

Dr. Ron Ehrlich: Hello and welcome to “Unstress”. I'm Dr. Ron Ehrlich. Now if you've been listening over the last year or if you've been reading carefully the literature it seems that almost every chronic degenerative disease that's heart attack, cancer over 80 autoimmune diseases, type 2 diabetes and of course, obesity is all affected by insulin and blood sugar levels. The higher the insulin, the higher the blood sugar, the worse it is for your health. And if you have a diagnosis of any of those the chance of you overcoming them is significantly reduced. So, what is insulin and why is it a problem why is it so important when it's too high which is most common and even when it's too low? What about low carb healthy fat diet? What do we mean? What about ketogenic diet what does that actually look like?

Over the last few years this idea of time restricted eating intermittent fasting or even longer fasts that might go for a day or a few days have also become very popular. Well, my guest today is the co-founder and director of the intensive dietary management or IDM program Megan Ramos. Her co-founder is a world-renowned expert on fasting and ketogenic diets and best-selling author Dr. Jason Fung. Jason has written some best-selling books including “The obesity code” and “The diabetes code”. He has some great YouTube talks which I'd really encourage you to explore and have a look at.

Megan's role in the IDM program is to facilitate the patient's education on the IDM dietary principles and counselled them on their fasting regimes. Megan works with patients both in the office and in their online long-distance program. She travels the world educating both the public and health practitioners on this approach. I hope you enjoyed this conversation I had with Megan Ramos.

Welcome to the show Megan.

Megan Ramos: Hi, Ron. Thanks for having me on today.

Dr. Ron Ehrlich: Megan we're going to be talking a lot about fasting and ketogenic and low-carb but I wonder if you could share with our listener your own personal journey and how you came to be director and co-founder of this intensive dietary management program IDM?

Megan Ramos: Well, it was nothing that I thought I was going to do but it was absolutely everything I wanted to do. My whole life my family has been plagued by one medical issue after another. And in my mother's case I grew up sleeping on emergency room floors and if the doctors only tried to figure out what was actually wrong with her rather than just treat her symptoms because that was easier to do than to run the tests, sent her for tests, consultants with other specialists it was just easier to give her give her a pill to treat her symptoms and label her as a weird medical case and never really tried to figure out what's wrong with her. And then eventually we figured out what the problems were and were able to fix the root cause and she's doing quite well today but she's still dealing with issues from the fact that all of her conditions should two major ones that went untreated for so long because no one thought about the root cause of the disease.

So, from about the time I was nine I wanted to get into medical research and I wanted to really focus on preventive medicine and just through sort of my own family history and family connections I had a strong connection into the field of Nephrology and sort of over my

lifetime because of these family connections I watched it just sort of explode. Nephrologists couldn't get a job in the city at your I know because there was no kidney disease and then all of a sudden, every everyone disease because a diabetic kidney the boom in diabetes was causing a huge increase in diabetic disease. I have a horrendous family history for everything under the Sun it's a bloody miracle that I'm 34 years old and I haven't had a heart attack yet.

My uncle died at the age of 36 when I was nine. He is my best buddy and he died from his third heart attack. So, my whole life I've been very conscious of my food choices and that for my whole life has seemed to plague me by the time I was 12 I was diagnosed with fatty liver disease, but I was quite slender but to be honest I was tired I was always exhausted. I was always so tired like I looked at my friends and I'm like wow, like I'm supposed to be a kid I'm supposed to have the kind of energy that they have, what's wrong with me? I was weak, I was brittle. Like if I tripped in the field on a rainy day, I would break my wrists whereas my friends wouldn't. So, I was in hindsight I was a little sack of fat.

Dr. Ron Ehrlich: You were a tophus. Thin on the outside, fat on the inside.

Megan Ramos: Very fat. So, very fat liver. And when I was 14, I was diagnosed with PCOS so polycystic ovarian syndrome and they told me it was quite horrific. And they just could understand my son when my age had such severe polycystic ovarian syndrome and fatty liver disease when those are diseases of obese people, but I was slender. So, since so many doctors don't understand body composition and what's healthy and not healthy, they didn't recognize that I was a tophus I was just a little sack of fat.

As I got older, I am in University my diet my great dietary habits of following the Canadian Food Guide went out the window and I started eating fast food for the first time since early childhood. But in hindsight I realized I was fasting all the time for at university. So, during my studies I never gained weight and my conditions ever became worse. But as soon as I graduate as soon as I finished with school, I said okay you've got to get it together now you're watching all these diabetic kidney disease patients die because of their diabetes and you have this horrendous family history for diabetes, get it together.

So, I start following an old diet, so I went back to following the Canadian Food Guide and eating several times throughout the day and like within a year and a half I gained almost 100 pounds and I had become type 2 diabetic. So, I went from a little sack of fat to a large sack of fat and my greatest fear was diabetes. And I was only 27 years old when this happened. So, I was mortified. One of the reasons that inspired me to try to get it together when I finished with my studies was because I was watching people die from diabetes and I thought oh my gosh, we can't help these people. There's no help for these people like what am I going to do with my life I just want to help people, I can't. All I do is watch them die. And colleague of mine that I started working with when I was a kid Dr. Jason Fong a trauma-based apologist, he was sort of he was entering his 40s and he was sort of going through the same thing like what the heck did I sign up for? I wanted to be a doctor to help people get better and I'm just like watching them get worse and there's nothing I can do about it.

So, he had sort of a conversation with a friend of his who had started fasting for religious purposes and spiritual purposes got some really great health results. And Jason comes from a

Catholic family and so he's gone to church more regularly than I have throughout my life and I thought about lengths and how a lot of these religions have fasting incorporated in them and a lot of our patients participate in Ramadan every year.

So, I started doing some research into that and when I was diagnosed, he said well why don't you just try this? You've you're born in 84 several years after the McGovern report came out in the United States contaminated dietary fat. You grew up with this huge fat phobia because of your uncle's death, why don't you just try fasting? So, I tried fasting and then over time I found it was really easy to start cutting out my carbohydrates. Just amazing. I'm an Italian girl despite my albino appearance and my Spanish last name, I come from Italian family.

Dr. Ron Ehrlich: There's a carb challenge.

Megan Ramos: Yeah, I have my husband's last name and then I have families from northern Italy, so I had the whole blond-haired blue-eyed thing going on. I grew up eating pasta all of the time. I haven't had pasta now in a few years, four years. So, it's just really sorts of wild, but I don't miss it anymore it's all very bizarre to me still to this day. So, over time with fasting my attitude towards food changed with my body craves change and it's just been really rewarding. So, six months after I started fasting, I was able to reverse my diabetes lose a bunch of weight I lost all of the weight I gained plus some and then I was able to get rid of the fatty liver disease in the PCOS. That was several years ago and I'm still extremely healthy and happy.

Dr. Ron Ehrlich: What a great story. What a great story. And here you are only at 34 and you had just to remind our listener in case they may have missed that you were following the Canadian eating guidelines.

Megan Ramos: Yes, so it's very similar to the American food pyramid and out of the UK and Australia. It's just horrendous so all of the fats you want to avoid those anyone need all of the grains and fruits. Our food guide was it really made me sick. After I had great success, we had talked about this at the start of my journey with our colleagues and they're like you're all mad and at the time I was a sick obese girl. Once I became the healthy young woman they said okay, there's got to be more to what you're doing, and they'd be open to listening to us and then they said all right if you want to try doing this is some of your patients you have our support.

So, we started doing it with a few of our patients who are seeing with diabetic kidney disease. Within a month all of our patients who are on insulin were off insulin within six months they were off of all diabetic medications and most of them are off blood pressure medications and cholesterol medications too within six months. It was just really remarkable. My colleague Jason Fong because he's a medical doctor he's very cautious about how he does as a patient, so he sees kidney patients and I see them for IDM.

So, I will fast them. I do all of the education and the diet. But I was very hands-on with these patients and he was trying to find a voice away for as a medical doctor how he can have a voice in this and stay within his guidelines of medical practice. He started writing a book called "The Obesity Code" and he sort of wrote "The Diabetes Code" in combination with it

but “The Obesity Code” came out first. We at the time very few people were interested in publishing it, I'm still amazed this day that it got published because it was a very long journey to get that book release and it's just the last few years have been crazy. We sort of have exploded.

My whole life I wanted to be able to prevent disease and help people and I thought I was going to do that by ground-breaking medical research through the traditional academic pathways and then go off to medical school. But that turned out to be not the way and now I spend a lot of my time of course working with patients, educating patients but I spend a lot of my time to educating doctors from all over the world now on how they can advocate their team at their clinic or just themselves and work with patients to actually treat disease. We are twisted in my journey, but I ended up exactly where I wanted to be at the end.

Dr. Ron Ehrlich: Fantastic. And of course, the IDM, the intensive dietary management program is the result of all of that. Tell us a bit about the program itself. What does the ideal program entail?

Megan Ramos: Absolutely. So, we're at their time-restricted eating and therapeutic fasting program. We work with patients on when they eat. We will also help people with what they eat if they're interested. We try not to pigeonhole anybody into any one diet, but we do have a recommended diet and it is a low carbohydrate diet that we do recommend to our people if they are asking for a specific diet. But we try to find the right fascinating regimen to help treat conditions associated with insulin, high levels of insulin so all metabolic conditions like from diabetes to fatty liver to PCOS to obesity. Now we're working with other conditions cancer, multiple cirrhosis, epilepsy. So, conditions that are largely a result is sort of inflammation.

We've work from just eliminating stacking and constructing low carbohydrate meals to people who keeping up with sort of whatever diet they're comfortable with but perhaps doing some more fasting. We really believe that when you eat is just as powerful if not more powerful than when you eat, and we get pretty great results with our patients across the board regardless of their diet. But we do get the best results with patients on low-carb. So, that's why that's our main recommended diet.

We started out when we rent a room in a nephrology clinic and here in Toronto in a borough of Toronto called Scarborough and we were seeing patients there and around the same time that IDM started to take off and we were getting emails from Americans, primarily Americans and just begging for an education. They said we get it you're in Canada you might not be able to adjust our medications, we can't come to see you in person, you can't order our lab work, we understand that, but we just want an education from you and advice on what to do. And around the same time, I started dating my husband who was American and shortly after we started dating his mom became very sick and I had my first real experience with the American healthcare system and never realized how fortunate I was to be Canadian at that point.

And so, I started engaging with some of these people from the US or emailing me and finding out how much they were spending on insulin a month and some of them so much so that they

were living into their cars in order to afford their medication. And I'm listening to my mother-in-law have like a mandatory like life-saving procedure and being so happy she only owed \$8,000 afterwards. And as a Canadian, I just couldn't fathom that.

So, I talked to Jason I was just so desperate of like how do we help these people, we have to help these people. We started doing I started doing online counselling educating with people primarily from the US and as people around the globe got to know about fasting more and IBM and Jason Fong and Megan Ramos as we had podcasts and stuff become available and we're doing various interviews. I sort of branched off from not just the US, we have a lot of clients from the UK, throughout Europe, the Middle East, Australia and New Zealand, Mexico. So, it's been really amazing.

Jason and I still have the small little experimental Clinic in Toronto. I like the clinic stuff but actually we most of the people we see now are online. We work with them it's a video conferencing and we do small group counselling and we have an educator. I might not be myself right now I'm working on educating other healthcare professionals, but I trained a team of people who I oversee and they're working to help share all the knowledge that Jason and I have learned over the last several years and help guide people towards success. You have to roll with the times to. Five years ago no one was familiar with fasting like what are you talking about that's crazy and nowadays it's just hilarious because I'll be walking down the street in Toronto and there'll be two people behind me not even realizing that they're there behind me of all people and they're just healthy young people striking up a conversation about how they just did a 24-hour fast and how great they felt and it's just so amazing.

We also have sort of an online monthly membership program where people can just get some support and continuing education on fasting just to sort of help them sort of troubleshoot any issues that they have. We're trying to evolve with the times here at IDM, it's been really cool, to see such a global transformation and how people receive intermittent fasting. Doctors and people all over the world need to be completely outraged at us half a decade ago and now it's just it's just crazy to see it like on regular news channels in North America.

Dr. Ron Ehrlich: That's fantastic and we're obviously we can have links to all these but interestingly over the last year we have done many interviews about cancer about women's health PCOS endometriosis, we've done things on heart health on MS, on gut health and the common denominator that I lesson that I've learned is the more under control the insulin is the better we are in general. I wanted to talk about this intermittent fasting and all that, but I wanted to do a couple of basics here, it's an opportunity for us for our regular listeners this will just be revision. But for somebody hearing this for the first time it's good to have it all in one place let's start with insulin 101. Well, what does insulin do? When does it become a problem?

Megan Ramos: So, insulin is very important hormone in the body. It has many functions and the most weren't the most important and perhaps sort of one of the most important and the one that people commonly known about is that it helps your body metabolize glucose. Insulin is a hormone that's secreted by the pancreas and it's often secreted in volume based on the amount of glucose you consume in volume so from carbohydrates. And its job is to help

guide the glucose through the cell and open up the cell to let the glucose go in. But like everything in life too little or too much of it is problematic.

We know that type 1 diabetics, they have type 1 diabetes because their pancreas fails to produce insulin or sufficient insulin in order for this glucose metabolism to occur. So, if you think of insulin as a key that unlocks the cell to look like the glucose in type 1 diabetics, they don't produce enough keys. So, that's problematic. So, too little insulin is very dangerous and life-threatening because you don't get you don't get those keys to let the glucose into the cells. But in type 2 diabetes, too much insulin is the product that results in to type 2 diabetes.

So, too much of anything that's good for us as is horrendous situation for the body everything that's good for us is bad for us in excess. I think that's one thing as a species we just lack common sense of I'm seeing it now a lot with fasting. Well, if one day a fasting is good for us 120 days the fasting must be better for us and that's not the case. But it's the same thing. Insulin is vital for our survival without enough of it we've run into scary situation or potentially life-threatening situation of type 1 diabetes that needs insulin therapy for. But too much of it can cause a whole variety of diseases.

Insulin it's very inflammatory in the body and also causes a lot of growth. Insulin causes growth. And in adulthood growth isn't always desired. It's almost always a negative situation when you have growth. So, think of cancer for example or the growth of polycystic like cyst on ovarian and the development of polycystic ovarian syndrome. Growth is usually bad in adults. During these times you don't want to have growth. When you're producing a lot of this insulin as a result of your diet because insulin has produced sort of in response or in response to the carbohydrates you consume a couple of things go on. You have the ability for this unwanted growth and the inflammation that comes along with that and your body actually builds up sort of a resistance to this insulin.

This is how type-2 diabetes develops. Your cells become resistant to the insulin because it's just bombarded with insulin all day long. The cells themselves they become really sort of saturated with fat on the inside. They can't really squeeze anymore in there and then once they get so full, they just totally develop this resistance towards zero and insulin. I always joke. I love the singer Adele and several years ago she had an album come out around the same time I was going through a serious breakup as a young woman and she writes all these heartbreaking songs.

And so, I loved her music she was like my therapist and my best friend getting my breakup but then her album was a hit and she moved on in her life like I did and then a few years ago she hadn't heard a new album come out and I was all excited because as she was one of my favourite music artists and she had that song come out "Hello" and I think that song when about 15 Grammys that year. It was a very popular song and at first, I loved it. She is a great singer she's a wonderful vocalist and I had such a connection to her because of my past experience with her but then everybody loved it, so it became overplayed. And one day I was driving home and the song "Hello" is playing on 8 of my 12 pre-set channels in my car and I just wanted to scream goodbye to Adele and I had developed the Adele resistance.



Dr. Ron Ehrlich: Okay, I wondered where we were going with there, but I could see the insulin. That's good. So, you had Adele resistance syndrome.

Megan Ramos: Yes, and it's the same thing with insulin and the diet and the cells. They develop this resistance towards the cells.

Dr. Ron Ehrlich: Yeah, good. So, we've got inflammation, we've got too little too much. It's also about storage too isn't it? It's got a lot to do with our fat, with our obesity, I guess.

Megan Ramos: Yes, yes. When the fat cells just get too full. That's sort of when they start to start to develop the resistance towards insulin. Insulin the hormone that people can convert all this extra excess sugar in our diet to fat.

Dr. Ron Ehrlich: Yeah, so that's great that gives us a great understanding of insulin 101. Now here's another term I want to throw out to you because people hear it a lot and it means different things to different people low carb. How do we define low carb?

Megan Ramos: Low Carb. There are people that do low carb to all different degrees. With carbohydrate diets we really encourage our patients so really cut out refined and processed carbohydrates out of their diet completely. If they're going to consume carbohydrates really encourage them to consume non-starchy and fibrous carbohydrates. And so, to focus on more natural foods to foods that come from the earth. So, essentially the outside of the supermarket nothing in a box or a bag tube and rarely from a can. We encourage our patients to eat lots of lots of foods that is fibrous and non-starchy.

The biggest thing with the low carbohydrate diet is you want to consume foods that are going to limit the amount of insulin that's produced by the body. And that's what sort of leads to a successful low carbohydrate diet. And if people already have a lot of insulin in their body a lot of insulin toxicity in their body causing disease then you really want to limit the amount of insulin that you're adding into the body versus if you're a healthier individual that doesn't have toxic levels of insulin in the body. So, depending on where you're starting from you do have a little bit more room to consume more or less carbohydrates. But the bottom line is whether you're healthy or not, you want to avoid consuming foods that really raise the insulin levels.

Carbohydrates ones that are easily and rapidly digested cause larger blood sugar spikes which result in larger insulin spikes. We encourage our patients to eat a lot of vegetables that grow above the ground because they're very high in fibre, they're very slow to digest so not completely digested and they don't really result in any of those insulin surges or insulin spikes. A very little insulin production at all. And we encourage our patients to eat a lot of a healthy fat because fat actually causes very, very little in learn to be produce almost minimal. So, we want to make sure that we have enough insulin in our body but not too much of it. That's the whole goal of the low carbohydrate diet is to eat foods that don't cause your body to produce too much insulin.

Dr. Ron Ehrlich: And a lot of people that go on that also feel that artificial sweeteners are a good alternative to that low carb option but that's not quite as simple as that either isn't it?

Megan Ramos: No, it's not. And there is evidence out there to suggest that despite not always being or not always having a glucose response that a lot of these sweeteners do have an insulin response. Stevia for example has an insulin response. And several years when we started IBM there was less information out there to sort of support this. And my attitude at the time with patients I've worked with over 8,000 patients personally in the last seven years doing this. My attitude several years ago was that okay it's much better you take the stevia than the crappy table sugar.

So, take the stevia instead. But all of these patients who took it they struggled for a couple of reasons. One of them was just that the taste of something sweet made them crave a bunch of sweet things which is another chain of events but a lot of them still struggled with high blood sugar levels we couldn't get their a 1c down, we couldn't get them to lose weight. They were really struggling with fasting because they were hungry all the time. And those are all things to let me know that their insulin levels just weren't improving. And as we would periodically take their fasting insulin it wasn't changing like the patients who weren't consuming stevia. We would ask them all to cut it out and then instantly within two weeks they all had great improvements across the board.

Dr. Ron Ehrlich: Yeah, now fasting is this new and exciting thing. We were just talking about this before we started, and I've been tested in nutrition for so many years I mean 30 or 40 years and chief fasting makes so much sense. I mean we talk about ancestral past but tell us about what's the difference between time-restricted eating intermittent fasting? What are the different forms of this utilizing this fasting approach?

Megan Ramos: Absolutely. So, the most basic one that we work with patients we just call it time-restricted eating is that in a day they're not doing any great fasting but they're we live in a society where we're preached that to eat six or seven times throughout the day, we're told to snack and regardless even if that is an hour our intention, we're very busy. So, to sit down and have a proper meal those are things of the past, they're not necessarily things that are easily achievable in this modern age because life is more hectic now than ever has been.

People just don't eat meals anymore. With restricted eating we tried to get back to the basics where people are eating meals. Having their breakfasts, having their lunch, having their dinner, not snacking before a dinner. Like all of those old shows on television and how my grandmother's say to me I wouldn't let your father eat before dinner and you had to save as appetite for his dinner and if you don't eat to satiation at dinner well then, you're going to have to starve for the rest of the evening. That old-school mentality. We really try to get back to basics.

Our patients are just eating their proper meals breakfast, lunch, and dinner and not snacking and trying to eat their dinner at a more reasonable hour trying to make that a priority so there is a little bit of a fast from dinner one night until breakfast the following day. That's what we call time-restricted eating where you're just eating meals and so you're just having these little bumps in insulin about two or three times a day depending on whether you're eating two or three meals a day.

With intermittent we have our patients intermittent fast meaning they do a day of fasting and a day of no fasting. It's intermittent so Monday, Wednesdays and Fridays they may fast Tuesday Thursday Saturdays and Sundays they were not fast. Still on the non-fasting days we encourage time-restricted eating. Don't snack, fat consume your meals but fast between meals.

Now for intermittent fasting regimens we usually recommend a 24-36 hour fast. We find that they work very well for weight loss and diabetes reversal, so a 24 hour fast would be fasting from dinner on Sunday night into dinner on Monday night so you're missing breakfast and lunch on Monday, so you essentially miss two consecutive meals. Or a 36 hour fast would be fasting from dinner on Sunday until breakfast on Tuesday. So, you're just not eating all day Monday. We found the best success of our metabolic patients is doing that three times a week since it does take people a while to sort of cut out the carbs and need more lower insulin producing diet. So, three times a week seems to work well.

So, intermittent means is there's variation period of fasting followed by a period of feasting and a period of fasting in a period of feasting. With extended fast these are where people go a few days so three to several days of just straight fasting where they're just sort of consuming water for the most part, occasionally tea and coffee and broth depending on their goals with fasting and they'll do that for about three to seven days sort of at a time. And our program we usually cap people at 7 or 14 days depending on whether we're working with them online or in the clinic. And we'll do that sort of periodically.

We do the longer fast more so for disease prevention and just to really shake things up periodically when someone who to have very stubborn insulin resistance or a very low metabolic rate, we'll try to do an extended fast somewhere from three to seven days just to shake things up to really force the insulin levels to go very low during the fast. We find that usually breakthroughs any plateaus that our patients experience.

Dr. Ron Ehrlich: And what about 16-8? Does that fit under the time restricted eating?

Megan Ramos: Yes, that would be more of a time restricting eating where you're just consuming two meals a day. Most often people elect to skip breakfast and they consume lunch and dinner. I actually do the opposite. I eat breakfast, but I eat it for hours after I wake up and then I lunch and then I don't eat in the evening time but that's that works better for my schedule. People can do either/or but for our patients a 16-8 where you're just having those two consecutive meals and missing either breakfast or dinner that we actually consider to be an eating day and that's what we encourage a lot of our patients to try to achieve for their eating days. That would be kind restricted eating in our program.

Dr. Ron Ehrlich: And how do we prepare for fasting? Like if we have accepted that this is something I really need to explore because our blood chemistries are all stuck and our weight is stuck no matter what, okay I'm going to go down this path of fasting. How do we prepare for it? What are some of the challenges?

Megan Ramos: There's a couple if you're coming off of sort of a very high carb diet, your body's going to be pretty saturated with insulin because you're eating carbs all of the time. So,

if you immediately jump into a fast your insulin levels are going to drop quite rapidly. When your insulin levels fall very rapidly a message is sent to your kidneys saying release water, release water. So, you'll urinate out a lot and often if you're coming off of a high carb meal you might experience diarrhea as a result of your body just trying to find ways to eliminate that water. People often find that they become dehydrated. As a result, their electrolytes get pretty depleted.

So, in terms of preparing for a fast there's a few approaches that we take with patients. And one of them is starting a low carb or ketogenic diet prior to them starting a fast. This way their insulin levels drop as the person can regularly sort of eating meals so they're able to replenish water and electrolytes a little bit more effectively and then that way when they jump into a fast their insulin levels aren't going to drop as dramatically right off the bat and we prevent that dehydration and feeling unwell from the low electrolytes. Sometimes patients will prefer to adopt a low-carb diet, or an extremely low carb version of the low carb diet is called a ketogenic diet or people consume very minimal carbohydrates if any. And we'll ask them to do that for about three or four days leading up to their very first fasts and we find that prevents a lot of issues with electrolytes.

Alternatively, if someone is just more hesitant about fasting and they're already following a relatively good diet of a moderately low-carb diet or ketogenic diet, we would just cut out snacking. We would ask them to sort of move their evening meal up and then when they were feeling comfortable with that and we're able to retrain themselves actually sit down and take the time to have three proper meals a day and then to start cutting out breakfast and then lunch or dinner depending on what's easier for them. And then each week just trying to sort of scale it when one meal until they're able to start fasting.

Dr. Ron Ehrlich: Now one of the definitions that I was going to ask you about and you've just raised it is the ketogenic diet. And just again remind our listener about what the principle behind that and what we're trying to achieve with the ketogenic diet.

Megan Ramos: Absolutely. So, with a ketogenic diet you're definitely not producing very much insulin because you're keeping the carbs extremely low. And what's sort of different between a low-carb diet versus a ketogenic diet is on a low-carb diet your body is still fuelling on carbohydrates. It's also fuelling on some fat but it's still fuelling on some carbohydrates. But when you're on the ketogenic diet you switch fuel sources almost entirely from glucose from sugar fuel to fat fuel. And the fat fuel is ketones, so that's what determined the ketogenic diet. So, you go from glucose fuelling, sugar fuelling, the ketone fuelling or fat fuelling.

So, when you're in a state of ketosis, your body's actually fuelling off fats. Most of your organs are fuelling off of fat and tissues are fuelling off of fat and it's quite a beneficial state, it's very anti-inflammatory to fuel on ketones versus fuel on glucose. It's like a very high-octane fuel for your body and you want to think of your body as a Ferrari not a 30-year-old discount car. You want a fuel off the high the best high octane that you can. So, ketones are a very good fuel source for your body major organs like your heart and your kidney actually prefer to fuel off of ketones and glucose. They function very efficiently on them. When

you're in a state of ketosis you're primarily fat fuelling rather than sugar fuelling. That's the slight difference between the keto diet and a low carbohydrate diet.

Dr. Ron Ehrlich: And of course, if by any chance an individual happens to have some spare fat lying around their body which according to the statistic sixty percent or something of us do then you'd be burning that as well.

Megan Ramos: Yes, absolutely.

Dr. Ron Ehrlich: And again, that relates back to the insulin level which is what we started part of our conversation about.

Megan Ramos: Yes, yes. If you're consuming the ketogenic diet, it's a primarily fat-based diet and when you eat fat your body really is not producing any insulin and response the fat that you're consuming. It's very minimal anyway especially compared to carbohydrates. In order for your body to fuel off of sugar it needs insulin but in order for your body to fuel off of fat or insulin, it doesn't need insulin for that to happen and so you're really minimizing any excess insulin production by the body from your diet.

Dr. Ron Ehrlich: And you mentioned the preparation of fasting and the carbohydrate go on to a low carb diet because of this loss of water and everything. But keto flu is another thing that people experience. Can you just tell our listener what keto flu is and that's a surprising fix for it I thought it was interesting?

Megan Ramos: Keto flu. So, you literally feel like you have the flu. You feel weak, feel a little bit nauseous and usually this is your body sort of transitioning from a state of fat, carb feeling, sugar feeling to a state of fat fuelling. If you think of it, you've had the sugar burning factory running in your body for a very long time and the fat burning factory's been sitting there dormant. Maybe for your whole life. And now you're trying to get that up and running and at full speed there's going to be kinks. The opening of the fat burning factory isn't going to be very easily.

One of the biggest issues now is as you transition from the sugar burning diet to the fat burning diet, you're no longer requiring insulin to be produced in such large quantities because your little eliminating the sugar reducing it drastically and consuming the fat which isn't causing insulin levels to go up. And so, as you start bringing a body fat your insulin levels are going to start to drop. Your internal insulin levels are going to start to go down and again the signals to the kidneys to let go of water.

So, during sort of the keto flu you're transitioning from the sugar burning mode into the fat burning mode you're getting this drop-in insulin levels and you're getting the release of water which can make you a little bit dehydrated and not feel so well so that's a contributing factor. But also, your organs have to transition from fuelling off a glucose to fuelling on ketones. That takes a little while for to adapt and then also sort of least the response of the body excreting more sodium in the urine too which makes you feel a little bit more dehydrated. The easiest solution for it is to really increase your water and salt intake. That's what we do

with patients for our patients who are new to the program and we know they're coming off of horrendous diets.

My diet used to be horrendous despite it following the Canadian Food Guide so I'm not saying that everyone's out there eating fast food all the time but lots of grains, starches, lots of fruits. The only thing we really recommend is for our patients to be diligent about their water and salt intake. Most people don't drink very much the day because they're eating constantly throughout the day and a lot of food has water in it.

So, people forget that they need to drink throughout the day because it's a habit that we don't really have because we have the habit of eating to get our water intake route rather than getting a glass of water and just drinking to get our hydration. And so, we encourage our patients to be very mindful, try to consume at least two litres of water a day and to take salts throughout the day or to take chicken stock, chicken bone broth or beef bone broth just to help them get through the fast. Something else that helps too is increasing your fat intake can also help speed up the side effects of transitioning from a sugar burner into a fat burner and that can reduce your symptoms as well.

Dr. Ron Ehrlich: Tell me when we were on the fast, so back onto the fasting, what do you get? Is it just water as coffee? It was coffee am I right or wrong? Does coffee stimulate insulin as well? I be hearing that at one point, but I may be wrong. What should we be doing when we're fasting?

Megan Ramos: Yes, absolutely. So, most of our patients who are fasting to treat their metabolic syndrome we permit them to have water, tea, coffee and broths when they're fastening. We ask them to consume minimal broth it's usually something that we only ask them to consume at the start if they're brand-new to fasting just to help prevent against the symptoms of the keto flu. But once they've been fasting for a couple of months, we ask them to cut out the broth when they're on a fasting day. Tea usually is quite benign in patients, so it'll encourage our patients to have herbal teas if they wish to do so during a fast. Coffee is problematic for some people.

We definitely know in certain individuals it has an insulin response and we'll have people say I drink a cup of black coffee and it raised my blood sugar several points and I felt hungry afterwards pretty ravenous. And the caffeine in coffee it causes your body to release cortisol and cortisol is a stress hormone and cortisol forces your body to release extra insulin. We see this hormonal response being much greater and more significant in some people than others.

We always caution our patients if they are drinking a few cups of coffee a day when they're fasting and they're not seeing their blood sugar levels start to come down if they're really struggling with their fast because they're feeling hungry then to try to cut it back to one or no coffees throughout the day. When we're treating a patient with a neurological condition or cancer for those patients we just stick to water. Just to play it extra safe. So, those patients will consume water and some salt if they absolutely must before or during fasts.

Dr. Ron Ehrlich: And when you come off the fast be it 1 2 3 or whatever number of days, well, what would be the preferred way of doing that?

Megan Ramos: For longer fasts the biggest issue is your body only has so much energy every day or the energy dollars every day. And if you're spending money on producing digestive enzymes that you don't need because you're not eating, well after a few days your body's going to say well hey you're not eating so I'm going to take this daily energy budget and I'm going to direct it elsewhere and I'm going to stop paying to have these digestive juices being produced.

So, sometimes when you start eating something you eat it and then your body says no, Megan's eating again dammit we've got to produce these digestive juices. But sometimes it takes a while, and everything can go for you or back up, so people can occasionally experience some nausea or some diarrhea and then of course, GI distress when their body is trying to figure out what it's going to do with this food.

Usually, the most problematic food items are eggs and nuts. They're both relatively difficult to digest on the body once you're leaving a fasted state. So, we usually encourage people to forget eggs and to forget nuts for the first meal after our fasts. And actually, it's a one meal that we ever encourage people to just take a seat step back when the fat and to focus on more non-starchy fibre and a little bit lean or protein for that meal because those are typically the fibre sort of sits in the tummy for a while stretches out, it doesn't cause as much distress. Animal fats seem to be also very problematic and seem to lead to a lot of GI distress because they're typically a little bit more animal fat and protein or a little bit more difficult for a person to digest post fast. So, we just sort of stick to more leaner proteins, more non-starchy vegetables and limit the fat especially the animal fats and eggs and nuts when breaking a fast.

Dr. Ron Ehrlich: And tell me, how does this differ with age? What would you say about fasting and kids?

Megan Ramos: Well, kids you want growth right. So, if you're fasting in adults to prevent growth or to help eradicate growth by suffocating the insulin and really dragging the insulin levels down. Now in children you want them to grow but does that mean that they need to eat all day long? Absolutely not. I'm 34 I'm going to start a family in the next couple of years, my colleague Jason Fung he's got two kids and they're around the age 15 and 12. And he said they don't need to be eating from the moment they wake up to the moment they go to bed. When we do have people that ask us about children and he said breakfast lunch and dinner you want them to grow but you want them to have these little pulses of insulin being produced throughout the day. You don't want to have a steady stream of insulin being produced for the entire 14 or 16 hours that they're awake every day.

His kids I said they would wake up and eat, they go to school and they'd immediately give them a snack. They'd have recess and have a snack and like it just never-ending. They would in the they play soccer and take two breaks for snacks and they would have a snack before bed. And both of them had a little bit of a weight issue so they cut out the snacking in their house and they really focus on having proper meals and his kids they've got great muscle mass. Like to look at both of them now there's no excess body fat on them. They're nice, strong, healthy well focused energetic children. With kids we sort of encourage eat dinner and then fast until breakfast the next day so they're getting in somewhere between 12 to 14

hours. But really just trying to eliminate the snacking and just to maintain a healthy childhood. Not growing up like me eating 12 times a day and developing fatty liver at the age of 12.

Dr. Ron Ehrlich: It's interesting isn't it? Because type 2 diabetes used to be referred to as late-onset diabetes and we've kind of dropped that term now because kids are getting type 2 diabetes.

Megan Ramos: It's absolutely wild. I said today at the clinic a year or so ago I said I'm like I don't know I'm just getting older and the patients are seeming younger or if they're just really younger. So, we had some summer students that I asked them to do an analysis and the average age of people coming into the program every year is dropping dramatically and I just can't believe the number of people under the age of 25 that I see that have type 2 diabetes is just so mind-blowing.

When I was first diagnosed with type 2 diabetes and I said to my family doctor she said we'll make it miss your family history and I said well how come my grandmother was able to make it 75 and how come my father was able to make it to 55? Why the heck am I getting this at 27? What was my grandmother doing so different? Like what's so special that her diabetic genes that are different from my diabetic genes that gave her an extra 50 years on me before developing diabetes? Like yes sure there's a genetic component there, a predisposition but what changed? And if it all if you look back at it my grandmother for most of her life till her midlife ate very well. Ate real butter, didn't snack around meals, ate three meals a day, didn't eat late at night while watching TV. And my father didn't start doing that until his 30s and I was born doing that. That's how I was raised and sort of 30 years after each of us transitioned our diet, we all develop diabetes roughly 25 to 30 years after the McGovern report in 77 my grandmother changed her diet towards low-fat, high-carb started eating more often because she was more hungry and within 30 years she had developed type-2 diabetes. Same with my father and I just always grew up eating that way because I was born in 84 and then had this extra paranoia because of my family history so I very much stayed away from fat and made a lot of process as a result I thought was good for me. So, there it is about the diet. It plays a big role this diet.

Dr. Ron Ehrlich: Now if someone was listening to this for the first time and if their regular listener to this podcast, they haven't but let's imagine they have, and they wanted to implement these changes and wanted to get into the fasting etc. what would be a few tips that you might give them to get them going? What would be a couple of tips?

Megan Ramos: Yeah, I would just go at it slowly because most of us even doing too much of anything again can be a bad for us or too much of a shock to our system. So, just go at it slowly. Start cutting out snacks, try not to eat late at night especially and then slowly start cutting out one meal at a time and let it happen a little bit more naturally. Don't try to force your body into doing several days fasting if you've never done any fast before. So, cutting out snacks is extremely, extremely powerful. So, that's where I usually recommend people start.

And then also with back to the hydration, people just typically don't drink water especially if you're coming off of drinking lots of sodas and juice. People tend to not drink water. We

always recommend to our patients that are new that they drink two cups of water for every cup of tea or coffee that they drink through a day just to help train people to drink water and so give them this little mini goal. Okay, have two cups of water before I have my next cup of tea. And this will just really help keep you hydrated and prevent against the keto flu.

Dr. Ron Ehrlich: Right. Now listen, this has been fantastic we're coming to the end of it all I just wanted to ask you one last question and that is taking your step back from your role here at IDM and considering we're all on this health journey in our lives, what do you think the biggest challenge is for people on that health journey through life in our modern world?

Megan Ramos: Carbohydrates. I have people with this sort of real serious food addiction. It's tough and I have myself, I'll be the first one to say it, I didn't go into a gas station for one year. I didn't go into a coffee shop for one year. If I couldn't pay for my gas at the pump, I would go to a different gas station. If the coffee shop didn't have a drive-through I wouldn't go to it. We're just sort of bombarded by these carbohydrates is a highly processed refined food that they engineer to be very tasty and addictive that when we consume cause a whole hormonal cascade that makes us crave them and want them even more and makes us sick. And I think one of the things that people struggle with the most is just that society no one everywhere you go is bombarded with carbohydrates.

A friend of mine, Ken Berry posted a picture of the other day and I think he was in a pharmacy checkout and as a pharmacy checkout it was just all like this big rack of candy. And he's like of course, you take the candy, so you can get more sick so you can come back to the pharmacy and buy more medication. It's just ludicrous and this is how the government tells us to eat. Eat these carbohydrates. And my mother still to this day despite all my success and everything I do with patients and the results that we get, she still doesn't believe that the Canadian government isn't looking at what I'm doing and thinking okay, if this is what's really best for people then we've got to promote this. It's hard for her to understand that there's different lobbying groups involved what actually goes into making our food guidelines. It's tough.

So, people genuinely believe the governments have our best interest in mind, that money doesn't matter, that they want our best health. They're making them food guidelines based on actual science and good science at that which we know that they're not. So, you have people who chronically don't understand. I feel bad for my husband. I went low-carb a few years before I met him so I was able to stand firm with my mother but every holiday she buys my husband like three pies because she knows that one of his biggest vices was pie and she'll say oh but it's Canada Day or it's Labour Day or Thanksgiving like you can just have a slice of pie. And so, we get all of the pressure from the people who love us to deep these foods.

A patient of mine the other week was telling me that his father-in-law passed away and his wife is going through a bad time and she sought out comfort and chocolate cake. I asked him to join her for chocolate cake and he said no he didn't want any chocolate cake, but he would come sit with her. And she yelled at him and said you must not love me if you're not going to eat this chocolate cake with me right now. So, it's tough. We're in a society where I think on a subconscious level everybody's got to know this sugar is bad for us but, yet the government

keeps saying that it's okay and we're just bombarded with it everywhere. That makes it very difficult I think and that's the biggest struggle.

A patient of mine will have a bad day go to get gas and then be waiting in line to pay for their gas at the station and then they're just bombarded by all these foods that they know taste well. They're engineered to taste good and that they consume them all to excess in the past. It's tough, we often liken it, we're like drug addicts but we're living in like a crack house. Everywhere we go it's very tough for people.

Dr. Ron Ehrlich: Megan thank you so much for joining us today. We've covered some great territory there. We're going to of course have links to the IDM site. And it's terrific what you and Jason have been putting together. Thank you so much for joining us.

Megan Ramos: Thank you! Thank you, Ron, and thank you everyone listening today.

Dr. Ron Ehrlich: Well, I've often said, if you follow the standard dietary advice, be it the food pyramid or the MyPlate or the healthy eating guidelines be it in Canada, the USA or Australia, I believe you are buying into an economic model that is literally fed by the chemical and processed food industries with lots of industry-sponsored peer-reviewed evidence-based medicine to support it. It's then managed by the pharmaceutical industry which also sponsors many world experts providing and I quote an evidence-based approach.

I believe the term is overused or abused and it's sometimes very difficult for busy health practitioners who genuinely want the best for their patients to tell the difference between evidence-based medicine and evidence-based marketing. And if the evidence is anything to go by and if we accept "We are what we eat" then the epidemic is preventable chronic degenerative diseases, well, then I think we need to rethink how when and what we eat.

Interestingly Megan mentioned that the "when we eat" may be as important as "what". I actually think she said more important. We have become very preoccupied in the last 10 to 15 years with ancestral diets or paleo diets. What did we eat throughout human history?

Now I did my first nutrition course in 1981. So, I've been interested in this subject for many years, but one important point has almost always been overlooked. Throughout human history we evolved to deal with hunger and scarcity. There has never been a time in human history when we have been exposed to the overabundance of seemingly cheap food. And I say seemingly because when you factor in the cost of your own health and the health of the planet, well, it comes as quite at quite an expense. And we're not just exposed to it, it is aggressively and seductively marketed to us.

If you go on to the Australian Diabetes Council website and I've done this a few years ago when they were celebrating their 75th anniversary and they provided a 10-step program for living life with diabetes. Step one, eat carbohydrates with every meal and choose low-fat options. Perhaps the key word there and in case you missed it was living with diabetes. Follow that advice and you surely will live life with diabetes. Remember, over 80% of diabetes is type 2 diabetes which is entirely preventable through diet and exercise. Also,



remember if you're exploring fasting approach this slowly and prepare. Transitioning from the healthy eating guidelines type diet to fasting is not the way to go.

If you have a medical condition an underactive or overactive thyroid consult with an integrative medical practitioner, a naturopath, nutritionist or dietitian who is familiar with the issues to guide you on your way.

I'm exploring this myself and I've found it works really well. It's certainly cheap, it could not be cheaper, and it taps into millions of years of human history. I mean this is the way we were what we've evolved. Now we'll have links to the IDM website and it's got some great resources and there were those YouTube clips of Jason Fung that I was also referring to.

By the way, go onto my website and have a look at some great new resources. We've got eBooks, we've got webinars and an online course.

So, until next time, this is Dr. Ron Ehrlich. Be well.

This podcast provides general information and discussion about medicine, health and related subjects. The content is not intended and should not be construed as medical advice or as a substitute for care by a qualified medical practitioner. If you or any other person has a medical concern, he or she should consult with an appropriately qualified medical practitioner. Guests who speak in this podcast express their own opinions, experiences and conclusions.