions. Like, "Eat this and prevent cancer," but there's actually very little data to say, for any specific food-- you know, when they look at large groups of people, they say, "Well, people who eat a lot of broccoli, they tend to have less cancer," but they're generally a lot healthier in a lot of other ways, too.

So, therefore, it's-- you can't say it's just the broccoli. Maybe it's just what they eat, like emphasizing whole foods, for example, is one way of really reducing your cancer risk.

[00:04:09] When it comes down to it, the big risks are obesity. We know that there's a lot of obesity associated cancers (that's a term that the World Health Organization uses), so broccoli may be beneficial from that way. The sulfur-containing compounds in broccoli are thought to be quite healthy, and that's what sort of gives them a little bit of a bitter flavor if you don't cook them right as well. But, you know, I wouldn't concentrate specifically on those foods other than whole foods in general. And vegetables are very good in a lot of ways. So on the one hand, I agree with you. I think that broccolini, broccoli, cauliflower - I think those are all really great foods. Do I know for sure that that's going to reduce my risk of cancer in the future? There's not a lot of data, but if it helps maintain a healthy weight, then it is likely going to help reduce your risk of cancer.

[00:04:59] Where things always fall apart is that somebody always says something like, "Well, people who eat a lot of broccoli are generally very healthy, so it must be the sulfur-containing compounds." So somebody always says, "Let's make a supplement of just these things." They do that for all kinds of stuff, things like resveratrol and all that sort of stuff. And it never works. Whenever they take it out of that food, it doesn't ever work.

**Lisa** [00:05:21] Whole food, real food. I think that's the key. [laughs].

[00:05:26] This person says, "I have a little confusion about the difference between taking metformin and injecting insulin. From what I've read in your books, insulin is going to make type two diabetics worse in the long run, and I already know that that's not the answer to reverse type two diabetes. I'm not taking either one of those but my question is, like insulin, will metformin also be detrimental to treating type two diabetes, or is there a difference between one or the other? And if so, please tell me why."

**Dr Fung** [00:06:01] Yeah, so insulin and metformin are both standard drugs to lower blood glucose and, for a long time, people thought that that was the most important thing in terms of type two diabetes treatment. But it's actually not because the thing about insulin is that-- so insulin is just a natural hormone, but, like any hormone, levels that are too high are bad and levels that are too low are bad. So if you have too low insulin levels, that's type one diabetes. If you have too high levels, that's type two diabetes. So if you have levels of insulin that are too high and you take more insulin, then your disease is not getting any better. So, yes, your sugars may get better, but your disease doesn't really. Metformin works in a different way, and the exact mechanism is not entirely known, but it's thought to help reduce the glucose that comes out of the liver, basically, right? So if you take insulin, insulin's job is to take sugar from the blood and sort of push it into the body, into the cells of the body, and the cells are supposed to use it for energy. If the cells have enough glucose, well, you can still shove more in by giving more insulin, but it doesn't solve the problem, which is that your body still has too much insulin. So if you think about a sink, right? If it's full and you pour water in from the tap, it's going to overflow. What insulin does, of course, is, in your body, if you have too much sugar and you put more sugar in, it's just going to flow out and it's just going to be noticeable in the blood. Therefore, when you have high blood sugars, then they say, "Well, you have type two diabetes." If you simply take that sugar and just shove it back into your cell, that's going to make your blood sugars look better, but it's not going to relieve the problem that your body is full of sugar, right? It's going to make it worse because you're taking sugar and shoving it in. So, therefore, what happens is, over time, that insulin is going to cause weight gain because you're taking all this sugar, glucose, you're shoving into the cell, the cell turns it

into fat, and you gain weight. So if you think about what happens with type two diabetes when you treat it with insulin, is that your insulin level is already too high, and your blood glucose goes up. You take insulin, you gain weight. As you gain weight, your type two diabetes is going to get worse. As your type two diabetes gets worse, you need a higher dose of insulin, which makes you gain more weight, which makes your type two diabetes worse, which means you need to take even more insulin, which makes you gain even more weight. And it goes on and on and on, right, because you never actually solve the actual problem.

[00:08:36] It's no different than if, for example, you have garbage and you need to throw it out, you need to get rid of it or not generate it, but instead you just shove it under the sink, right, so you can't see it. And you say, "Well, it's all better," right? That's what insulin does. It takes the glucose, shoves it somewhere that you can't see it, and then you can pretend it's all better. Metformin does something a little bit different. It really has to do with hepatic glucose production, which is that normally the liver is not supposed to be releasing glucose at a time when, you know, when your sugars are high, right? You don't want your liver pushing glucose out when your sugars, blood sugar's already too high. But in type two diabetes, that's what's happening, right? Your body's so full of sugar that you're sort of releasing, releasing, releasing. So it stops that and, therefore, the blood glucose doesn't go up as high. It doesn't cause weight gain. So it tends to be relatively neutral in terms of type two diabetes and so on, as opposed to the weight gain you saw with insulin. So they work differently. They're two different drugs. But the bottom line is that, if type two diabetes is a disease where your body has too much sugar (not the blood, but the whole body has too much sugar) and it's overflowing into the blood, then, if you're not getting rid of the sugar, you're not really doing any good for the diabetes. So insulin doesn't do any good. Metformin is sort of neutral, weight-neutral at least, and it doesn't really do any good. So that's why when you look at studies of metformin, you can't find any studies that say that taking Metformin helps reduce risk of heart disease or stroke or anything. There was one the UKPDS [UK Prospective Diabetes Study] did, like, I don't know, 40 years ago? That was the last study and, of course, that's a whole different time. You know, 40 years ago is a long time ago. And that was the last study that might have shown some benefits. And since then, there's been zero studies showing that metformin has any benefits. Why? Because it's not taking care of the root cause. Your body has too much sugar. If you're not getting rid of it, you're not doing any good.

[00:10:40] So you contrast that to the newer medications now. So one called the SGLT2 is where you actually pee out the sugar. So if you think about it, the body has too much sugar and now you're peeing it out. Well that's good. So what you find is that you actually have people who take those drugs and have less heart disease, they have less congestive heart failure, they have less kidney disease. Why? Because you're getting rid of the sugar, and it's all that sugar that's damaging your organs. Or you look at the Ozempics and the GLP-1s. What do they do? Well, they make you a little nauseated so you don't feel like eating, so you're not putting sugar in your body. So, again, if your body has too much sugar and you're stopping yourself from taking it because you're nauseated-- I mean, that's a whole other discussion. There's all other side effects, right? So, obviously, it's better to do it naturally, but, you know, on the other hand, you see all kinds of benefits to these GLP-1s - heart disease, kidney disease, congestive heart failure. It's the same thing because you're actually dealing with the problem. The body has too much sugar. You're stopping it, either by peeing it out or not taking it in. So insulin and metformin - they work differently. They're different drugs, they have different mechanisms of action, but neither of them really affect the sort of core problem of type two diabetes, and that's why they have--

they've been around for ages and it really has never shown any benefits to your overall health.

**Lisa** [00:11:57] I really liked your presentation (your YouTube video) on Ozempic. That was really good. I listened to that this morning.

**Dr Fung** [00:12:04] Oh, thanks.

**Lisa** [00:12:05] Okay, so, "What do they mean by immunoreactive insulin?"

**Dr Fung** [00:12:11] It generally refers to a term that-- it's a lab term, basically, so it's not really an insulin. So, insulin-- there's lots of different types of insulin and some are longer acting, shorter acting. They tweak the insulin. 'Immunoreactive' generally means that it reacts in the body with insulin. So the main one-- there's actually a number of them, but the main one is IGF-1 (so Insulin-like Growth Factor 1) and that's a different molecule but it actually shares a lot of similarities to insulin and, therefore, can react at the same receptor sites. So that's why they call it immunoreactive because it reacts at the same sites as insulin. So it's mostly a lab term, but basically denotes a lot of different types of hormones that are very, very similar to insulin, which is sort of the name itself - insulin-like growth factor. So it's not insulin, but it's very similar to insulin. It's quite important. I did a YouTube video on IGF-1, as well, because it seems to have quite an important role in a lot of diseases.

[00:13:06] So, insulin-- you know, we all think of insulin as a metabolic hormone. So, you know, you eat, insulin goes up. So it's a nutrient sensor; it tells your body that food is coming in and that you should store some of it, right? So that's neither good or bad. If it's too high, it's bad. If it's too low, it's bad. But insulin itself is a normal hormone. What's interesting is that, if you look back from evolution, it's actually one of the most ancient hormones that is available, and, sort of primitive organisms didn't use it as a metabolic hormone, they used it as a growth hormone. So that's why there's this link between nutrition and growth. So it actually makes a lot of sense because, as organisms grow, you only want to grow if there's enough food to eat to sustain your growth, right? So, if you're in the middle of the desert, you want to be small. You don't want to be huge because there's just not a lot of food. So if you're massive, like a big bear or something like that, you won't survive because you just can't get enough food to survive in the desert where there's very little food. So you have little small lizards and so on who don't need a lot of food. So that's why there's this link between nutrients and growth. The issue is that a lot of diseases are related to excessive growth. So everybody thinks growth is good, but it's not. Growth is actually only good in the first couple of decades of life. After that, growth is generally very bad. So cancer is the prototypical disease of excessive growth and, you know, very bad. So insulin plays a role because it's a growth factor. So if you're telling cells to grow, cancer cells are going to be able to grow. So IGF-1 is-- it's an interesting thing. But that's what immunoreactive generally refers to.

**Lisa** [00:14:51] Thank you. "Does the liver respond negatively to the ingestion of supplements? In other words, do the supplements cause any change in my insulin." I thought that was pretty broad. [laughs]

**Dr Fung** [00:15:05] Yeah. Generally not. I mean, there are certain supplements that are supposed to have an effect on, say, blood glucose. Things like, some people say, cinnamon is very useful, some people say bitter melon. So you see some of these supplements for diabetes, for example. I mean, there's different ones, obviously, but most

of them don't. So most multivitamins (vitamin A, B, C, D), most of them have no effect whatsoever on the liver or insulin, but there's a few that seem to affect blood glucose, the most popular being bitter melon and-- what's the other one that they use? bitter-- there's two bitter vegetables. I'm blanking on the other one, but they're sort of traditional foods. So, we eat it in Chinese cuisine - bitter melon - quite often. I don't like it. It's very bitter! [laughs] My father-in-law really loves that stuff. But it's a popular supplement because it seems to (in some people) really lower blood glucose. And cinnamon is the other one. Some people find that cinnamon is very helpful. The studies are not as positive, but it's interesting because, likely, what happens is that there's a big range of response. So some people happen to be very responsive to bitter melon and they'll actually have a lot-- like their blood glucose won't rise nearly as much. Then some people, I think most people probably, have a very, very mild response to it, so it has little of any response. But, once in a while, you see somebody and they're like, "Oh--" Because I hear this all the time. Turmeric's the other one, sometimes some people say it really, really helps them. So I guess, for example, that if ten people took bitter melon, or bitter melon supplements, that nine of them wouldn't notice any difference, and one of them will say, "Wow, that really just made a huge difference for me," right? So they'll come in and I'll see it and I'll be like, "That's amazing," right? But for most people it doesn't. And that's probably just due to genetics and so on. Some people are very sensitive to bitterness, and perhaps it affects the appetite centers in the brain and so on. So there's different ways it can interact. So, for example, you know, like Ozempic can affect areas of the brain that cause you to not want to eat. So bitter melon may have a very strong effect in some people, and most people it just doesn't have any effect. So, supplements in general have no effect. The standard ones, you have to really be very specific in terms of what supplements you're looking at and, also, there's probably a very wide range of personal response to it.

**Lisa** [00:17:34] And I believe if you're getting a home test of insulin, they have you not have any biotin for 72 hours before it's drawn. I think? If I'm remembering correctly. I don't know if that interferes with the test.

**Dr Fung** [00:17:48] I'm not sure. I haven't seen the home insulin test. I mean, I usually have this-- we do a fasting insulin at the lab and they don't really specify that, but it's potentially true.

**Lisa** [00:17:59] Yeah. Underneath Dave Feldman's-- what is it called, his lab? Own Your Own Labs. I think the criteria is, you know, not having any biotin 72 hours before. So that's interesting.

[00:18:11] This person says, "I started TRE, beginning in January of this year, at about 135 pounds, and am now doing 24-hour fasts with OMADs and 2MADs. I've completed my first 42-hour fast and will probably try another this week. I'm eating whole foods. Avocados are my miracle food. I do not snack between meals. My body is releasing weight with what I'm doing now. When will I know that I am ready to stop? That I've hit my goal? I feel that I have about another 5 pounds to go, but how will I know?"

**Dr Fung** [00:18:49] Well, you don't really know. Like the only things that are sort of well-established, in terms of cardiac risk, are the sort of standard things. So you can look at waist circumference, for example. So we want to maintain a waist circumference that is less than half your height, is the sort of rule of thumb, right? So if you are, say, 5'6" (that's what, 66 inches), then you want a waist circumference of 33 inches, right? And the risk goes up the more that goes up. So if you're 66 inches tall, 33 would be half, but if you're, say, 40, then your risk is significantly higher, and that's been fairly well established. If it

goes really, really low, of course, that's the same, but we see less of that problem. So that's a well-established thing. So you can look at that. You can look at body mass index. It's a much weaker predictor. So, you know, a lot of people use it, but it's actually not that good because there's no difference between muscle weight and fat weight, for example, right? It only measures weight, so it's not as good, clearly. You can look at things like hemoglobin A1C. You can look at things like hypertension, and your triglycerides, and cholesterol panel. So those are all sort of well-established. You know, some are invasive, some are not invasive, right? Some you have to do a blood test to get your triglycerides. Your triglycerides and HDL are much more important than the LDL (which everybody seems to worry about). But really, when you look at large groups, it's clear that the risk of heart disease is much better predicted using triglycerides and HDL. If you look at metabolic syndrome, the definition does not use LDL. It's all HDL and triglycerides for that same reason.

[00:20:32] So those are the sort of-- you know, that's how you know. And those are all very sort of standard procedure. It's not hard to get any of those measurements, right? Waist, weight, blood pressure...

**Lisa** [00:20:44] All the health markers.

**Dr Fung** [00:20:46] Yeah, all of those. They've been used for decades, right? So any lab can do them, you can get them anywhere. So that's generally what I go on because those are the most-- You know, the thing is that, when people try and study stuff, like when you get these programs like, you know, these longevity programs and stuff, they'll use serum this and that. And it's like, who knows if that's of any use! They measure all kinds of stuff because they, you know, they really want to sell you on, "Oh, we're measuring everything." You've got serum rhubarb, and, you know, this, and vitamin levels, and so on. None of those have been established as good markers of cardiac risk and other risk, right? So, you know, same thing with cancer risk. There's a whole lot of people who want to sell you on all kinds of markers that are not well established. I mean, there's people who make huge companies selling all this fancy stuff, you know, saying, "Oh, you're not going to hear this anywhere else." It's like, well, that's because it's not-- there's not that much data on it, right? Whereas things like waist circumference and HDL and triglycerides, they're very, very well known and they don't cost anything.

**Lisa** [00:21:54] So this person says, "Can you clarify the role of physical activity and exercise in weight loss? In The Obesity Code, you shared that a number of rigorous clinical trials demonstrate that exercise contributes minimally, if at all, to weight loss. However, zone 2 exercise is promoted as its fat burning benefits. I plan to continue exercising for all its health promoting benefits, but I would really like to hear your take on the extent to which it can assist with weight loss, and what exercise types you recommend." I know, for me, you personally told me to start lifting weights to help with my metabolism. So thank you Dr. Fung, I love it. I never lifted weights before in my life and my trainer always says I'm a natural. And I said that's because I never learned the wrong way. [laughter] I learned the right way from him. So thank you for that. I feel amazing doing it.

**Dr Fung** [00:22:49] Yeah. And the thing about exercise is that it's very, very good for you in a lot of ways, right? There's a huge number of ways. So the thing is that, when you exercise, you're going to build muscles, right? So that's good because loss of muscle is a really important risk factor for like disability generally. So if you don't have muscles, then your balance is not as good because your muscles hold the balance. It's good for flexibility, it's good for toning, it's good for the bones. So again, same thing - if you don't put your

bones under stress, they never get stronger. Muscles grow bigger when you stress them. Bones get stronger when you stress them. Same thing, right? So that's why I always think it's very, very important to do it. But for weight loss, specifically, you can lose weight with exercise, but it's very much less efficient than having the right diet, right? So I'd say like 90% of the game is diet and 10% is exercise. And you see this, right? I mean, you have people in Japan and China and Hong Kong where the exercise culture is far less rigorous than it is in North America. In fact, if you look at North America, we do sort of more exercise than practically anybody in the world. But if you look at how other places in the world do it, it's like they don't exercise, but they move a lot more, right? So in places like Italy, they walk all over the place or, you know, in a lot of places in Asia, they're just more active overall.

[00:24:20] But the thing about exercise is that, for weight, it generally is not that effective a way to lose weight. And there's a lot of reasons for that. One, for example, is that it's just, you know, even looking at how much energy you burn during exercise. It's just not a lot, right? You're exercising your muscles, which is good for the muscles, but it doesn't really do anything for insulin, for example, which is one of the big hormones, because how much body fat you carry depends on your hormones. It depends on how much insulin you have and that kind of thing. So it's hard because everybody sort of thinks that exercise and diet are sort of like 50/50, right? But it's more like 90/10 for weight loss, right? Exercise has huge, huge benefits for all these other things. So as, you know, a stress reliever. You know, it's muscle building, bone building. Like, there's just a lot of reasons that you really need to keep active. Like, whether you exercise or not, you have to stay active. But it's-- for weight loss, specifically, it gets touted as this huge thing, and it's not. I mean, zone 2 is good, again, for a lot of reasons because, if you're doing zone 2, you're stretching the ligaments, your stretching your tendons. Again, putting stress on that is going to strengthen them. You're going to strengthen your muscles. So you are going to do a lot better for it, but the weight loss of it is small. Yes, you can exercise your way into weight loss, but there's been so many people who have tried that. And I remember a bunch of documentaries on these marathoners who are all trying to lose weight, and it's called, I think, 'Brittany Runs a Marathon' or something, and she basically didn't lose any weight. It was very interesting. So you go in there-- so if you go into a marathon thinking, "I'm going to lose weight, because if I do a marathon of course I'm going to lose weight," people are sorely disappointed. They are healthier, clearly, but the weight loss is not there.

[00:26:16] So, that's where I say you have to be careful about what you're doing it for and why you're doing it. If you're doing it for health reasons, then absolutely you should. And the different exercises just have different benefits, right? So if you do a lot of zone 2, then that's going to benefit you in ways that high intensity are not, right? So high intensity is going to build a lot stronger muscles, whereas zone 2 is going to build muscles that are able to go for a long time, right? So that's going to help in terms of the ligaments and the bones.

**Lisa** [00:26:51] Right, yeah.

**Dr Fung** [00:26:51] So it's not like one is better than the other, it's just they do different things. So you have to really try and do all of them. You know, which sort of makes sense, right? If you're practicing basketball, it's not going to particularly help your swimming, right? They're just different. I'm not saying basketball is better than swimming or swimming is better than-- They're just different. So it all depends on what you want. For most people, I generally recommend sort of doing a variety of stuff and sort of 50/50. So, longer sort of cardio, because remember in the 70s and 80s it was all about cardio, right? That was the

whole thing. So you've got all these runners and stuff, but it was all cardio. So you never got the benefits of improving strength through weight training. That kind of got de-emphasized from a heart standpoint, right? It was all about heart health. Then it sort of went the other way and everybody was doing high intensity. So now we're sort of back to a balanced sort of message.

[00:27:49] And I think it's also useful to do other things, doing team sports, for example, or things with other people. That benefits beyond just the exercise, but the mental, the companionship, that kind of thing. So being on a team, for example, is a different experience. It's a bit easier to be accountable if you're playing on a basketball league. So, here in Canada, we have a lot of these hockey leagues for older people, right? They're great. They get out there, they exercise, but then they all go hang out afterwards, right? So you're keeping a lot of social connections alive and all that kind of thing. So there's different things, right? So, you know, getting out there and going four hours on a bicycle is great, but there's other things, also. You're not developing-- since you're not putting stress on your bones, you're not developing your bones so much since you're not-- maybe, if you're riding by yourself, you're not developing the social aspect so much. So they do different things and you really have to look at what it is. I'm not trying to say you shouldn't exercise, and that's why I'm always a little bit cautious. I'm not-- I'm always saying like, you should exercise, but the weight-loss part of it is just not there. I went over it in a recent blog post, as well. Scientifically, it's just not that strong because, if you exercise a lot, you tend to get hungrier afterwards so, therefore, that's going to negate some of it. You're not burning a lot of energy or calories, so that's going to negate some of it. And also if you do a lot of exercise, like high, high level exercise, your metabolic rate tends to go down as your body tries to contain you from using too much, right? So there's a few reasons why it's not so good for weight loss.

**Lisa** [00:29:22] For the first time after I'd started this program, I was walking on the treadmill at the gym, and I realized later that night when I went to go to bed, it was the first time in my life I had not checked the calorie-count burn on the treadmill, and I figured that was a huge non-scale victory because it's like-- it's not about calories. [laughter].

[00:29:44] This person has kind of a personal question and wants to know on non-fasting days, what is your chosen style of eating?

**Dr Fung** [00:29:53] I am lower carb. I'm not like keto, but I'm sort of lower in carbs and I generally try to stick to sort of whole foods if I can. And sometimes you can still do that, even eating out. So, you know, if you go to a burger place, you can get it as a lettuce wrap or something like that, or you can take out the bun and maybe not eat the full bun. So you're still getting some. Or you can skip the French fries, right? Because, you know, they always get you to buy the whole combo, right, with the drink and so on, whereas I almost-- I rarely buy the combo. I try to just have like the-- you know, if you just have a sandwich, you can have a sandwich where you take off the bun or you make it a lettuce wrap. So I try to stay lower carb, but, again, try to stick to sort of more whole foods. And I think the thing is to make sure you stick to something that is sustainable for you, and that's gonna be different-- so I eat Chinese food a lot, right, because that's my-- that's what I've grown up with. So sometimes I see people, they go, "Okay, well I'm going to be like vegetarian," and it's like, "Okay, but if you don't really like it and it's really difficult for you, it's going to be tough." It's not that you can't do it, but you're making it tough on yourself because there are lots of different ways of eating that are healthy. You just have to keep a few rules in mind, right? That, one, you want to stick to whole foods as much as you can, you don't want to snack all the time, you don't want to eat all the time. So remember that in the 60s,



70s when there was not a lot of obesity, there were a lot of people eating carbs, right? There's lots of people eating bread. There's lots of people-- you know, in Spain they eat bread. In Ireland, they're eating a lot of potatoes. In China, they're eating a lot of rice, right? So there are still people who are eating carbs. They're just not eating all the time. And you do have to be sort of conscious that eating out is probably also not good, because eating out, like at a restaurant, they put in all kinds of stuff that you don't know about, usually like sugar. So even if you think about, "Oh, I'm going to have meat because, you know, I don't want to eat too many carbs," well, if they douse it in like sugary ketchup and barbecue sauce, you're getting a lot of sugar. You may or may not know it because of the way it's presented or put in, but you are getting it. So eating home-cooked meals, at least you can recognize that kind of thing. So you know a few things. Again, I'm not trying to reinvent the wheel. I'm just trying to get back to sort of like 1970s style eating, which is, you know, don't eat all the time, don't snack all the time, eat sort of whole foods as much as possible, and try and eat at home or home-cooked stuff as much as you can.

**Lisa** [00:32:37] All right. Okay, Dr. Fung, thank you so much for answering our questions today. Thank you so much and I'll see you next month.

**Dr Fung** [00:32:46] Thanks so much.

**Lisa** [00:32:46] Bye.

**Dr Fung** [00:32:47] Bye.