The Complete Guide to Fasting:

A Special Interview with Dr. Jason Fung

By Dr. Joseph Mercola

JM: Dr. Joseph Mercola

JF: Dr. Jason Fung

JM: Could one of the oldest dietary interventions in the world have a profound and beneficial influence on your health? Hi, this is Dr. Mercola, helping you take control of your health. Today we are joined by Jason Fung, who I'm very excited to connect with today because he's written a book about Fasting. It's just been published. It's really one of the most important books I think that you could read for most people to jumpstart your way to health. Welcome and thank you so much for joining us today.

JF: Thank you very much. I'm so happy to be here.

JM: Let me give you a little intro, too, with respect to your background. You're a nephrologist, an M.D. for nephrologist. It's interesting, we've interviewed Richard Johnson I think twice before, who's done a lot of work in this area with respect to the importance of eliminating sugar and it being such a catalyst, and he's also a nephrologist. There's something about the nephrologists that seem to be questioning these things.

You actually saw a lot of patients with diabetes. You were trained in Toronto and then did your post-graduate training in the United States. You're practicing now in Toronto.

JF: That's right.

JM: You're really one of the pioneers in this incredible intervention and really developing the practical clinical guidelines on how to implement fasting, which is the answer to the question I offered at the beginning. Why don't you tell us a little bit more about your background and how you got into this? Because it's a fascinating story and I really want to engage with a lot of great questions and help people understand this important opportunity to improve their health.

JF: As you mentioned, I'm a kidney specialist. I did my training in Toronto and then I went to the University of California, Los Angeles for a couple of years. I came back and practiced much like a conventional physician for about 15 years. As a kidney doctor, I see a lot of type 2 diabetes. Because by far, in a way type 2 diabetes is the biggest cause of kidney failure.

Putting people on dialysis, I saw a lot of type 2 diabetes. It rapidly became clear that it wasn't really doing a lot of good. The thing is people would have their type 2 diabetes and they take all their medications. They take their insulin and so on. Despite their best efforts and my best efforts, they'd still continue to get their complications. They get their kidney disease. They'd go blind. They'd get their amputations. All of it.

As a doctor, we kind of got trained to look for medications and give medications, but obviously it wasn't working. I don't know why. It seems so obvious now, but it wasn't obvious to me then. The answer is

actually pretty obvious. Because if diabetes, type 2 predominantly, is what's causing the kidney disease, you're not going to be able to do anything about the kidney disease until you get rid of the diabetes.

That was kind of where I started. Then I thought for a second, "Everybody says type 2 diabetes is this chronic kind of progressive disease." It's like AIDS. You can't get younger. It only goes forward one way. But actually when you think about it, type 2 diabetes actually wasn't like that at all. It's very easy.

If somebody comes into my office and says, "Doctor, I lost 50 pounds and then I took myself off of my metformin. My diabetes is all gone." I can measure their blood sugars. I can see their diabetes all gone. I'm not going to say, "Hey, you're just a big liar. It's chronic. It's progressive. It doesn't happen." I'd say, "That's great."

Again, when you look at the root cause of this thing, if you want to get rid of the type 2 diabetes, you have to get rid of the obesity. That's where the money is. That's how you're going to help people get better. I started kind of going back and thinking about what causes weight gain.

My first book, which was the *Obesity Code*, was really all about what causes weight gain. It's certainly not calories. Everybody thinks it's all about calories, all about calories. It actually has very little to do with calories. That's our big mistake. That's why we've been unsuccessful at creating weight loss, because we've got the wrong kind of target. You're always targeting calories but it's not that.

It's really about the hormonal balance and predominantly about insulin. We have to reduce insulin. Low-carbohydrate diets are a way to lower insulin. Reducing sugar for sure and reducing these refined grains and certain other things will lower your insulin. In some people, they do very well. In some people, that'll reverse their diabetes and so on. That's kind of how I started. I started using low-carbohydrate diets and it didn't really work.

The problem was that it was a little complicated for people. I was taking these people, some of whom are 70 years old who have cooked the same way and eaten the same way for 70 years. Some of them didn't speak English. It really was just a little complicated for them. We'd say, "You should follow a low-carbohydrate diet." They'd come back with their food diaries and it's full of rice and bread. It's like, "OK. You obviously didn't understand it."

Then I thought, "If the point is not to follow a low-carb diet, the point is to make these people better." In this case, I had to make it simpler, something that people would understand, because I don't think that many of my patients really understood what was going on. They're not on the Internet reading all about nutrition. They're grandmothers and grandfathers.

JM: Excuse me. Let me interrupt here too, just to give our audience a better understanding of your patients. You are practicing in Canada. That's a socialistic system where everyone is essentially covered for their healthcare. I'm wondering, as a part of that system, do they have the opportunity to interact with a nutritionist or dietitian? Is that part of the program?

JF: That is part of the program. But unfortunately, a lot of the conventional nutritional advice is not very successful. Most of it is based on, here we have in Canada the food guide, which is very similar to the food diet guidelines for Americans, which was again mostly calorie-based and which is mostly low-fat diets. Unfortunately, they didn't lose weight. Their diabetes was not improved. They did have access, but unfortunately, the information was not entirely correct.

JM: You couldn't pick the dietitians who would be aligned with your dietary management principles? You were stuck with a system that's really preaching the conventional model, which was basically seriously conflicted with your recommendations.

JF: Absolutely. I think the same thing happens pretty well everywhere in the world. The dietitians are – some of them who might have agreed with me were actually quite worried that the college, their regulating body, would come down on them if they started talking about low-carbohydrate diets and so on. I actually had a lot of trouble with that for a little while.

JM: Excuse me for interrupting. Tim Noakes, who is a physician in South Africa, is actually undergoing litigation right now as we speak from dietitians out there who are seeking to take his license away for espousing the same principles that you're recommending with respect to low-carbohydrates to help control their obesity and diabetes.

JF: It's a tough world out there. I know Professor Noakes. He's wonderful. He actually wrote the Foreword to the *Obesity Code*, my previous book. Absolutely, you have to be a little careful. That's the thing. Everybody wants to kind of protect their turf.

I've kind of moved on from there. I said, "If the low-carbohydrate diets are not going to be –" I know they can be successful, but they weren't successful. You can't just leave the patients hanging. That's when I started thinking about. I said, "I don't need them to be low-carbohydrate. I need them to get their diabetes better." I thought, "Why not fasting?" Somebody had brought it up to me and I thought initially, "Wow, what a crazy idea." Then I thought about it for a second and I said, "Why not? What's wrong with it?" It's such a moment.

It's very interesting that we have such an inherent bias against fasting yet it's the oldest dietary intervention in the book. There's nothing older. It's in fact something that has been preached for thousands of years. The point was not to make them follow low-carbohydrate diet. The point was to make them healthier. I thought, "If it's not working, a low-carbohydrate diet isn't working." It's not that it wasn't working for them; it's just that they couldn't follow it properly. I thought, "What about fasting?"

At first, when I thought about it, I thought, "That's really crazy," but then I kind of thought again for a second and I thought, "What's really crazy about it?" It's the most ancient dietary interventions. It's been used for thousands of years. There are so many people that do it for spiritual religious purposes. What was really wrong with it? Why are we so against it?

I started looking back at some of the science. I realized that we're completely wrong on this. There's actually huge benefits that we weren't recognizing. Part of it was also we've always been trained, "You have to eat. You have to eat. You have to eat." But in fact, that's not true. Simple logic tells you that. Because if you think about it, in the old days, just like in the caveman days, for example, there would be lots and lots of days where people didn't eat.

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That's really what fat is. It's really simply stored fuel, stored food energy. We're using it. That's it. That's all that happens. There's no serious side effects or consequences to fasting. If there was, we would have known about it several thousand years ago. But there wasn't. That's where I started from.

I implemented it in my practice. In fact, the results have been unbelievable. People come in. We see people all the time and I take them off all their medications. They're losing weight. They're finding it easy to have so much energy. It's just been incredible. It's really – this is why we go into medicine: to make people better. For the first time, this was what's happening. Before, for 10 years, all I did was watch people get worse and worse and worse until I put them on dialysis. That was really not the way to go. That's really where some of these ideas have come from.

JM: I guess when you first sought to implement this program, when we talked earlier, you shared that there wasn't really anything written, any formal guide, which is why you wrote *The Complete Guide to Fasting*. You had sort of developed these processes by yourself. Maybe you can explain that process.

JF: Absolutely. A lot of patients have said the same thing. They're like, "Where can I find some of the information about this?" There was just nothing. There are no books. Everywhere you turn, somebody would be telling them why they shouldn't be fasting. Nobody had any idea of any kind of protocols or what sort of guidelines, what problems could come up, what to do about them.

I think it's because people who used to fast, these sort of things would be passed on kind of from generation to generation, but now it's kind of been lost. It's almost a lost secret, for example. This is the thing. We had to take our experience, see what worked, and see how people enjoyed. There was a little bit of stuff you can go back to. A lot of the data is very old. A lot of the literature is very old. What we've done is we've tried to use our experience to kind of help people get through it and give them some guide that they can use. Also some support to say this is something that's OK.

The thing that's funny is when people come back – when people start, they're super skeptical. They think that it's terrible. But then they come back and they're total converts. They're like, "This is the best thing." Because they're losing weight, they're seeing that their medications are going down, their sugars are going down. It's obvious to them that they're actually getting much, much healthier.

This is all without medications. We're trying to take away medications. It's an all-natural solution. You're really letting your body just clean itself out from all of that excess sugar and fat. There's nothing wrong with that. It's free. It's available. All we have to do is give people the knowledge and they can make themselves better, which is incredible.

We have great drugs for hepatitis C, but they're super expensive. We're not talking about that. We're talking about something that's available to everybody in the world as long as they have that knowledge.

JM: I'm not sure we have great drugs for hep C. I know they're available, but I kind of believe that the best approach for that is upregulating your immune system, which fasting and an effectively implemented nutritional ketosis program will do. The end points are pretty similar for both. It's just that you've got two-thirds of the population of the Western world who are overweight and a third of those obese. In some communities, it may be as much as 80 percent. We're heading that direction.

This is the subset of people – they could use nutritional ketosis, but as you mentioned earlier, compliance is just a challenge beyond belief. People are just very challenged to implement that program, but the fasting allows them to do it rapidly. Rather than wait weeks to many cases months to actually upregulate their system to be able to metabolize fat effectively again, with fasting you can do it in days. It's like massive jumpstart.

Your book is so great because it really provides them with simple basic guidelines and it reviews some of the myths and the dangers that people are afraid of and that may prevent them from implementing it. One of the basic ones is the difference between starvation and fasting, where starvation is mandatory and fasting is optional. You can stop at any time, whenever you want. Why don't you go over that?

The other myth is you'll start burning all your muscles. There's a magnificent process in the book that describes where you start downregulating your protein catabolism and actually upregulating growth hormones. It's just a magnificent biochemistry and it's a fascinating story. Why don't you review that for us?

JF: Everybody says about starvation, "Oh." That's their first reaction. "You're going to starve people? That's crazy." I was like, "No. Starvation is where you don't eat, but you don't know when you're going to eat again."

Fasting is completely different. It's completely voluntary. You can do it for any reason, whether you do it for health reasons or spiritual reasons, people do hunger strikes, or whatever it is you want to do. You want to lose a few pounds for the red carpet. Go ahead. You do it. But if you don't feel right, you stop.

Starvation is totally different. It's not healthy. Starvation is what happens to the prisoners of war and so on. They've got nothing to eat and they didn't know if they'd eat again ever. That's not healthy and that's not good for you.

Fasting, because it's a voluntary process, you can control it. You can do more or do less. If you just had a cruise and you gained five pounds, you can do more. But if you're doing well and you don't need to, you can do less. That's really important, because it puts control of the disease back into your own hands. You can do it or you cannot do it. It's an option for you.

That's what I say about nutritional ketosis too. It's great. I think you will get a lot of the same benefits. But if you don't want to go through that whole process, here's an option for you that you can just jump right into it. It's like a tool. You can decide to use it or you can decide not to use it, but don't throw it away before ever trying.

That's the whole point. You can't eliminate one of the most powerful weapons that we have in our arsenal against weight loss without even trying it. That, I think, is the worst thing. There are people who fast and they hate it, then don't use it. You don't have to. You can do well doing other things. But if you do it and do well, that's great. You just found yourself the magic bullet for you. We're all different.

In terms of the myth, there are so many out there. One of the big ones is that you can't, because you're going to burn all your muscles. It simply doesn't happen. If you follow the biochemistry, our body stores energy as glycogen in the liver, which is links of sugar, chains of sugar, and then it stores body fat.

What happens during fasting is you start by burning off all the glycogen in the liver, which is all the sugar. There's a point there where some of the excess amino acids in your body need to get burnt as well. That's where people say, "That's where you're burning muscle." That's not actually what happens. If you look at what happens, the body never upregulates its protein catabolism. Never is it burning muscle; there's a normal turnover that goes on over.

There is a certain amount of protein that you need for a regular turnover. When you start fasting, that starts to go down and then what happens is you see fat oxidation go way up. In essence, what you've done is you switched over from burning sugar to burning fat. Once you start burning fat, there's almost an unlimited amount of calories there. You could go days and days.

What's interesting is that if you take a pound of fat, it's roughly 3,500 calories. If you eat somewhere around 1,800 to 2,000 calories a day, it takes actually two full days of fasting to burn a single fat, which is very surprising to people. If you're trying to lose 100 pounds, you could theoretically go 200 days of fasting just to burn all that fat. That's the amount of fasting that you're talking about. People worry about fasting for 24 hours. I'm like, "You could go 200 days." Then it's like, "OK. Maybe it's OK to go 24 hours without eating."

The other major myth that comes up all the time is you're going to go into starvation mode. I hear this constantly. "I can't fast because I'm going to starvation mode. My body will start to hang on to fat." What they're talking about is where the body's metabolism starts to slow down so significantly. Instead of

burning 2,000 calories a day, your body might burn 1,000 calories a day. In that case, even if you're eating only 1,500 calories a day, for example, you're going to gain your weight back.

That's actually what happens during when you reduce your calories. We know that. All those studies from The Biggest Loser, all those studies from the last 50 years have shown that as you cut your calorie intake, your calorie expenditure goes down as well. If you think about it, that's actually logical. Because the body is smart. The body doesn't want to die.

If you start off eating 2,000 calories and burning 2,000 calories, all of a sudden you start eating 1,500 calories. Your body doesn't keep burning 2,000 calories, because it's just going to lose all its weight and it's going to die. For example, if you make 50,000 dollars a year and you spend 50,000 dollars, if your salary goes down to 25,000, you don't want to keep spending 50,000 dollars, because you're going to go bankrupt and get thrown in jail. The body is the same way. It's not stupid. It will reduce its caloric expenditure.

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Starvation mode actually is guaranteed if you just try and cut your calories. But what's interesting is that actual fasting doesn't do it. What happens during fasting is that if you look at the studies, after four days of fasting, the basal metabolic rate is actually 10 percent higher than when you started. The body has not shutdown at all. In fact, what it's done is it switched fuel sources. It switched from burning food to burning fat. Once it's burning fat, it's like, "Hey, there's plenty of this stuff. Let's burn our 2,000 calories, because it wants to burn that 2,000 calories.

That's the really interesting part. It's very ironic that the one criticism that is always leveled at fasting, which is that you're going to starvation mode is the one thing that does not happen. We see this all the time. We see patients come in. They drag themselves in. They have no energy at all. I'll say, "I'm going to tell you to fast." They'll say, "But I'm so tired already." I'll say, "Just try it already." They try it. They come back and they're practically running to the door. They have so much energy. Because the problem is not that they have no energy; the problem is that that's all locked away in their fat cells and they have no access to it.

What we've done is we force the body to start accessing those stores of energy. All of a sudden, the body is like, "Whoa. There's plenty of this stuff. Let's go." We hear this all the time. It's always a bit surprising to people that they feel so good during the fasting. I'm like, "Yeah. Because we're teaching your body how to access its own stores, because it's there and that's what it's there for. We've kept it locked away for so long by eating constantly that your body doesn't know how to get it out anymore. Let's teach it how to get back to using those fat stores and then it starts burning it down.

JM: That's terrific. I'd just like to address the calories issue, that losing weight isn't really about calories; it's more of a hormonal problem, which ties to what you just mentioned that you don't go into starvation mode because it all comes back to insulin resistance, which is the fundamental foundational hormonal pathology.

Your body has a very complex biochemical system. There's a tremendous interplay of other hormone systems like mammalian target of rapamycin (mTOR), AMPK, leptin, IgF-1. All these are optimized in the right direction. Your mitochondria starts getting happy and regenerating. Everything starts moving. That's why you're – It's not just simply turning on an enzyme switch to burn fat; it's a very complex process that upregulates in the right direction.

Why don't you go over the insulin issue because you discussed it quite a bit in the book and I think it really is foundational to the core of what explains the difference of low calorie and fasting.

JF: I think that's the main issue, the insulin. Insulin is the main hormone that tells the body whether to store energy or to burn energy. This is a normal process. When you eat, you're taking a lot of calories in and insulin goes up. Insulin tells your body to store energy. When insulin falls it tells the body to start to release energy. What's happening is that over time, as we develop insulin resistance, insulin levels stay high all the time. That's not a dietary thing necessarily, because even during fasting, you see the fasting insulin levels stay up when you have insulin resistance.

If insulin is high, the body keeps getting the signal to store energy, store energy, store energy. If it keeps getting the signal to store energy, it's never getting the signal to burn energy. Therefore, that's why you feel so tired because this energy can't come back up. It's a one-way street. It can go in but it can't come back out. That's why people can't lose their weight.

The key to breaking this insulin resistance is actually to have sustained low periods of insulin. That's why the fasting is so important: one, it lowers insulin more powerfully than anything else, because really you can't get lower than zero. The natural stimulus to insulin is certain foods, not just carbohydrates but proteins as well. You can't get lower than zero. It lowers insulin but keeps it down for a long period of time. That's how you kind of get some of this insulin resistance.

As it goes down, you're opening up that door to that energy coming back out. That's why you start to use up some of your fat stores and you're not hungry, because you're in essence, eating your own fat. That's the other thing that people are always surprised about. When they come back, they say, "Hey, I'm not actually that hungry." I'm like, "That's not a surprise, because your body is burning fat. If it's burning fat, it doesn't need to eat. It's signaling your body that you don't need to eat. For now, you're working with your body in terms of trying to lose that weight."

It actually answers the question of meal timing as well as what to eat sort of question. It actually deals with the separate issues. We talk a lot about what you should eat and what you shouldn't eat. But people never talk about meal timing, making sure you have long periods where you're not eating.

Again, you can even look at the word "breakfast" in English. It's breakfast. That's break fast. That's the meal that breaks your fast. That implies two things:

One, fasting is a part of everyday life. We've forgotten that. We think it's some sort of effort, but it's not. We should be fasting every day. If you balance your periods of feeding and fasting, you will stay in balance. If you are always in feeding phase, then you're not going to be in balance and you're going to gain weight. That's what it means.

The second thing it means is that you can break your fast at any time. It doesn't have to be 8:00 in the morning. It doesn't have to be 7:00 in the morning. You can break your fast at any time of the day or you can eat two days later. It's not that important.

But I think it's important to realize that there are so many kind of myths around breakfast. "You have to eat, you have to eat, you have to eat." Unfortunately, that's the message that's gone out there. People, even when they're not hungry, are forcing themselves to eat something. A slice of toast in the morning. Some sugary cereal in the morning. They're not even hungry.

Forcing yourself to eat when you're not hungry is not a winning strategy for weight loss. Logically, it doesn't make sense. But these sort of illogical thoughts get kind of propagated and then it becomes kind of conventional dietary advice. "Eat breakfast. If you're not hungry, eat breakfast." I don't think so.

JM: We're talking about fasting. We really didn't define it. There's a whole variety of fast, which you go into in your book. But just to summarize it simply, what you've been discussing previously is water

fasting for more than a few days. But there's of course, intermittent fasting, which we'll touch on a bit later.

I'm wondering before the water fast if you could provide us with guidelines of who should not be a candidate and how it should be implemented. Because the vast majority of people watching this probably would benefit from it, I would suggest around 80 percent. We really don't need any supervision other than to pick up a copy of your book *The Complete Guide to Fasting*. Why don't you discuss the people who are underweight, those who are under medications, or any other like pregnant women or children that would be a contraindication?

JF: There are several absolute contraindications. Anybody who is underweight. That's defined as the body mass index of less than 18.5. Obviously, if you're at risk of being malnourished, you should eat. That's just logic. There are several other people though.

Children should generally not fast for extended periods. Obviously if they miss one meal here and there, it's not a big deal. Everybody's done that. But they shouldn't try and go more than 24 hours. The reason is that the consequences are too high.

The children, they need nutrients to grow. If they want to try and lose weight, which many do have to, cutting out refined grains, cutting out sugars is the way to go. Fasting, because it restricts all nutrients, including those they might need, is a risky strategy. Again, all throughout history, people have acknowledged that. Children generally do not fast like for religious purposes and so on.

The same applies to pregnant women and also breastfeeding women. There is a whole number of reasons why you need those nutrients. You can harm the fetus and you can harm the baby if the mother doesn't get adequate nutrients. The risk is too high. Remember that for pregnancy and breastfeeding, it's a time-limited situation. It's not like you're always going to be breastfeeding. You can wait until it's done and then try to really get into it. There are other strategies that you can use.

For those people, those are absolute contraindications. They really shouldn't try it at all. For most other people, that's fine. But there are certain people who have to be careful. People taking medications have to be careful, because some have to be taken with food. For example, a lot of medications, such as metformin, aspirin, iron, they're often recommended to take with food. You can get an upset stomach or even ulcers in some cases if you don't take it with food. You have to be very careful if you're taking medications.

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The second real caveat is those people who are on diabetic medications because if you take the same dose of medication but don't eat, you run the risk of having very low blood sugars. Now, the very low blood sugars is very dangerous. You have to adjust your medication before you do the fasting. That's really where you have to kind of engage your physician and get some instructions as to what to do.

The one other thing that you have to be careful of is uric acid. There can be an increase in uric acid during fasting. The reason is that the kidneys increase their reabsorption of uric acid. Therefore sometimes that can precipitate gout. Most people do fine with it, but if that becomes a problem, it may limit the amount of fasting you can do.

As you said, there are different types of fasting as well. Classically, it's water only. But there are a number of different ones you can do. Really it's just the absence of eating. The variations are infinite kind of. You can do water only.

You can do dry fasting. Certain religious people, such as Ramadan in the Muslim faith, actually when they fast, they don't eat or drink. That's considered dry fasting. From a medical standpoint, I never recommend that, because it makes it much harder. You're not only fasting, you're also getting dehydrated, because you're not getting any water. I never recommend that from a medical standpoint. For religious purposes, there are a lot of different ways to do it.

Then there's what I consider kind of standard fasting, which is I allow things that are non-caloric fluids, things like herbal teas, green teas, and coffee. Some people look at non-caloric sweeteners like artificial sweeteners, artificial flavors, and say should they be, shouldn't they be. Again, there's no harm in fast rules. But my general recommendation is not to include any of those.

A very much more popular type of fasting is what I call the fat fast, which is where you only allow fat during the fasting period. It sounds really silly, because fat in general, pure fat is not taken by itself. We don't generally eat a stick of butter on its own. But now with the bulletproof coffee, for example, you would mix in butter and MCT oil or coconut oil into the coffee. You can get a substantial number of calories. The important thing though is not the calories per se, it's actually insulin response.

What's interesting is that dietary fat produces very little insulin response. Because you're keeping insulin levels low, you can actually get almost all the benefits of the fast despite taking a lot of calories as fat and potentially making it much easier to do the fast. Anything that increases your probability of success I'm all for. Lots of people have done very well with this sort of fat fast.

Another variation that we use quite a bit for the longer fast particularly is to allow the use of bone broth. Bone broth contains lots of proteins as well. There's gelatin and there's all the proteins from the bone. It's a very healthy and traditional food. The thing is that we see people who take bone broth as well as water, teas, and coffee, and do very well. If you do very well, I don't have a problem.

Is it true fasting? No, not really, because you're taking calories. There is food there. There is protein there. It's not a true fast. But that's not my point; my point is that if you're getting the results that you want and it's making it easier for you to stick to the program, then you should do it.

Now, if you start getting bad results with fat fasting or bone broth fasting, you can go to classic water-only fast. But these things they're all available. They're all variations. You really have to see what works for you and choose what works for you the best. We have people who find that they hate bone broth. They'll just go to water and do very well. Other people say, "Wow, the bulletproof coffee works tremendously for me." I'm like, "OK. Do it then."

If you're losing weight, you're coming off your medications, why do I care that it's not a true fast? I really don't. I only care that you get better.

JM: I'm really intrigued with the fat fast. In fact, my landscaper, I recommended a water fast. After three days – we need to talk about the progression through the process, so people can anticipate, what they're going to expect – she was really fatigued and tired, which is pretty normal.

I actually made a real time fat-bomb drink for her, which wasn't coffee. I'm not a big fan of coffee although healthy coffee is OK. It needs to be organic and also a very small percentage. I use pau d'arco tea, which has some really interesting components. It has beta-lapachone, which upregulates NAD+, which is an important electron transfer mechanism and mitochondrial signaling to the nucleus. Pau d'arco tea, some coconut oil, some MCT C8 oil, butter, and a little stevia. It perked her right up.

But it was like 400 or 500 calories in one cup. She's having 1,000 calories a day virtually no proteins, no carbs. The question – you somewhat gave your impression on it. I'm wondering if there's some critical

threshold below which this will work. And I think I let her have avocado. She's below five grams of carbs a day and below five grams of protein.

I think that's one of the reasons this works. If you eliminate the protein, not only do you suppress mTOR or inhibit mTOR, but also so many people have food allergies. That's what's causing it. It's the protein. If you eliminate the proteins, it's not issue. What do you think about an absolute restriction or limitation of the carbs and the proteins? Is there some threshold do you think where you'll still get the benefits? Is it over five grams, 10 grams?

JF: I think it's probably individual. If you can keep it below 10 grams and 20 grams, you are probably doing it very, very well. There are actually some very interesting data that was looking at these sort of keto flu sort of symptoms. Everybody who talks about ketosis, there's this thing that they talk about, the keto flu, until your body gets fat adapted. I think that's true for fasting as well.

What's interesting is I was looking at some data recently where they graphed where your blood sugars are in relation to where your ketones are. Ketones just start to go up as your blood glucose falls. That slope actually changes in different people.

If you look at, for instance, type 2 diabetics, they have a very steep slope. That is their blood glucose even as it falls, ketones don't go up. That's probably why they feel like crap, because they're not getting the ketones. The blood glucose is going down, which it should, but the body should be producing ketones for their fuel for the brain, but it's not.

In those cases, some of the fat bombs, some of the exogenous ketones may actually make it a lot easier for people to get through that. Now, as your body becomes adapted, it can take two weeks to a month kind of thing, that shouldn't happen anymore. We see the same thing in our patients. We tell them, "The first few times you do it, don't expect it to be a lot of fun. Your body is not used to it. It can take a while to get used to it."

We see the same thing in the muscles. If you look at the muscles, people have done the study where they've done biopsies of muscles. As you become more fat adapted, as you go down and down on the carbohydrates, you can see actually that the gene expression in the muscles completely change this to those genes that are using triglycerides, which is fat for fuel. You can see that change happening, but it's not going to be instantaneous.

If you have never fasted and you do a three-day fast, you may feel pretty lousy. We tell people to expect that. You can either continue or you can take a break and let your body become more adapted to it. One of the keys to success, as you mentioned, is for people to understand what to expect. If they expect a certain thing, they'll know how to handle it. For example, how to deal with hunger, constipation. Headache are often a problem.

A lot of people when they're doing the longer fast kind of break at about Day 2, because Day 2 is actually the hardest day. But we say, "Look, Day 2 is going to really suck, but every day after that the hunger actually starts to go down." As your body switches more and more to burning fat, it becomes a lot easier. The hunger practically disappears by Day 5, Day 6, and then they can go on forever. Once they know that, they can kind of get it through Day 2 and then start to develop the benefits.

For intermittent fasting, for example, we give them tips as to what to expect and what to do about it. If their stomach is always grumbling, for example, you might take some mineral water. A lot of people get cramps, so we recommend magnesium and Epsom salts. Those sort of things that people have done in the past to really help them successfully get through the fast.

We have a number of tips that we have for people. One of them surprisingly is don't tell anybody that is not going to support you. This is the thing, because there's so much kind of misunderstanding, if you kind of let it be known that you're fasting, there's going to be some well-meaning but uninformed person who is going to be on your case. "You can't do that. You shouldn't do that. You shouldn't do that." The last thing you need is somebody talking negative stuff in your ear all the time who doesn't really understand what they're doing.

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There are a number of things that come up. That's what this book was really written for: to provide that kind of foundation that people can build on. There's also a lot of online groups where people will support each other, where people can give each other tips and that kind of thing. Those have been very successful as well.

JM: Great. When we were discussing the contraindications, you mentioned the concerns about people taking medications. You had confirmed that many medications are designed to be taken with food. But I think the more important issue with the medications is that they're treating symptoms. Guess what?

Water fast treats the cause of what they're taking the medications for. The most common one would be hypertension, diabetes. If you're eliminating the cause, of course, your need for medication goes down. That's why you have to be carefully monitored and supervised by a professional who understands how to do this, because there's a great risk for you.

But then you had also mentioned the concern about hypoglycemia. I want to touch on this for a bit. Because hypoglycemia is not a specific blood sugar below, which you'll have problems. It's really a symptom as I understand it. I wear a 24-hour continuous glucose monitor. Sometimes when I'm really pushing my carbs low, I'll go down to almost 40 at night. I'm not symptomatic at all. But put someone who's hypoglycemic to 40 and they'd probably be dead I suspect.

Why don't you address that? This issue of relative symptoms to hypoglycemia.

JF: We see the opposite too, where people have blood glucoses that are relatively normal like 100 and started having symptoms, because they're used to having blood glucoses of like 180, for example. The thing is that it is the symptoms that is the most important. Normal people can have very low blood glucoses kind of in the 40s. If they're in ketosis, for example, then that's a totally normal process, because the ketones are fueling the brain and everybody feels normal and there's nothing to worry about.

On the other hand, if you're fasting and you are taking these medications, your body should be producing enough glucose to sustain the system. But if you're taking the medications, it may not. That's the real worry. You're not allowing the body to kind of compensate on a normal basis, because you are taking, for example, insulin.

If you're taking insulin and you don't eat, your blood sugar instead of your body producing the blood sugar, it will suppress that and the insulin will make the blood sugar go down even further. There can be definite problems with that. But I always tell people that if blood glucose goes down, if they're diabetic, for example, that's what we want to happen. But what it means is that they're overmedicated. I say, "We take away the medications. That's great. "

Same with the blood pressure pills. We see this all the time. I monitor their blood pressures at every visit. Because oftentimes, as the weight comes down, the blood pressures will come down. Again I say, "That's great. That's what we want to happen. It's not a side effect; it's actually the expected effect. But you're overmedicated. Let's take off the medication." Everybody's happy to get off their medications. I say,

"Look, if you're taking less medication, you're getting healthier." It means you're treating the root cause. You're allowing your body to heal itself.

JM: I have interviewed Richard Johnson, a nephrologist also at the University of Colorado. I think he's the head of the department out there. He talks a lot about uric acid. I think he's even written papers on it. His speculation is that actually relatively high levels of uric acid can be protective because it's somewhat like an antioxidant as I understand it from his description. I'm wondering if you've looked, being a nephrologist yourself, at any of those issues.

Because there's no question your uric acid goes up even when you're not water fasting. I exercise a lot. I may have 60 to 70 grams of carbs a day most days. I'm still in nutritional ketosis, but my uric acid is like over 9. I'm not having any symptoms. I don't have gout. But if you do have gout history, it certainly is going to be a concern.

I'm wondering if you think that when the uric acid is elevated from a healthy nutritional ketosis approach, whether it's through dietary management or elimination of calories from the fasting, if that may be actually healthy rise in uric acid.

JF: It certainly could be. From a fasting standpoint, the body starts to reclaim all of the kind of breakdown products, especially the protein. Uric acid and all the other stuff kind of gets reabsorbed, because nothing is coming in. You don't want to be losing a lot of protein through your urine or through your stools. That's why you get more constipation. Less coming in, less going out.

But whether or not the uric acid itself is protective is a very interesting question, because again to me, it seems like the body is not so stupid as to, "Oh, you had nothing to eat. Let's give you gout." It doesn't seem that that's a very productive sort of mechanism. My baseline bias is to say this kind of natural mechanisms must have some protective effect, even insulin resistance.

I talk about this in some of my blog writings that insulin resistance is actually a good thing. Everybody says, "What? That's crazy. Insulin resistance is so bad." I'm like, "Insulin resistance. What is it protecting us from?" It's resisting the hyperinsulinemia, which is the real problem. If you have too much insulin all the time, our body develops resistance. But the problem is not resistance, the problem is hyperinsulinemia.

Framing that problem in that way is very powerful. Because if you see it as a hyperinsulinemia problem, the solution becomes very obvious: too much insulin, then lower the insulin. If you say the problem is insulin resistance, you don't know where to go. What do I do now? If you say the problem is too much insulin, then lower it. How? Low-carbohydrate diets, intermittent fasting. Guess what? You do that and all of those problems of the so-called insulin resistance or metabolic syndrome go away.

Really it's a hyperinsulinemia problem. The triglycerides go down. The central obesity goes down. The blood glucose goes down. The hypertension goes away. You actually take care of the entire spectrum of the metabolic syndrome by understanding that's really about hyperinsulinemia.

JM: To me, and I'm so used to saying this so many times, it actually seems to be one of the variables that motivated you to pursue this approach is the practice in type 2, not type 1, but type 2 diabetics of prescribing insulin. To me, that is reprehensible medical malpractice, negligence, stupidity, and ignorance, and should result in the suspension or elimination of that physician's license, because they are prematurely killing the patients and doing nothing to help them.

I just had to get off my soapbox for that. I'm just so irritated when I see that. It drives me nuts. They're just so foolish. They don't get it.

JF: They don't get it because – the whole thing is that we pretend like the disease is the high blood glucose, but it's not. What caused that high blood glucose was the diabetes. The thing is that if the problem is insulin resistance, which we can all agree. Let's say, type 2 diabetes is about too much insulin resistance, which causes the high blood glucose. The blood glucose is the symptom. It's not the cause; it's the symptom. If you're treating the symptoms, but doing nothing for the cause, the insulin resistance, why do you think you'll get better? The truth is they don't.

That's the realization I came to. As in what happens to standard patient? You start with prediabetes, you go to metformin, you go with two meds and then three meds, insulin, then more insulin, and more insulin. Over a period of 10 years, you've gone from no medications to 100 units of insulin a day. Your diabetes hasn't gone better. It's only gotten worse. It's gotten worse even if the blood glucose is normal the entire time. Your blood glucose still got worse. You're treating the symptom.

We're not stupid enough in any other part of medicine. If we have an infection, which causes a fever, the symptom is a fever, the cause is bacteria. You use antibiotics. You don't use Tylenol. Because treating the symptom does you no good, but yet we accept that in the treatment of diabetes. It's completely, completely insane. It's the stupidest thing, but 99 percent of doctors do this. You're taught this in medical school. You're taught this in residency. You read the papers and everybody talks about controlling their blood glucose, and I'm like, "Why are you pretending the blood glucose is the actual disease? It's not."

Here's the thing that I always think is funny: patients actually know it does no good. Because you give them insulin, they gain weight, and they come back and they say, "Hey, Doc, you gave me this insulin and I gained like 30 pounds." You say, "Exercise them off." But the problem wasn't that they changed their exercise routine; the problem was you gave them insulin.

They gain weight and you give them more insulin. Then they gain more weight and you give them more insulin. They know it's not working, but they can't figure out what the solution is and none of their doctors will help them because everybody's busy prescribing insulin.

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JM: The solution is so simple. They should just fire their doctor and hire someone new. That's the key. Why don't we talk a little bit about the mental clarity benefits? And then the other component, as you mentioned, when we fast, we become really efficient in recycling and reusing our proteins. I think everyone can accept it.

But one of the proteins that I'm aware of until we've discussed this previously are the proteins in your brain that tend to accumulate as we age and contribute to Alzheimer's, and you had mentioned how your body adjusts those proteins too, thus decreasing your risk for Alzheimer's. It's a fascinating connection. I'm wondering if you can expand on it.

JF: One of the key concerns that people have when they fast is that they can say something like, "I need to work. I can't fast." I was like people think that eating gives you energy, but that doesn't make any sense. Because if you eat a huge Thanksgiving dinner, does that mean you're really sharp and ready to go? Or are you slumped on the couch and the only thing you can do is watch a football game? It's not that eating gives you energy.

On the other hand, what happens when you say you're hungry for success or hungry for something? Does that mean that you have no energy and you're very slothful? No. It means you're ready to go. That's because you don't have to shovel all that food in. You're not diverting all the blood into your intestines to do the hard work of digestion. You got it out. You've got it going.

When you fast, you increase your noradrenaline, which is one of the key hormones that really activate you, the growth hormones, all of that. You're actually stimulating yourself. That's why basal metabolism goes up, because it's a state of activation. You have more energy when you fast, not less.

One of the other things, which is becoming a fairly interesting topic is kind of dietary protein. Everybody thinks protein is good and all good protein is good. But the thing is there is a very interesting process called autophagy, where the body actually breaks down kind of old subcellular components and stuff. Everybody thinks that's bad, but I actually think it's a good thing. It's a way for your body to clean itself out from all these excessive proteins.

You take a disease like Alzheimer's disease. When you look pathologically and see what the problem is there are these neurofibrillary tangles and plaques. Basically all these stuff in your brain that's all gumming up your system. You got the mood changes, the memory loss, and all that kind of thing.

If you theoretically can turn on this process – fasting and dietary protein restriction are the main things that turn it on – you can actually activate this process of autophagy and theoretically can kind of clean out all this excess protein from your system an prevent Alzheimer's disease.

Now, a lot of this is theoretical, but there's actually all kinds of animal data. There's data restricting caloric restriction and fasting to improve memory. There's all kinds of things. It's just a fascinating topic. People talk about it for cancer prevention along the same lines, because cancer, for example, cannot metabolize ketones and fatty acids. If you drive those glucose levels down and let your body run on fat, those cancer cells will starve. There are researchers out there who are looking at these ketogenic diets and these sort of diets for cancer prevention.

For epilepsy, for example, where it's well proven that you can use a ketogenic diet, increase the number of ketones to feed your brain. The same thing with Alzheimer's. If the problem is you can't use the glucose properly, if you increase the number of ketones, you can keep it working. You can keep your brain powered properly. All sort of fascinating kind of upcoming areas that we just don't know about and yet lots of fascinating things.

Because we can't do anything about Alzheimer's. The drugs are not good. It's a terrible problem and it's increasing. Alzheimer's is increasing as it goes and nobody knows why. Maybe part of the reason is our diet and what we do. We eat all the time. We don't allow ourselves to kind of clean out these old proteins and so on. We're so anti-fasting. We have to eat constantly. It's an interesting, interesting field.

JM: Let's talk a little bit about cycles now in life and biology. Because say, you have a really committed individual who can follow, maybe does the water fasting or not, the end result is their nutritional ketosis. It seems that it may not be the wisest strategy for someone to be in nutritional ketosis all the time even though it has all these magnificent benefits.

One primarily is because of the social impact. We are social animals. Primarily, one of the things we do all the time when we get together is celebrate with eating. Birthdays, holidays, anniversaries. Why don't you discuss that and how you integrate the cycle component with feasting and fasting?

JF: I think this is one of the things that's really important. I actually think that successful diets are actually intermittent, not continuous, because the cycle of life is really intermittent. This is what we talk about. One of the most important things about fasting is to integrate it into your life, because there are going to be times that you don't want to be fasting.

You don't want to be that guy who is at the wedding and he won't eat the cake, he won't drink the wine, he won't eat the hors d'oeuvres, and he takes every piece of breading off of whatever. It's just not fun. You can't be that guy forever. He's known as the party pooper.

JM: Or the orthorexic.

JF: Yeah. It's just not the way that we're supposed to do things and that's not the cycle of life. Even if you look at kind of patterns, if you look at, say, Christmas, there's not a time to fast. It's a celebration. You got to feast. You got to celebrate life sometimes, because sometimes it's just good to be alive. But then you have to follow that with a period of fasting. We do that, for example, around the time of Lent and Easter. It's a prescribed period of fasting. There are times to feast and times to fast.

It goes the same. You have to balance them. It's all a matter of balance. Life is a matter of balance. You balance the times where you eat a lot. But you can't go back to normal. You have to go and eat very little. If you balance periods where you eat a lot with periods you eat very little, you'll stay in balance and you'll do well.

Because life is intermittent, I actually think that intermittent diets are more successful than continuous diets. You can use continual diets for a period of time, but eventually I think that they're very difficult. Because if you go on a cruise, you go on a holiday, what are you going to do? You can stop and not do it, but it's hard and it impacts your life.

I once had a fellow who used to go out with his friend at lunchtime and hang out and stuff. When he started fasting, he said, "I cut that all out." I'm like, "No, you can't. This is your social circle. These are your friends. You go and hang out them. But if it means you skip dinner, then skip dinner. Because when you're by yourself, you can do that."

You have to figure out how it's going to integrate into your own life. Some people doing a long fast have real trouble because they have dinner with their family every night. They shouldn't do that. But if it's not so much trouble and you like it, then do it. I try to work with people individually, because we can't kind of say, "You should do this. Everybody should do this," because that's not the way life is. These cycles are really important to us.

JM: Let's go back to the mental components for a moment, because in order to adopt this program, I just want to mention and re-emphasize, you mentioned it slightly but I'll re-emphasize the point, your hunger goes away. When you're at these celebrations, your desire, your cravings, your intensity for devouring this piece of cake or dessert is not there. You can have it. Celebrate with people. Maybe have a little piece. You're fine with it. But also discuss the mental clarity, because I don't think we mentioned that. That literally is universal in anyone who adopts this program, this way of eating.

JF: That's one other thing that surprises people. I had a friend. He's a physician. He works in the emergency a lot. He had some weight to lose. He started doing some of the fasting and so on. He says, "Wow. This is amazing. I feel like my brain is just electric. I feel like I can do anything." It's really interesting, because again as you get the ketones, the brains really can metabolize them well and it really makes them function on a very high level.

This idea that it improves your mental clarity is not new. What's really interesting is that you can find mentions of it all over the place. If you look at the ancient Greeks, Hippocrates and all the ancient Greeks, they fasted a lot. But they didn't do it to lose weight, because there's really no obesity back in ancient Greece. It was because they understood that it made them think a lot better. All these ancient Greek philosophers and stuff, they all fasted so that they could actually think better.

There's a very interesting novel by Laura Hillenbrand called *Unbroken*. It talks about the prisoners of war, the American prisoners of war in Japan. What they described in it was the astonishing mental clarity of starvation. That's what they called it. I remember I was listening to that book.

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I was flabbergasted, because here it is, a novelist. These people they describe a prisoner of war who, for instance, was reading books purely through memory. Some other fellow who learned the entire Norwegian language in like two days. Just incredible stuff because their brain is just working so well. It's because of this idea that these ketones are actually a much better fuel for the brain and so on. It's astonishing sometimes.

JM: Maybe one last point to review is the fact that one of the reasons this is such an effective approach is you're not really spending a lot. It's less. It's totally affordable. It's easy to do. Maybe you can comment on that. The second point is if a person implemented the water fast successfully, they're now in transition to intermittent fasting.

Why don't you discuss the difference between when you start your intermittent fasting? If it's a six- or seven-hour window. When I first started this, I thought I'd skip breakfast, but as I came to realize studying the mitochondria more is it's not a good idea to stuff your body with food when you're going to go into rest, regenerative, and repair mode. You're going to create surplus ATPs. I like to personally avoid food for a minimum of three hours and typically it's closer to five or even six hours before I go to bed.

JF: There's actually some interesting data on that too. If you look at insulin response, insulin drives a lot of weight gain. But if you take the same meal at very close to bedtime versus in the middle of the day, you actually get a higher insulin response at the end of the day, which is interesting and which is not good.

I actually think it's best to take your biggest meal sometime lunch to early afternoon and then really try to go easy at night time meal and then into the next day. I think there's something in that. Obviously the science is not. There's not a lot of science out there, but I think it really makes a lot of sense.

In terms of the advantages of fasting, the key thing to understand is that fasting is almost the opposite of every diet that's out there. That's why it's so successful. It's because there are so many advantages to it. It's not complicating your life. It's actually simplifying your life.

It doesn't cost any money. In fact, this saves you money. It doesn't take any time. In fact, it saves you time because you don't have to cook, you don't have to eat, you don't have to do anything. You don't have to plan for it. It makes it so much easier because you don't have to wonder, "What am I going to do for lunch?"

There are so many different ways that it's beneficial. You can add it to any diet. If you're vegetarian, you can still fast. If you don't eat nuts, if you have an allergy to meat, if you can't cook, you can still fast. Any diet can be improved by fasting. There are so many different ways. It's so powerful. It's limitless. You can continue fasting as long as you want until you get the benefits that you want. The world record is 382 days. You can go a long time powered on your own body fat.

Is it going to work? If you don't eat, you'll lose weight. That's virtually guaranteed. If you wonder whether this diet works or not, it will work. There's no doubt about it. The only question left is when is it healthy for you? I think the surprising answer to most people is yes, it's actually extremely healthy.

Can you do it? That's what the book is for, to help you. That's what online groups are for, support groups and that kind of thing. Because literally, millions of people around the world do this every day. Buddhists, Muslims, they all have prescribed periods of fasting. Literally millions of people are doing this every month, every week, or whatever it is. If there are millions of people doing it, there's no reason why we can't.

The only reason that we think we can't is people tell us that we can't. There's nobody out there saying yes we can. You can do this. There's no problem. But when you fast for a blood test, a blood cholesterol test or whatever, nobody says, "You can't do that." Or if you do a colonoscopy, which is routine now, and you have to fast for 48 hours, nobody says, "You can't do that. It's really unhealthy for you." They just say, "You can't eat for 48 hours. Go ahead." There's no problem.

JM: Let's provide our viewers with a little more reinforcement and encouragement and support that suggest that this is safe. If you could just share with us how many people – and I suspect the vast majority of people you've helped are really sick patients, otherwise they're not going to be seeing you, because you're a nephrologist. They're seeing you with maybe end stage renal disease. How many people have you helped, how long have you been doing it, and a follow up to that, what has been the response by your medical colleagues?

JF: It's been about five years now. We've probably put over a thousand people on various fasting regimens. Some people do tremendously well. We had one fellow, for example. He had 20 years of type 2 diabetes. He was only about late 50s I think. Insulin for five years. Within two weeks, we took him off everything. All his insulin was gone and the sugars were normal. So, 20 years of type two diabetes and we took it all away in about two weeks. Unbelievable.

Then his sister saw he was doing really well. She comes in. She's on three pills for diabetes. Within a month, we took her off all three. She takes herself off the other two blood pressure medications and cholesterol pills. We took her off six medications in a month and a half. That's amazing. Obviously, they did very well. But that just goes to show you what can happen when you try some of these things.

Initially, there's a huge amount of skepticism. Everybody thought I was crazy. But now I have so much support from my own local area because everybody's seen the results. I have lots of doctors at my hospital who are doing it. Once they see it themselves, they're like, "Wow. This is so obvious." They do it and they go, "This is amazing." They start referring me patients and say, "I want these benefits for my patients."

Because they know they can't provide that kind of supportive environment that we can provide, that we set up in our clinic, where we kind of anticipate their problems, give them the support, the online resources, the books, and all that sort of stuff to be able to do it successfully. That's the key: to have the acceptance. There are so many naysayers out there who say, "You shouldn't do this. You can't do this."

But within my own local area now, we're really seeing a lot of strong support for this, because it's undeniable. People see the results and they go, "You need to do this for all my patients." That's what the response mostly is now.

JM: Let's expand that support. You've written probably the best book on the topic. It's a book I encourage nearly everyone to get if you're overweight or you have medical diseases, because there's nothing else like this. This book will guide you through it. Most likely unless you're taking medications, you won't even need a healthcare professional consultant help you. It's always nice to have it but you likely do it really well with yourself.

The book, The Complete Guide to Fasting. Pick it up. You're going to save more than the cost of the book by the food you're not going to eat. It's free essentially.

JF: That's right.

JM: If you can describe any support group or online resources or site that people might use in this process to support them in applying or implementing the water fast.

JF: My website is www.IntensiveDietaryManagement.com. I write a weekly blog and there's a lot of information about fasting and so on. The other site that's very good is www.DietDoctor.com, which has a lot of information on intermittent fasting. I also write on there as well. In the subscription part of it, I answer questions and so on for people. It's definitely worth checking out. It's also a great site for a lot of good recipes and so on. Both of those are great.

Everything's there. The most important message I suppose is that all of this health is really yours to take back, to take back from all the drug pushers and the people who just want you to take medications and who tell you that you can't do it and you'll always have type 2 diabetes. No. It's all there. It's all within your grasp. It just requires the right knowledge. That's really what you provide. The knowledge for people to get healthy. Because we have this culture of sickness and drugs.

JM: Absolutely. Because of my position on the Internet and my reach with millions of people, I'm able to connect with really pioneering individuals like yourself who has developed these things over years and literally thousands and thousands of hours of time, effort, and energy to develop a process that is highly effective. I feel greatly privileged to be able to connect with people like yourself and share this with more so that more people can get healthy.

As physicians, we go into, most all of us at least initially, to help people get healthier. We eventually realize like you and I both did that using drugs and medications is only treating the symptoms almost every single time and is not the solution.

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JF: That's the thing. We get off track. As physicians, the 19th to 20th century is all about drugs because we had a lot infections. That was a great model. You take those antibiotic. You get better. But now as we go onto the 21st century, they're all metabolic diseases. They're all diet diseases.

The problem is we're trying to use drugs for dietary diseases. It's a diet-lifestyle disease and we throw drugs at it. Then we wonder why our drugs are no good. It's because the premise is entirely wrong. It's like bringing a snorkel to a bicycle race. It's just the wrong thing. We've got to move on.

JM: I would agree. Thank you so much. It's been a great pleasure and privilege to connect with you today and provide such marvelous information, not only in this interview but in the book, which I encourage almost every one of you to get and put in your library, because it's such a powerful dietary intervention that's been used in ancient history. Why not take advantage of it? It's free.

Let's go out and support Jason's book. Tell your friends and family about it, because it's a really powerful resource for you. Thanks again. I appreciate all your help.

JF: Thank you.

[END]