VIDEO_ Diet Doctor Podcast with Megan Ramos (Episode 7)

Dr. Bret Scher: Welcome to the DietDoctor podcast with Dr. Bret Scher. Today is my pleasure to be joined by Megan Ramos from idmprogram.com. She works with Jason Fung and together they've really sort of revolutionized the concept of fasting as a medical intervention. Now fasting is something that's been around forever basically in religion and in society, but really sort of shunned by the medical community until recently.

And Megan and Jason are a big part of why that has happened. So today I am excited, I get to pick Megan's brain about how they started and a lot of the tips and tricks that they used to make this safe. Because there is still a concern about the safety of fasting and the efficacy of fasting and making sure you get a proper balance. So I think that's going to be one of the main take-home lessons of this podcast today with Megan.

As she likes to say, if a little bit is good, we tend to think a lot is better. And that's not always the case. And fasting is definitely one of those circumstances. So yes it's an incredibly powerful tool that a lot of us can use to be healthier to treat medical conditions, but it needs to be done safely and with observation.

And hopefully you'll learn some tips today that will help you see if fasting is right for you and you can talk to your medical provider and you can learn more for Megan and Dr. Fung about whether it's right for you. So I hope you enjoy this interview today with Megan Ramos. Megan Ramos, thank you so much for joining me today on the DietDoctor podcast.

Megan Ramos: Thank you, Bret, it's a pleasure to be here.

Bret: You and Jason Fung are known as sort of the fasting dynamic duo and for good reason. I mean, you really have done a great deal to revolutionize the acceptance of fasting as a treatment for diabetes and for obesity and for metabolic syndrome which we have such a problem with in this country and in the world. You came to this from a very interesting standpoint though. I mean you have a very clear personal experience with this at a very young age. So tell me a little bit about that.

Megan: I was in my mid-20s and I was doing prospective research on a cohort of our diabetic nephropathy or diabetic kidney patients. We were looking for biomarkers to

better predict their kidney outcome, trying to diagnose their kidney disease earlier. And so years have gone by, I've been in clinical research for over 20 years now.

Years have gone by, we're analyzing the data and it didn't matter how early you could predict the kidney damage, because once a kidney damage was there, the diabetes was still getting worse and worse and worse, the kidney damage is still going to progress. So all I was doing with my career was trying to find out when people were going to die sooner.

Bret: Oh Jesus.

Megan: That's essentially what I got to and I was really frustrated. And myself I was very slender at the time, but I didn't eat well and I didn't eat often. And that's kind of funny, I realize I was fasting all the time, but I wasn't healthy still. I was diagnosed with fatty liver at 12, and polycystic ovarian syndrome at 14, but I was thin, I was quite slender, but I was tired, I was sluggish, I didn't have energy. So looking back I know I had metabolic issues.

I was a TOFI, thin on the outside, but quite fast on the inside and no one knew what to do with me when I was younger. They figured I grew out of it because I was slender on the outside. So when I came to this realization that-- I have a strong family history of diabetes and heart disease and, you know, you just couldn't beat diabetes.

It was a be-all and an end-all and at 25 I realized, "Megan you need to take control of your own health, "you need to stop living off of French fries and pizza. You need to start eating like a responsible adult." So in that year I started following the Canadian food guide, eating six small meals throughout the day, making sure I was getting all of my fruits, taking my snacks, just "stabilizing" my blood sugar levels and I became ridiculously obese. I put on nearly 100 pounds.

Bret: Wow!

Megan: My daughter kept checking my thyroid numbers and everything was fine. But she was insistent and there was nothing wrong there. It was just the years of poor eating habits topped off by a year of really poor eating habits that sort of did me in. And once I gained all that weight, before my 27th birthday I was told I had type 2 diabetes and to me this is just the end. I've had 31 hours of cardiac ablation before my 30th birthday. So as a cardiologist...

Bret: I can appreciate that. It's a lot of work.

Megan: I have had some minor incidences of cancer in the past that was caught very early. Even that, there was a chance. It was caught earlier, I was going to be okay.

Diabetes now at 27, what kind of life I was going to have? So I was broken, for a few days I was broken I called in sick to work and then I finally went in. And I knew Jason, Jason Fung, I've worked with him for 20 years and he was also getting frustrated.

He was entering his 40s, he was just watching his patients get sick, getting tired of delivering bad news and not being able to do anything about it. So independently he had started researching about diabetes and he became pretty interested in the relationship between religion and fasting for both the spiritual and the healing purposes so a friend of his sort of sparked his interest.

So he had some really great information and he shared it with me and he said, "You know, there's a low-carb approach that you can do "and there's the fasting approach that you can do and ideally you can combine them together." But I was born in 1984, so that's the year when everything sort of started to go bad. The cover of Times Magazine condemning eggs and bacon and butter. Those foods were prohibited from my home growing up. And so I grew up eating the today standard North American diet with two very busy parents and I was fortunate growing up.

If I didn't like what was being cook for dinner and I wanted to order pizza, someone would get me a pizza. So changing my eating habits seemed really tough. Jason said, "Cook with coconut oil." And I said, "What do you do? Like how do you do that? "I don't even cook in this day and age. I go to Drive Thru's. That's how I sustain my life." So for me the fasting was easier at the start before I tried to overhaul 27 years of dietary habits.

So I started fasting intermittently and over time I now follow a ketogenic diet, I eat everything, I eat vegetables, non-starchy vegetables, all kinds of meat, poultry and fish and great a great oils, fats, butter. So I don't restrict but back then those foods were also foreign to me. I think the only vegetable I ate growing up were corn and carrots pretty much. So it was a transition, but within six months I lost 60 pounds which was quite nice.

My A1c went down to 4.6 from 6.4 and Jason encouraged me to have an ultrasound done of my liver so there was no fatty liver. So then I went for a fiber scan just to confirm the ultrasound. And that also showed that my liver was pretty clear, my labs showed my liver was functioning very well and I actually started having regular menstrual cycles like the first time since I was a kid, like 12 years old when I started having menstrual cycles.

And even then it was only short-lived, for about a year before they became a little bit wonky. So that was great and then I followed up with an ultrasound and there

appeared to be no cyst on my ovaries and I continued to have regular menstrual cycles without the use of any other medication to induce that.

Bret: What a dramatic story! I mean what gets me is fatty liver at 12, diabetes at 27 and nobody addressed you diet.

Megan: No one.

Bret: They thought you're eating perfectly "and it can be that, let's look for every other possible reason besides that." And it took Jason Fung to come in and help/work with you to change things. And that sort of boggles my mind now. And fasting for you proved to be so powerful. And for so many people now is so powerful.

And I think one of the most interesting things is how it's not been part of the medical community for so long and yet is such a part of the religious community like you mentioned. So Ramadan, billions of Muslims are basically fasting for most of the day. The majority of religions have a fasting component to it. So why do you think it was so shunned for so long in the medical community and actually still is in some circles?

Megan: I think it's just something that, you know, as food has become more and more abundant and just easy access, I know for days when I'm working at home and I'm intending to fast, is really tough knowing I have a refrigerator full of bacon and eggs and great meat and vegetables at my disposal. So foods became a lot more prevalent and then we had this major sort of shift in our diet and I think we started to see a lot more carbohydrate addiction.

So you start to talk to these people, you know, I went through it myself, sort of that withdrawal from carbohydrates. I'm going to expose my brother here who finally told me on my way to this event that he was going to start fasting and going low-carb. He was at a low-carb get together in Greece on an island. There is no access to anything. He was with my husband and some of our friends. And it was a low-carb, he didn't have bread, he didn't have potatoes and he actually became almost completely delirious for about 24 hours.

He collapsed, it was a real nightmare. I was in Toronto so it was really difficult, I felt bad for my husband. So we sort of have this addiction. Actually I have a friend and he's Muslim. And he said if you look at the Koran and they talk about dates. And, you know, dates were something that were sort of supposed to be reserved... It depends, there are different variations of how you can interpret it.

And he said growing up he was always told by his parents who are much older than the regular parents, his dad was in his mid-50s when he had him, that it was something that was special sort of sacred towards the afterlife. And towards Ramadan

you are supposed to engage in a little bit at the end of Ramadan and have some dates. But nowadays he says his family has totally transformed. Now sort of the more dates you eat, the closer brings you to God. You're supposed to be eating them more often.

So going off of him here, he said just sort of within this culture is known as this big sort of shift towards the, "I've done my fast, now I should have more of the carbohydrate." I don't know if there's some sort of addiction factor here and, you know, all of our guidelines recommend that we just eat so much and so often and they are supposed to be based on science.

Bret: But they're not.

Megan: And this is really misleading to so many people. I grew up assuming that the people that put together the Canadian food guide and who educated my daughter... or that she even had education in the first place about nutrition. And that is all backed by really hard-core science here and it's not something that's really hard. I struggle with it with patients, I struggle with it with my own family. "The government wouldn't want to mislead us, Megan. They wouldn't do that." So it's just created all the sort of resistance I think towards idea of fasting, unless you are doing it for religious purposes.

Bret: And also where you come from is so important, because like you are saying, your brother was a perfect example, if you are in a heavy carb type of nutrition in carb addicted, then fasting is a lot harder than if you come from the low-fat realm. And I think that had a lot to do with it as well. So the multiple meals, frequent carbs, if you try to fast it's going to be a disaster.

So I think that brings up the importance of transitioning into a fast appropriately, because a lot of people say, "Let me give it a try." And they feel terrible, they are lightheaded and they are dizzy, and they may faint or have the experience like your brother had. So how do you work with people to say, "If you want to try this, let's get you to do this safely." What are some of your checkpoints and some of your recommendations?

Megan: So when Jason and I first started working with patients... He sees patients as a doctor and monitors them medically and then I educate them and sort of guide them on what to do in terms of fasting and diet, but fasting wasn't really welcomed by the medical community, even our own colleagues. They saw the transformation in me and said, okay, Megan's around doctors 24 hours a day, seven days a week, Megan's got a lot of common sense, we know this, she is very in tune with her body and she's

young. So she would know to seek help, there is likely nothing severe is going to happen to her, it's great.

But for these older sick patients and all kinds of medication with more complex medical issues you can't fast them. So I tried working with them on the diet, but the particular location where Jason and I practice out in Toronto it's just socioeconomically poor. And even if people were to save to buy better quality food, there really isn't anything in the area people often ask me if I live close by and there's nothing... Like there's really no good quality things.

You have to drive far to the east or to the last to get it and a lot of these people are disabled and don't have the vehicle of their own and to take public transport is out of the question so it's tough. So I'm trying to work with these patients about changing their diet and I know that low-carb should be affordable for everyone. I actually did a gardening class one day with some of them, trying to teach them how to grow their own vegetable garden on their balcony.

Bret: Great idea.

Megan: But if anything, they were sick, I mean these people had their arms amputated, such bad arthritis--

Bret: So you tried to use low-carb as the transition point? Try and get them on low-carb first and then into some form of fasting?

Megan: This is what I do. I realize that it's just tough and I do need to get them into a bit of a state of ketosis. When they're going from high carb to fasting, that's dangerous, because their insulin levels are going to drop rapidly and their kidneys are going to release all kinds of sodium, they are going to lose a bunch of water and a bunch of electrolytes at once, and they're going to fill horrendous, they're going to get nauseous, fasting is not going to be a good experience for them, nor a safe experience for some of these patients.

So the idea of getting them to follow what a lot of them consider the fancy low-carb diets was not possible. So I got them to do something we joke around and we call a fat fast for four days leading up to an actual fast. And for those four days they're only permitted to eat bacon, eggs, olives, and avocados. And if they don't eat bacon for whatever reason then they have eggs, olives and avocados, I don't care, but just those four foods.

And to be honest most of them enjoy it. Most people love at least two or three of those four foods, if not all of them. They're all simple to make. Olives require zero preparation, avocado zero preparation, eggs can be unbelievably simple and bacon,

you can throw it in the oven or in the microwave, you don't have to sit there at the stove. So it's all very simple, all very easy and things that you can get for reasonable prices within the Toronto area. So they liked it, they like the challenge, it became a game to them.

So they would do it, they would always do it. And so they would lose water weight safely while replenishing their electrolytes and then they would be able to transition into fasting quite effortlessly. And once they got into a fasting state, they felt like eating less on their eating days, they wanted to eat that bacon and those eggs a little bit more often and then because they were fasting intermittently or fasting for a couple chunks of time throughout the week, like maybe two 48 hour fast a week, they were able to actually save money.

So when they did have those community farmers markets every now and then, they could go and they could afford to buy better quality foods. So the fasting enabled the double win for these people. It enabled them to really get control of their health, start to feel better, change their appetite and their cravings and then enable them to buy the food that was good for them too in the first place. So it was a real win for everybody. So eventually everyone we got fasting we got to do low-carb as well.

Bret: That's fascinating. I love the double bonus that fasting really provides in logistics, you have to worry about it, you know, timesaving and money-saving, so many things come into play with fasting. But I want to go back quickly to something that you mentioned about replenishing their electrolytes and losing the water weight.

Because that's something that's very important for people to understand whether it's transitioning to low-carb or transitioning to fasting, that there is this natriuresis, this diuresis, that you're losing sodium, you can lose some potassium and you lose water weight. So what do you specifically recommend for people as a means to protect against that or replenish that?

Megan: So it depends on what fasting regimen they're going to do. Now most often or not, the minimum fast is 24 to 36... Well, the minimum and the most common fast we use is 24 to 36 hours three times a week for our patient population. So during this time of course we asses them in the first place.

Do they have a history of congestive heart failure, what is their kidney status, their renal status, do they have issues with elevated potassium levels already or low potassium levels, hypokalemia already? So we asses that all at baseline before you make any recommendations. We usually do start everybody off on sort of a base of 400 mg of magnesium. The serum magnesium test that we do in clinic, we do it every month. I don't know why we do it every month.

Bret: It's a terrible test though.

Megan: So we just sort of assume most of our patients at this point they are mostly quite severe diabetics and it has to be their metabolic syndrome that they're probably quite depleted of magnesium. So it's safe to do, we recommend things like Epson salt baths or making a homemade magnesium oil or purchasing one and using it topically just to help give their magnesium levels a boost.

Bret: So it's a great point that magnesium if we take too much orally, it can give us some G.I. side effects like diarrhea, but our skin is actually very good absorbing magnesium, so Epson salt baths or some topical magnesium can be a great way to do it and bypass the stomach side effects.

Megan: It's much more effective. I've had patients who clearly have magnesium deficiency. It doesn't matter what they supplement with. It's the topical application of magnesium that really improves their symptoms and makes them feel good again. In terms of salt, we really recommend that patients do drink bone broth or at least a low-carb vegetable broth with some added salt to good quality salt, the Himalayan salt, Celtic salt in it when they're especially new to fasting as their body starts to purge all that water loss.

A lot of patients are very fascinated in autophagy, so the cellular recycling process... after it won the Nobel Prize in medicine in 2016, people are very interested. Cancer rates are now through the roof and people are looking to do whatever they can. So people want to jump in on day one and start water fasting and we say no, no. Try drinking the broth first.

Alternatively some people really dislike the broth, so we encourage them to have a quarter to half a cup of pickle juice on the day and people actually like that in the summer. The humidity in Toronto in the summer is disgusting, so no one wants to be drinking warm chicken broth in the summertime. So pickle juice is an alternative at that time of year that will encourage patients to have. Of course with no sugar in it and we teach them different ways that they can make it at home themselves to supplement.

So we usually go that route first. We find though, if a patient is fasting consistently, they don't really need to supplement with that after the first 2 to 4 weeks once they start fasting. During that time the first month we see the most water loss, we see their weight loss start to stabilize at about 1.5 to 2 pounds a week after that and people start to become lazy with the broth anyways and they don't end up having any problems. Sometimes they still get more leg cramps so we increase the magnesium or

the recommendation in terms of how often they should be taking Epson salt bath or using magnesium well.

Bret: It's important, you said this, but I want to point to start again, that's for a 24 to 36 hour fast.

Megan: Yes.

Bret: So for a longer fast, then would you recommend that they'd have just saltwater or something?

Megan: Absolutely, saltwater... it really depends on the patient and their level of activity just how much we recommend. For most people in terms if they're going to have broth or pickle juice and just want to have some salty water, to have about 3 teaspoons or a tablespoon sort of max for a 36 hour period. And maybe a little bit more if that patient is being very active, doing weight training for example while they're fasting, maybe increase it by an extra teaspoon throughout the fast.

Bret: I'm sure a lot of your patients that you see are overweight, have diabetes and hypertension and I'm sure they've been told by their doctors to avoid salt and avoid sodium. Did you have to break down some barriers with them to get them to accept that? And do you have patients whose blood pressure worsens when they supplement with salt even though they're fasting? Have you experienced that?

Megan: No, we really haven't. At the start we don't see too much change in their blood pressure even when we do see that water loss, so we figure the salt intake everything sort of balancing out with their diet. But as they transition to a low-carb diet most of my patients will start off fasting immediately, but they're 20% low-carb and then build up to doing like 80% or 90% low-carb over time and once their diet really transitions to that we really see a more dramatic drop in their blood pressure.

But it's tough, I've had patients jokingly threatening me about recommending salt, saying they're going to record me and take it to the media, that I'm telling them to take all of the salt, but we spend time sort of educating them on salt. We created a special module that our patients do for training, sort of just understanding the effects of salt, the importance of salt and eliminating these processed foods from their diet.

We talk about salt being so vital for survival and we really utilize the motto that everything that is good for you, is bad for you in excess. And it's really, really bad for you in excess and as human beings we have this drive to be excessive. This is something about fasting that's driving me little a bit nuts when I do go on social media. If one day of fasting is good for me, then 100 days a fasting is good for me.

And I see this now all of the time and it's really been in the last two years and it's just so not... Everything that's good for us is bad for us in excess. Fasting, sodium, everything... insulin is a really important hormone that we know too little of it will kill us, and too much of it will also kill us.

Bret: Water and oxygen.

Megan: Exactly, so we really tried to teach the patients about this balance. So we talk to them about all of the refined process salt that's in all their refined processed foods that they are eating and show them what a regular day eating low-carb looks like in terms of sodium intake and the day of eating the standard North American diet looks like and then you have these days when you're not eating at all, but you're still consuming a lot less sodium even if you're guzzling a glass of saltwater.

Bret: It's so interesting when it comes to sodium, I think that the evidence is fairly clear that really only about 25% of the population is even salt sensitive. But yet the recommendation is everybody should limit their salt intake. And yet the data seems to suggest a U-shaped curve at the low-end and the higher end is showing an increase health, the majority of people cannot worry about their salt, but adding extra at certain times like when you're transitioning to a keto diet or when you're transitioning to fasting can be so beneficial. So you mentioned if a little is good, a lot must be better.

So that brings up the topic of different types of fasting, because intermittent fasting is a catchall phrase right now and it seems to involve time restricted eating, it seems to involve three or 40 fast and it seems to involve 10 day fast. How do you-- and of this is a big question, you may not be able to answer completely, but how do you break down what's the right level of fasting for the right individual?

Megan: So we usually assess someone in consultation and then see how they respond emotionally towards the fast. But we really believe that sort of to be insulin resistant, 24 to 36 hours of fasting is very effective doing that intermittently. That's all you really need and it creates a nice balance. The idea is to throw the body off to now let the body adapt. We always tell our patients that human beings are a dumb species.

We are not a very bright species, but we're a highly adaptable species. So if we stay in anyone physiological state long enough our body is going to adapt to it and so we just want to confuse the body. And I found that we've been doing this now for seven years, intermittent fasting 36 hours three times a week in people, treating that like a therapy, not as a diet.

We really encourage our patients to treat it like a therapy. I made such progress of my own health for six months, because I treated fasting like it was my attendance to

chemotherapy. And I wouldn't skip a treatment of chemotherapy if my friends wanted to go for lunch. And there would be days where I wouldn't feel good, but I'll be okay because eventually it would lead to my inevitable great health.

Bret: Interesting analogy, I like that.

Megan: And we really encourage our patients to think of it as a therapy. This isn't a fad diet, this is a therapy they're choosing and they don't have to choose it. They can go to the regular route, we're happy with that, we're happy to provide them with education on diet and they never have to fast and that will lead to significant health improvements as well. But if they're going to fast, they have to have the mindset that it's a therapy and they need to be dedicated to that therapy.

And the intermittent fasting just provides that right amount of chaos for the body to prevent it from adapting, creates the right amount of life balance for the patients too. I think in 2017 we developed something called fasting burnouts that I noticed, because everyone was trying to do these five day fast, we can and we go.

But they just can't maintain it socially, they're getting really frustrated and then they'd stop fasting, they'd feel bad about themselves for not fasting, so then they'd go eat that pizza and not the good kind of crust, the carby kind of crust, and then they would end up being in worse shape than they were when they first started. Then they'd disappear for a few months because they were embarrassed.

Bret: Yeah, such a great point to be able to institute fasting in a responsible way that is going to prevent that. Because let's be honest, a lot of people have unhealthy relationships with food and so there are some people who are going to be on the extremes. They're going to fast and then they're going to binge.

And is that really doing you any good? So do you have to-- it's tricky isn't it to help people find that healthy balance, and make sure they're doing it right. And that's where I like what you're talking about the 24 to 36 hours, which is you know, when a lot of people think about fasting, they think about the extended fast.

But this is not that, it's much more doable for your social structure, for your life and for your psychology as well to sort of prevent the big binges. So when you say 36 hours just to clarify you're basically talking... you have dinner Monday and your next meal is breakfast Wednesday?

Megan: That's correct.

Bret: It's good for people to clarify. Now when we talk about longer fast, we can start talking about some trouble that can happen and there has been some controversy

about this and some people have given maybe fasting a bad name altogether when they're really kind of specifically focusing on the longer fast.

So what point do we start to see problems like lean body mass break down, muscle breakdown? Do we start to see concern about permanently damaged resting metabolic rate like what happened in that study with the biggest loser candidates? When do you start to worry about things like that?

Megan: So we don't really do a whole lot of crazy long fasting in our clinic and I'll give you some examples of patients who have gone off the reservation here, taking our advice. We do utilize 7 and 14 day fast periodically. This is usually someone who comes in who is barely hanging on to the cliff anymore. And it needs to be something magical that happens to them or they're going to lose their leg, or lose another limb losing or start dialysis, something pretty clinically significant. Or their blood pressure is just really high and we need to get them to lose weight. They're younger guys.

So even in these patients it's very rare that we recommend it. When we first started IDM and first started fasting, we're going back to 2012 and I started fasting myself in 2011 and we got all kinds of flak from the medical community because of what I was doing and how could these doctors in my network be supporting me and then we just got flak with patients.

And all we are trying to do was 24 to 36 hours of fasting, we weren't trying to do anything else. We may patients sign contracts promising us they won't fast beyond 36 hours and that they would have something. But then we're getting all kinds of flak for fasting. And so my colleague Jason he speaks at a lot of conferences and he is like, "There are these studies done in people fasting for 7 days and 14 days and Ramadan and they're all fine."

And then I think we sort of got pigeonholed into maybe where this group of individuals at this clinic that has everybody fasting for two weeks at a time or 30 days... And that's not what we ever do. But over the last several years fasting has definitely become quite popular and again our nature is if something is good for us than a lot of it must be better for us. So we do have some patients who just don't listen to us not at all.

So I have this patient, I love him to death, his name's Paul, he's got a whole Twitter feed about this and encouraged us to share his story. And that he came in on this first appointment and he said, "I'm going to be your best patient ever." I said, "All right Paul, and I'll look forward to working with you." And he wanted to do a seven-day fasting. And he was pretty severe diabetic, but otherwise completely healthy, good

blood pressure... Why not? So he spoke to Jason and I and we consented to the seven-day fast.

And then he wanted to do 14 days. And then around the 14th he said, "My goal is actually 120 days." So we both said to him, "No". Half of his chart is me documenting that I've told him to stop fasting. But he continued to fast for all 120 days. Now he stopped losing weight around day 90. His blood sugar levels improved and he came off of his insulin and his metformin but they didn't improve beyond day 90.

So all of the magic for him sort of stopped around day 90. His fatty liver improved dramatically, we did a baseline ultrasound and a follow-up ultrasound. That improved, but he also had his body composition analysis done at the start and after he broke the 120 day fast. And when he broke the 120 day fast we put him on a bone broth protocol for a few days and slowly started to reintroduce food, because we never had anyone do that before nor would we ever encourage it and we completely discouraged him from doing it.

Bret: But the concern is the refeeding syndrome which can be life-threatening.

Megan: So he was perfectly okay, but there was no change in his lean mass really from start to finish. It had gone up a little bit, but he had also lost a nice chunk of body fat during that time, so you would expect it to go up, but there was really no change. Now when you fast you produce quite significant growth hormone even just in one day of fasting your growth hormone nearly doubles.

So this protects your body and helps it to grow, especially when you start to eat again and re-feed again. And he was also very active during his fast. He would send me photos or post photos on Twitter and tag me ahead of him, digging up this trench in his backyard for a garden. And he was very active, he owns a spa in a community near our clinic and he says he's on the go there moving things around up and down all day long.

So he's been pretty active. So we do see that between the 24 to 36 hour mark, during one of these longer fasts and there's good research to support it, but during the 24 to 36 hour fasts, when we do see a lot of gluconeogenesis and we do see protein breaking down. But after that 36 hours it really sort of starts to stabilize and plateau. It starts to drop and then it stabilizes in plateaus that are really long and are really low level.

So it's never really been an issue. So I work with two patient populations nowadays, especially since fasting has become quite popular. So there is the older elderly metabolically unhealthy patient and then there is the young hotshot superstar who's

got some sort of injury and wants to heal himself so we can go compete for another couple of years and be able to retire down in Miami and play golf all day long.

So most notably is Georges St-Pierre. So Georges St-Pierre is a Canadian and he's UFC fighter and he's won some world championships, he's a very, very nice Canadian man. And he was diagnosed with colitis and as a result he had to surrender his world title. And he was interested in fasting because his manager being in Canada had heard about us and his manager fasted and reversed his borderline diabetes and lost weight and as George would joke, he went from looking terrible to looking fantastic. So I figured fasting has to be good. And so he had colitis and he wanted to treat it with fasting.

So this is a man who very clearly if you look at him is about 7% body fat and just insane amount of lean mass and who trains very hard and aggressively and his livelihood depends on it. And he's human and he's like most of us, so a little bit of fasting is good for us and maybe trying to do a lot of fasting is great for us.

So once a month he does a four day fast and talks about this very openly, he talked about it on other podcasts and he's written some stuff for us. And he did a four day fast while training aggressively in Thailand earlier this year. And he has not lost any lean mass, he has only gained lean mass.

Bret: So it seems like the secret might be the physical activity and the continued training, because there are some studies that show some loss of lean body mass, but I guess I'd have to go back and look at those if they're controlled for physical activity, because it seems that might be the secret here. It's interesting that you still try to focus on the shorter fast and these longer fast are the rare exceptions.

But it seems like if the right precautions are taken, you can maybe protect against that lean body mass loss as well.

Megan: That depends on the individual and the other health challenges they have. I personally have only done 11 days once, only one time ever. I am a big believer that if I'm going to ask a patient to do something I should have a little bit of experience doing it myself. And it was shortly after the first 14 day fast we ever recommended. And I made it to 11 days, because it was my mother's 60th birthday.

Bret: It's a good reason to break it. So there's loss of lean body mass, but then there's also a reset of your resting metabolic rate. And so initially after the first couple days of a fast, the resting metabolic rate goes up. And then after that it seems to maybe stabilize and then come down at some point. And the question is where is that irreversible? I don't know the answer to that question but the study that was done at

the Biggest Loser contestant, that seemed to be irreversible, that seemed to be years later.

Their resting metabolic rate was still diminished by 20%. Some people have called them metabolically broken. And that's something that you never want to happen, so you have to protect against. So what kind of safeguards do you have in place to protect against that with fasting?

Megan: We don't recommend these longer fast because there's so much unknown about that. When I actually presented a little bit on this earlier this year in Breckenridge Colorado, there just needs to be more data on these long-term studies. A lot of the other studies to their patient population years ago is very different than our patient population now. So I think there needs to be more evidence for that. It's funny that you mentioned the Biggest Loser, so we are working with a small group of them to see the combination of fasting and a ketogenic diet what we can do in terms of boosting their metabolic rate.

So we are actually going to share that earlier next year, because we have some really exciting results. But even with this group of individuals we're doing 36 hours intermittent fasting and with that you see that it's actually boosting their metabolic rate.

Bret: Oh, it's fascinating. I'll look forward to seeing that that evidence. Now you've already started coming out with some evidence with your K-series report and this was excellent. I mean I will look this up. You had three people on an average of 70 units of insulin each and you did a 24 hour fast three days a week with low-carb and time restricted eating, so it was a combination of effects.

And they all came off their insulin and most of their oral diabetic medications which by itself is amazing. But then what really amazed me was someone did it within five days, and the range was only 5 to 18 days. It amazed me how quickly they were able to do that. So tell me about your experience with those patients. Were you surprised? How would you interpret that?

Megan: The three patients were totally picked up completely random. Jason's nephew started writing the paper and came into my office, I was really busy and he's like, "I need three charts because I have to write about patients." So I grabbed three charts plainly from the top of my counter.

Bret: So I am sure most people thought for sure these were cherry picked patients, because it was so dramatic.

Megan: We've got some really interesting data and we're actually working on collecting our data. I was hoping to present before the end of 2018 some of our data, but we're actively entering it all. It's different for everyone, it's amazing, we've seen people come off of like 200 units of insulin in less than a week, but then we've seen people where it takes a few months to come off of 200 units of insulin.

But it's pretty remarkable and most of the time when a patient comes in in consultation and they say, "I'm on 110 units of insulin. When can I come off of this, say I listen to your fasting and your diet advice?" and I say, "Anywhere from tomorrow to six months from tomorrow." Somewhere in that window.

Bret: Set the expectations.

Megan: Yeah, but most of the time within 30 days I'd say that they're off of insulin and within six months off of all of their oral diabetic medication.

Bret: Yeah, but that can get really tricky and that's one of the most important things for people to hear if they're on insulin, if they're on other oral hypoglycemics or other diabetes medications. This is where you need an expert helping you, because this can get very dangerous very fast. I'm sure you've seen cases and heard of people trying to do this on their own or trying to do it without proper supervision who've had some bad outcomes. So the insulin is one thing. I mean you need to cut the insulin down probably pretty quickly to prevent hypoglycemic episodes.

But then there are the oral agents as well and one that is coming to the news a lot is the SGLT-2 inhibitors. Which on the one hand have been praised because they're one of the few oral diabetic medications that have shown a slight decrease in cardiovascular outcomes, but yet they've also shown some evidence of diabetic ketoacidosis, the feared complication when people think of ketosis. That is completely separate from nutritional ketosis, except maybe in people taking SGLT-2 inhibitors. So how do you handle those medications?

Megan: So for a long time we tried to utilize them in clinic, again they were the one medication or class of medications that removes the sugar from the body, therefore sort of eliminating part of the problem. And there's some cool data out there sort of showing that they do have a little bit of cardiovascular and renal protection.

So again with us being a renal clinic first and foremost we tried to keep the SGLT inhibitors in play for as long as we could, but people, our patients, we see them every week for a long time, we see them every two weeks, at the very least we see them once a month.

And we see them for an hour when we see them. So we were able to pick out a lot of information with them over the course of that hour if they're experiencing any sort of side effects. But the reports now, there's a lot of commercials that are scaring the patients a little bit about them and then just at the risk of people having the sort of excessive nature now towards fasting, now we're just concerned about leaving the patients on these SGLT-2 inhibitors.

For the shorter fast we were not as concerned, but now that society is embracing fasting and doing it to the extreme, we're actually starting to eliminate that class of medications first before any of the other medications.

Bret: That makes a lot of sense. One of the things I find so interesting is people love this these medicines now, especially if you look at the most recent guidelines that came out, which by the way low-carb diets were finally mentioned in, but they're mentioned in like half a page of a 12 page document that was all about medications.

People love these medications because of the cardiovascular benefits. But let's be honest, they are pretty small and we can get the same benefits not using the medication, but using nutrition and fasting.

Megan: That's the conclusion we came to at the end of the day too.

Bret: Yeah, that makes a lot of sense. So we've talked a little bit about exercise and maintaining the lean body mass. Now some people are going to have a hard time exercising when they fast or if they do physical jobs. Is that something you address to people and you have any sort of tips for them?

Megan: That's something everyone's very concerned about I'd say every day in my email, my IDM email, I get questions about this from patients and from strangers asking about it and it's something I'm chronically tagged in on different social media. And I know Jason experiences the same and our patients especially those who have labor-intensive jobs, they are nervous about it too. And we just really educate them on the importance of staying hydrated.

If they are not going to drink broth or pickle juice, just have that salty water, drink it and teach them to hydrate. And we tell patients, you know, when you drink a glass of water with some salt, you are not instantly hydrated, it's not magic, it doesn't happen like that. So if you're planning to go to the gym at six then at 5 o'clock you should have a glass of water, a little bit of salt in it, let it properly absorb in your body and then make sure you're hydrated before and after.

A lot of people, it's funny, come back and their personal trainers for instance would be just livid with them that they are fasting especially at their age and their health

status, how could they fast, they need to focus on their fitness. But then their trainers are recommending them, you know, what a great workout they were having... "Gosh, your workouts have improved". And they would say, "You know, we are fasting."

I started doing weight training about a year ago myself and my trainer she's a female... It's more resistance out there in the female population about fasting. And she was very leery about it but there were some people that she worked with who really thought what we were doing in Toronto was cool, so she kept quiet about it and now we sort of play this game where she guesses whether I am in a fasted state or a fed state when I'm working out.

And she said, "Megan you finally have convinced me to start fasting." So she just started doing 16-8. If you hydrate properly, you're perfectly okay. And I think we've had a couple of blessings or benefits. The first one is being where we are located in Toronto. Toronto is the most multicultural diversity in the world. Over 50% of the population was not born in the city of Toronto.

And then in all of the different boroughs within the greater Toronto area, we're in the most diverse area. So when I tell a patient to fast, they say, "Okay, we did that before we moved to Canada. And there is fast food on the corner of every streets and we made more money and could afford these luxuries, so no problem.

And then those patients would do well and then they would inspire the patients who grew up in Canada like me, you know, meat and potatoes, pasta and pizza and anything several times throughout the day and those patient would see that the other ones could do it. So that was one of the blessing. The second blessing is that sort of it's in this day and age where people are really starting to question everything they've ever been told from any other doctors or media outlets about food and nutrition.

And so they see me, they hear my story, they see a few other patients and hear their stories and see that, okay, they are doing this and this is okay and you know they start to realize now that the dietary advice, the medical advice they were given was wrong. And it's not that their doctors are bad people, their doctors are poorly educated people.

And the guidelines, we teach them about how the guidelines came to be and how we know it's not really based on good science or science really at all. And so they start to question that, so they're willing to try. "So Megan if you say adding a pinch of salt to my bone broth and drinking that an hour before my workout is not going to kill me, what do I have to lose at this point? If it's worked for you and it's worked for them and all the standard advice isn't working for anybody, then I'll give it a try."

So that's sort of the second blessing is that we're at this pivotal moment, where people just don't know what to trust or what to believe so they are going to gravitate towards what they see is working and they're going to try to educate themselves and they are really open to listening to everything that I say. Our patients go through a 12 hour training program immediately after the consultation where we will wait for their blood work to come back and decide what it is we're going to do, so providing them with education.

And 10 years ago to ask people to take time off of work or from their personal lives to devote to that, they'd probably think it was pretty silly and they'd lose money from work, they'd have to find daycare for the kids and it would be difficult. But now they're making that time because they just don't know what to trust out there.

They see headlines with very poor explanations under them, so they make the time to educate themselves. So we are in this cool stage where people are really trying to get control of their own health and be their own health advocate. And I think that's why we've had a lot of success.

Bret: Yeah, that's a great sign to see people so interested in and to know they're going to get the benefit, I mean that's the thing. They're seeing other people benefit, they're seeing it whether it's online or in person, so they know it's worth the investment. Now one of the interesting things though is this whole concept of the duration of fast that we spent so much time on versus time restricted eating.

And it sounds like you use both of those. And you mentioned autophagy, there is evidence about stem cell regeneration, there's evidence about, you know, trying to keep mTOR quiet, and now there's this fasting mimicking diet that's come on the scene. So tell us, do you utilize fasting mimicking diets at all? And in whom do you use them, what version, what are your recommendations about that?

Megan: So we don't use them in our clinic, most of the patients are quite sick and it's going to take a more aggressive approach. Perhaps the fasting mimicking diet is good for the healthy individual looking to stay healthy and just shape up their eating habits and their meal timing habits. But for sick metabolic patients we usually take something pretty aggressive. Often 24 hours doesn't quite cut it.

That extra 12 hours getting to 36 hours seems to make a real difference, a huge impact on patient outcomes. So we don't we don't utilize it. Now that being said I have a lot of patients who had tried it, because the idea of actual fasting is very overwhelming to them and that they just have this addiction, you know, they've been eating every two hours they were awake for the last 10, 20, 30 years and this whole idea of going without food is very difficult for them.

I have some patients that I worked with in the past who grew up under very hard circumstances, food was very scarce growing up... I had some people that grew up during the Vietnam War and who would go months without having access to food and they suffered true malnutrition.

And for them it's a little bit more tough. And we worked with time restricted eating patterns with them instead, but even them have tried doing more of a fasting mimicking diet... We just haven't found that it worked very well for our patients who were metabolically sick.

Bret: Yeah, I think that's an interesting answer because I think you're right, people that are metabolically sick will need something a little more aggressive. And the fasting mimicking diet seems to be more on the longevity scene now, not the people who are trying to fix diabetes or some problems, but trying to keep mTOR low and trying to keep IGF-I and reduce the risk of cancer.

And it's really not even fasting, it's basically calorie restriction. So whether eating avocado and some olives and doing that for five days and keeping the calories down. It's interesting that you can see some insulin benefits, but I am interested in your experience there that it's not maybe the most beneficial approach for the people who really want to reverse their diabetes quickly.

Megan: That hasn't worked with patients and then they get really nervous that they're going to have to start fasting. We just work on it slowly, three meals a day without snacking, trying to move that dinner meal up an hour or two earlier on in the day, so there's a bigger gap between dinner and breakfast. Then letting the patients guide us a little bit. You know, if they are not really hungry in the morning time, then let's kick out breakfast.

Or if they feel pretty satiated after their lunch and they don't really feel like they need to eat dinner or socially need to eat dinner for family reasons, then try eliminating dinner and just do it really gradually. We tell our patients, you know, fasting is like a muscle and some people are just naturally more fit or inclined than others, some people have practice at it and some people have never had practice at it, they are brand-new to it. So it's going to take time to work out to where they need to be.

There's a lot of patients who I know who aren't going to benefit unless they are doing 36 hours of fasting, but I have to start them off at three meals a day and maybe a 13 hour fast and slowly transition them up to that point. And of course they do get benefits along the way, they lose some weight, they reduce their medications, but they make the most dramatic impact once I get to that 36 hour mark.

Bret: That's a great lesson, I think a great place to sort of leave this conversation with you. It's not always you just jump right into it, but sometimes you do have to ease into and be safe and you're going to get there, and get the results to do it safely.

Megan: It just takes time.

Bret: Fantastic Megan, thank you so much for joining me. If people want to learn more about you and Jason and the program you have, where can they go to learn more?

Megan: Online they can go to idmprogram.com, we have a whole bunch of information up there and they can find all of our social media links on the idmprogram.com as well.

Bret: Great thanks again for joining us on the DietDoctor podcast.

Megan: Thank you.