The Fast Diet and Fast Exercise:  
A Special Interview with Dr. Michael Mosley

By Dr. Joseph Mercola

DM: Dr. Joseph Mercola

MM: Dr. Michael Mosley

DM: Is there such a thing as a fast diet? Hi, this is Dr. Mercola, helping you take control of your health. Today we are joined by Dr. Michael Mosley, who is a non-practicing physician like me and who’s actually written the book *The Fast Diet*. He is going to help us answer that question today. Welcome and thank you for joining us, Dr. Mosley.

MM: [It’s my] absolute pleasure.

DM: I’m so glad you’re on because you really helped popularized one of the most powerful medical interventions that I’ve ever encountered for helping people normalize their weight. I think many people have... We’ve had your videos on the site before, so a lot of people are familiar with you and maybe some of them read your book, which is a bestseller I understand and is available in 42 countries. Maybe you can give us a little bit about your background on how you first became interested in this.

MM: Sure. I mean, it was just over two years ago. I went to see my doctor for a routine medical. She called me back and said, “I have some bad news for you. You are a diabetic. Your blood sugar is way too high and you also have very high cholesterol.” At the time, I was slightly overweight. I’m 5 feet and 11 inches and I was about 185 pounds to 190 pounds, so I’m not huge. Unfortunately, I had that sort of fat. It was internal or visceral fat growing inside my gut. I had something we should call metabolic syndrome. My doctor wants to start me on drugs. But I said, “I want to see if there’s something better and alternative out there.” I started exploring. I came across intermittent fasting. I’ve never really heard of intermittent fasting before.

DM: How did you come across it?

MM: I just started to read articles about it in the newspapers, online, and things like that. I may well have read about you because I know you’re a big fan of intermittent fasting and I’m also a fan of your work. It may well have been you. [Inaudible 03:48]. I went to see the editor of a science strand in the BBC called Horizon, which is the longest science series in the world. It’s now celebrating its 50th anniversary. I said to him, “Wouldn’t it be interesting to make a film – I’ll be the subject – in which we look at intermittent fasting and see if it does anything for my health?” He commissioned it and I went off to find out.

I ended up testing all sorts of different forms of fasting, including alternate-day fasting. Eventually, I came up with something that I called the 5:2 Diet, which is really counting calories two days a week and eating normally the other five days. I stuck to that for about three months. During that period, I lost about 20 pounds of fat, my body fat went down from 28 percent to 20 percent, and my blood glucose went back to normal. That was two years ago and it stayed completely normal since.

DM: Are you still eating the same way?
MM: I normally sort of skip lunch or I do a day or so a week. I’m just kind of... What happened is actually I probably began to lose too much weight. My wife, who’s a doctor, said, “You’re looking a bit gaunt.” I decided I would sort of go easy on it a bit. These days my weight is around 168 pounds. My blood glucose is fine. My cholesterol is fine. My blood pressure is great. I don’t have to, you know. I do eat packed one day a week. I don’t really have to think about it. I just do it naturally now and I don’t even have to worry about what I eat. I just stay completely normal. I have to say it’s been absolutely life-changing.

DM: That’s terrific. Now, just out of personal curiosity, what type of physician were you before you…

MM: I was a general physician. I had probably intended to become a psychiatrist if I had stayed within medicine. I wasn’t quite sure which way I was going to go. I was very interested in why people do the things they do. And then I got sort of seduced, if you like, into television. I always meant to go back, but that was 28 years ago.

DM: So, your primary job is a journalist for media in the UK?

MM: I work mainly for the BBC. I also write articles for The Times, The Telegraph, and some of the national newspapers.

DM: Terrific. The video or the documentary that you made on this approach was actually... Well, you were named the Medical Journalist of the Year by the British Medical Association. Was that for this video or was that for your other work?

MM: It was for a previous program I’ve done, which was also very interesting. We’ve made that actually 20 years ago about a self-experimental called Barry Marshall, who demonstrated that some... Do you know Barry?

DM: Well, I don’t know him personally but he was one of my first ventures into alternative medicine. I was really severely reprimanded for seeking to apply his recommendations when I was in residency training.

MM: Absolutely. He was [prier 06:50] when I met him. He was claiming that stomach ulcers are caused by a previously unknown organism called Helicobacter pylori. Nobody believed him. It didn’t work on animals so he swallowed it himself. About three days later, he called me. He started vomiting blood and he was absolutely delighted and thrilled. He’s more than less delighted.

But the idea that bacteria can cause ulcers is now well established. At the time, if you had an ulcer, as you probably very well remember, you had to take drugs. Drugs are supposed to be 500 dollars a year. If you stopped taking them, the ulcer came back. Barry said, “I can cure you for five dollars.” He completely revolutionized that branch of medicine. He made me really, really interested in self-experimentation. That’s why I launched off into my career.

DM: Well, that is interesting. Yeah, he did his work. Most of it was... I think his original was published in The Lancet in the late ‘70s.

MM: It was, yeah.

DM: And then he was finally vindicated because I think in ‘95, he was awarded the Nobel Prize in medicine for that discovery.
MM: Absolutely. I made the film with him in 1990. At the time, it was extremely unpopular. But when he received the Nobel Prize, he actually cited what I had done in helping him achieve his goal. I was absolutely delighted to have him...

DM: Well, that is just… I had no idea that you were involved with it. That is just terrific. It’s a…

MM: It made me really interested in stuff, but sometimes they’re a little bit off the wall. Intermittent fasting really did fall into that category when I started to look at it. But my eyes were just opened. I realized there’s so much science, so much research that’s going on down the years.

DM: Now, I have a really good question for you with respect to how you chose the 5:2 method, because from my understanding of the area, there are really three different ways to do it. There is Krista Varady’s approach, which is basically one day on and one day off. I think you interviewed her when you…

MM: Yes. That’s right. Alternate-day fasting.

DM: Yeah, the alternate-day fasting, the way I like to recommend it (which is essentially a 14-hour fast and then having one or two meals), and then the 5:2 fast. I don’t know if there are any other variants. Those are the only ones I’m aware of. But how did you choose the 5:2? How did you make that decision?

MM: Well, I started doing a five-day fast, an absolute fast, which I did with Dr. Luigi Fontana.

DM: Oh, sure. I remember.

MM: That was very effective in a sense that I lost a bit of weight. Some of my biomarkers, my chemistry biomarkers, improved a great deal. But I found it quite difficult I have to say.

DM: Okay.

MM: I moved on to alternate-day fasting because I met Krista. She was very, very convincing. But I found that a bit inconvenient. And then I came across some work done in England by Dr. Michelle Harvie, which was doing two days a week. I thought, “I can handle two days a week.” In a way, I kind of combined the number of different techniques together and ended up… And strengthening our force there, one of my inspirations, if you like, was the Prophet Muhammad because he had told his followers they all need to fast on a monthly basis for Ramadan but also cut to your calories two days a week – Mondays and Thursdays. That’s what I did.

[----- 10:00 -----]

DM: I didn’t realize there was a spiritual component behind your recommendations.

MM: Absolutely. I mean, I’m not a very religious person, but I do believe that great religions have a lot to teach us, whether it is mindful meditation or indeed some of the benefits of fasting. I think the reason that these ideas persist is there is something very profound about them.

DM: That’s terrific. I’m wondering, too, if you could comment on what I perceive to be one of the most incredible side effects of this, and that is really the disappearance of hunger. I mean, I was adamant. I’m a fellow of the American College of Nutrition. I’ve studied nutrition for 30 years and I never encountered, personally encountered or experienced that before, where your hunger cravings just disappear.

MM: Absolutely. I would have bet a lot of money that that wasn’t going to happen because pretty well everything, like you, that I have read or experienced told me that when you get hungry, you just get more hungry. As you say, it’s a strange thing. I can’t really explain it. I know one of Krista’s explanations is
that possibly when you go on a sort of much reduced diet, the stomach shrinks. It could be that you’re starting to get used to it.

But a lot of people who’ve read the book and who have contacted me by my website, which is TheFastDiet.Co.UK, say exactly what you have described. They’re astonished to discover they’re back in control. The hunger doesn’t dominate their lives. And though, yes, the first few weeks can be quite tough, but generally after that, you find that you can kind of ride it. That’s certainly been my experience.

DM: Yeah, I think it may have to do with… Ultimately, it’s energy. Why do we get hungry? We get hungry because our body needs fuel. But the vast majority of people in the world, certainly in the developed world, I would say probably over 95 percent or maybe over 99 percent are eating foods and diets at a method of eating that essentially severely inhibits their ability to produce lipase and use fat as an energy source, because it’s inhibited because of their high insulin levels.

MM: Absolutely. I think that’s what we’re just beginning to discover just what insulin is capable of – indeed the role of insulin not just in managing blood glucose but also in managing fat deposition and probably its link with cancer and also with dementia. Insulin seems to be the new sort of guy on the block although it’s been around for a long, long time. I think we’re just beginning to grasp just how important it is.

DM: Excellent. So, you’ve been doing this for about two years now.

MM: Yes.

DM: Okay. In the two years, have you refined the process in any way? Have you made any observations that really tweaked it or improved it?

MM: Well, I’ve had a lot of conversations with people who’ve tried it. I mean, I know of [inaudible 12:54] that I know. We’ve been tracking about 5,000 people who’ve been doing it now for a considerable period of time. I get a lot of feedback. Obviously, as you’d expect, there’s a huge variability. Some people find that they begin to lose a lot of weight and then they kind of plateau. For them, I recommend that perhaps they try alternate-day fasting to kind of accelerate the process on. I haven’t got a great deal of experience with what you described, which is essentially going for 16 hours or so without food and then having a single meal or two meals. But I would be very interested to experience and explore that because I’m always up for trying new things.

DM: I suspect it’s a bit more aggressive than your intervention and probably more appropriate for the vast majority of people who really need to kickstart their metabolism. But I do think that most people once they sort of reach their plateau of optimal metabolism are going to encounter what you did with your wife. They’re going to look a little bit too gaunt and then they have to start increasing their food intake.

MM: Absolutely. I’ve had some people say to me, “What do you do next?” I say basically just “Try to measure it against your weight. Go on the scale and fairly regularly measure your stomach. That’s probably the most important predictor. If you’re creeping up, be a bit more aggressive. If you obviously look a bit gaunt, then ease up a bit.”

DM: Yeah. Do you have any specific guidelines [inaudible 14:19] that you give them for measuring their waist size?

MM: The thing I read is that ideally your waist should less than half your height. I’m just under 6 foot. Ideally, my waist should be obviously less than 36 inches. I’m only about 32 inches. That seems to be good. We know that it’s the sort of fat that’s infiltrating the liver, pancreas, and things like that, which puts you at much greater risk with diabetes and heart disease. You kind of want to keep your gut fat as
low as possible. That seems to be the important thing. I’ve been looking at all the kind of studies around body mass index, and I would say that probably waist size is more important and that the simple rule – keep your stomach less than half your height – is probably the best one I’ve come across.

DM: Okay. Have you ever looked at it using the waist to hip ratio?

MM: I have. I mean, I’ve looked at quite a lot of the different studies. Probably some of them become more complex in the way they measure. The waist one is in a funny way the simplest although most people don’t actually... They think it’s they’re trouser size, but actually they need to measure it around their belly button. Certainly in the UK, I mean, apparently undressed waist, their waist size is [up] by about three inches, because you’ve got nothing of that droopy belly hanging over. You think, “Cool, I’m only 32 inches around.” But that’s kind of, you know. It’s not really your belly size. You have to measure it around the belly and don’t hold it in.

DM: Now, one of the recommendations I advise people when they implement this program is to pay attention not only to the timing of the meals but also the quality of the food that’s being put in with a particular emphasis on increasing the high-quality fat intake. I’m wondering what your views are on that.

MM: Absolutely. I think the term “fat” has been demonized. We’re beginning to realize that not all fats are equal. Some of the processed fats we find in sausages and in salami are probably not great for you. But certainly the fats we find in high-quality grass-fed beef, they seem to be pretty good and in fish and things like that. I think where coming to a much more refined understanding if you like of what sort of fats are good and which are bad.

And you’re absolutely right. It’s all about the quality of the food you eat. It’s not really about just the micronutrients. I think we’re also beginning to understand now that not all carbs are equal and that some carbs, particularly the sort of unrefined rice and things like that with lots of husks in, those are kind of good. But white stuff – whether it’s white rice, white pasta, or white bread – that’s pretty bad and almost as bad for you as eating white sugar.

DM: Yeah, I couldn’t agree more. Once you have reached the point where you don’t really have insulin resistance anymore and your ideal body weight or your body fat is great, then even the introduction of healthy fruits, organic fruits, not in excess, I think would be a really good complement, especially if you’re exercising because your body can use those sugars.

MM: Absolutely. That’s one of the things I was interested in because you’re also a big fan of high-intensity training. I’ve seen you doing that. I just wrote a book called Fast Exercise about that, which is available in the States. It’s uncanny. We are blood brothers because I’ve been following your path.

DM: Well, you know, I started... When did you graduate from school?


DM: Oh, ’85. I graduated in ‘82. Did you finish your residency then?

MM: I did, yeah.

DM: We finished residency at the same time. That’s when I finished my residency.

MM: Yes.

DM: Exact same year. It’s interesting how we paralleled this. Because not until five years ago, maybe six at the most, five or six years ago, I wasn’t aware of high-intensity exercise. It’s only two or three years
ago did I start to adopt the intermittent fasting. But those are the two most powerful interventions I’ve ever encountered, which are physical interventions in medicine.

**MM**: Absolutely. The reason I go into a high-intensity exercise (and this was three years ago) was I was making a documentary again for the BBC and it’s called The Truth About Exercise. I met a professor and he said, “I can give you many of the benefits of exercise for just a few minutes a week.” I didn’t believe him. I did the program; it changed my life.

**DM**: Yeah, I saw that. It was like a ridiculously short amount of exercise what you’re doing. It was like what, a minute or two minutes three times a week?

**MM**: It’s a minute three times a week.

**DM**: Yeah. That was crazy.

**MM**: It’s quite hard.

**DM**: Oh, yeah.

**MM**: But it was really, really interesting. And then I started looking into the science behind it. Again, I just love the fact that there is this huge body of science behind it.

I didn’t know whether you’ve encountered a lot of skepticism because I was expecting it. I got some with the exercise. I got less than I was expecting from the medical establishment when it came to the 5:2 Diet. I got quite a bit from dieticians who should know better and who basically just went, “This is nonsense,” without bothering to look at the research. But it’s been embraced by a lot of people in Britain. I’ve had Nobel Prize winners, five professors of medicine I know, and the [inaudible 19:30] or the guy who runs our economy. He’s publicly come out as a big fan. He’s looking very slim on it.

**DM**: Who is this? The intermittent fasting or the high-intensity?

**MM**: The intermittent fasting but also the high-intensity training.

**DM**: I’ve been doing that for at least five or six years and I don’t really recall much resistance or opposition saying that this was a flawed model. I mean, most everyone, at least on this side of the pond, is doing pretty good with it. What I recently started to integrate is a technique that I actually started 10 to 15 years ago that I thought was too hard but I think there are a lot of merits to it, which is high-intensity strength training.

[----- 20:00 -----]

**MM**: Right.

**DM**: It’s like super slow, where you’re going 10 seconds up, 10 seconds down until you really just max out your muscles. Again, you only do this like once a week or once every two weeks if you’re...

**MM**: Super slow, that’s very interesting because I do that as well based on a study out of the University of Texas. This is sort of 10 exercises you can do in seven minutes. You do 30 seconds each. But I do like the press-ups, the squats, and things like that. I never recall them calling it super slow.

**DM**: Yes. It’s a whole different method because… And you should look at some of the videos on my site with Dr. McGuff. He discusses it in more detail. But essentially what you want to do is identify a weight that you can do at least six to eight reps. If you can do more than 10, it’s too light. You have to increase the weight. You want to get into that range. But it’s 10 seconds up and 10 seconds down. If you’re doing
10 reps, it’s almost three minutes in that one set. You don’t do multiple sets. It’s only one set because your muscles will be so fatigued, it’s like you did 20 sets.

**MM:** Wow.

**DM:** It’s an incredible workout. It essentially flips the switch for all these beneficial metabolic changes like increasing testosterone and growth hormone. It does it all warmly in light of your own body’s biofeedback system, so you don’t overdo it.

**MM:** I should check them out.

**DM:** Yeah.

**MM:** What are the biomarkers that you measure in yourself on a regular basis?

**DM:** Well, I think probably for everyone, the best biomarkers are the ones you already mentioned – your weight, your waist size, or your waist to hip ratio. That’s probably a lot more reliable, easier, and less expensive than doing a body fat ratio. That’s probably good. But I regularly measure blood parameters like fasting insulin levels, fasting glucose, uric acid levels, and then I’ve done in the past human growth hormone levels, which are really hard. There are not really a lot of good labs out there. When I did go through that hassle factor and got it done (this was when I was doing the high-intensity exercises), my growth hormone was like at the level of a teenager. I was pretty pleased with that because normally it drops off pretty rapidly about the age of 25 or 30.

**MM:** Yes.

**DM:** But I think as long as you’re… The simple ones are just that you monitor your weight. That’s probably the easiest. Just jump on the scale. Assuming that you don’t have any bizarre aberrations where you’re doing something crazy, it’s going to give you a really good indication.

**MM:** I’ve got a bit of test about blood glucose recently. Because you’ve got these sorts of monitors you can buy in the pharmacy for 10 dollars. I think more people should be screening their fasting glucose levels because it matters so much. Most people aren’t aware of it.

**DM:** Yeah. I think that’s going to be… That’s a phenomenal way to do it. The technology is going to improve pretty soon. They’ll pretty much be able to attach a sensor to your smartphone and you’ll be able to do it non-invasively for basically just the cost of the sensor, which is a one-time investment. That’s coming. That’s around the corner.

**MM:** It’s just fantastically exciting, isn’t it?

**DM:** Yeah.

**MM:** Because one of the things that struck me very much in doing this sort of things is that we all respond differently and that what works for you may not work for me. Really, the only way of testing that is by having monitors, knowing what’s going on, and refining things.

**DM:** Yeah. It’s very objective. It’s hard to argue with the numbers. It’s just I don’t think I’ve ever encountered anyone with this intermittent fasting that I recommended it to, who’s really been disciplined about it and applied it, and it didn’t work.

**MM:** Yes.

**DM:** The failure rate is close to zero in my experience. I mean, I’m sure there’s something…
MM: No, it’s absolutely the same. People give up after three or four days. They say, “I can’t keep up, “We’re getting hungry,” or whatever. But once you stick to it, you always lose weight.

DM: Yeah. It’s just that…

MM: And they get these benefits as well which go beyond simply weight loss – improvements in cholesterol, improvements in glucose, but also probably improvements in the brain. I’m sure you’re familiar with the work of Dr. Mark Mattson of the National Institutes on Aging.

DM: Is this the BDNF, the brain-derived neurotrophic factor?

MM: BDNF exactly. It’s really exciting. I think that’s just scary.

DM: Maybe you can just review that for, you know.

MM: Yes, certainly. What really impressed me is when I went to the National Institutes on Aging and I met Dr. Mark Mattson there. He’s got these genetically engineered mice. They’ve been genetically engineered so they will develop Alzheimer’s or dementia. What he found was normally they’ll develop dementia around a year, which is the equivalent of about 40 or 50 in human. But when he put them on an intermittent fasting diet – alternate-day fasting diet in fact – they developed it at around two years, which is equivalent to being 90. When he put them on a junk diet, a junk food diet, they developed it at about nine months.

When he looked into their brains, he discovered that the ones who had been on intermittent fasting diet have grown 40 percent new brain cells particularly in the area associated with memory. He identified this thing called BDNF or brain-derived neurotrophic factor, which seems to be driving those changes and also protecting the brains. He’s doing this big study in humans at the moment to see if the same thing happens with fasting humans. I think that is just so exciting.

DM: Yeah, it is. When we went to school, I don’t even know when BDNF was ever discovered.

MM: When I was in medical school, the belief was absolutely that beyond the age of, say, 18, you never grow new brain cells. You’ve got the ones you’ve got; look after them. Whereas now we know the brain is incredibly plastic and on the influence of these hormones and things, you can grow new brain cells. That is just again enormously exciting.

DM: Now, I’m wondering. One of the justifications I provide when I present this material is the ancestral component, that our ancestors never had access to a grocery 24/7. Our genes and our biochemistry are optimized for this non-continuous source of calories that almost everyone has. Many people can go decades without ever missing a meal three times a day. I’m wondering if you can comment on that and if you’ve done any articles or research that supports that view.

MM: Absolutely. I think that is one of the most compelling arguments behind it. Indeed the doctors I have spoken to like Professor Luigi Fontana or Dr. Mark Mattson, they absolutely embrace that as an explanation. As you say, our ancestors didn’t get meals all the time. They would have gone for a period of feast or famine and our bodies are adapted to that.

We know, for example, now that it’s only in the periods when you don’t have food that your body goes into a sort of repair mode because most of the time it’s going flat out. Your body’s really only interested in procreating, growing cells, always going on and on. But when you go without food for 12 to 14 hours, your body starts to think, “Well, let’s do a little bit of repair now.” Some of the proteins get denatured. New ones get created. Your mitochondria cells originate. There’s a lot of fundamental biochemistry, which completely validates this argument.
As Dr. Mark Mattson said to me, in terms of the brain work, the time when you need to be smart is not when you have food. Because if you’re in a cave and you’ve got food, you reach out and grab it. You don’t have to be clever. The time you have to be smart is when you don’t have food. Because then you’ve got to get up, you’ve got to get out, you’ve got a plan, you’ve got to remember where you left the food before or where you found the berries, and how to get hunting. It’s actually being without food that makes you smarter.

**DM:** Yeah. That’s a really powerful observation, too, because most of us are employed in occupations where we have to use our brain. We’re not manual laborers. We require thinking even in our personal lives. To me, that’s another amazing benefit of applying these two powerful approaches – intermittent fasting and intermittent exercise. You actually are able to think clearer, get more done, and be far more efficient. It’s just a phenomenal side effect of following this program.

**MM:** Absolutely. At the moment, I’ll be in contact with a group in Ireland, who are doing research trying to combine the two approaches because as far as I know, it hasn’t been properly tested (the two) together. Now, I believe that together it’s going to be much more powerful than separately. It would be nice to have this sort of scientific basis for that.

**DM:** Yeah. It never occurred to me that no one has studied both of those techniques. I mean, because individually they’re well-documented and researched. There’s so much effort. But I guess that’s some of the challenges with researchers, they don’t have the same approach.

**MM:** They never talk to each other.

**DM:** Because they’re not generalists. They’re not trained as general physicians. They’re not generalists. They don’t go from all disciplines and try to integrate it together to make a practical recommendation, which is what their training is.

**MM:** Absolutely. Particularly if you’re an academic, that’s what you’ll just get in. I understand even the people who do alternate-day fasting almost never speak to the people who do two-day fasting, and never speak to the people who are doing the sort of Warrior Diet approach. They each have their own focus, they stick to that, and that’s what they develop. I think what is useful is people like you and people like me who can go and talk, disseminate, and allow people to choose their own sort of variant.

**DM:** Yeah, it’s interesting. My first exposure to intermittent fasting was with the Warrior Diet because Ori Hofmekler is a friend of ours. We connected with him. He’s really… He’s incredibly fit. He’s been applying this for a long time. What do you think of his work on the Warrior Diet?

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**MM:** I don’t know enough about it. I’m going to have to look at it again. I mean, I was aware of it. I decided for no particularly good reason not to go down that road. Having done the alternate-day fasting, I decided to see, “Well, if alternate-day fasting works, well, perhaps I can see improvements by adjusting it two days.” I never tried to do that. But that’s another thing that I would like to explore.

**DM:** Yeah. He was really ahead of his time with that because he helped me understand, too, like you’ve mentioned, the neurological researches that the brain proteins that get replaced when you’re fasting. But it’s not just any random protein. These are the proteins that should be disposed of anyway. They’re damaged proteins. If you don’t ever encounter this fasting mode, they tend to stick around longer and wreak havoc in your body.

**MM:** Absolutely. I think there are good theoretical reasons for going down the warrior diet particularly because you have longer periods without food, whereas with alternate-day fasting, indeed the form of 5:2
that I practiced really, or probably only going a couple of periods like 12 hours. Maybe we need to go longer to get optimal benefit. I think we don’t really know at the moment. But in the end, you can do what you enjoy doing and what you can handle I think.

**DM:** Why don’t we go back to your exercise for a bit because as I understand it you really weren’t exercising for the most part prior to encountering this? Is that correct?

**MM:** Well, I’m just doing, you know, bits and pieces. I wasn’t doing any formal exercise. I would take the stairs when I could. I cycled to and from the railway station, which is about a mile, on my way to work. But that was kind of about it. Yeah.

**DM:** Okay. What has your program evolved to now?

**MM:** I now do this regime of strength exercises, which I do three or four times a week. I’m going to have it geared with doing them a bit slower. I spend probably up to 10 minutes alternating press-ups and a range of other things. I do that when I roll out of bed first thing in the morning because if I don’t do it, then I probably never will. I go off to work. I cycle down there. I work on the seventh floor of a building at BBC. I wield out the stairs. I go downstairs and upstairs again.

I go for a stroll while I can. In the evening, when I cycle home and I’m up a steep hill, I always put in a burst of heat. I have a little burst of light for 20 seconds, where I’m going flat out against a steep hill in sort of a low gear, then I have a bit of breather, and then I do it again. By the time I get home, I’m shattered. My wife says, “Have you been doing your exercise?” And I say, “Yeah.” I have to kind of lie down on the sofa for a bit.

**DM:** Well, I think that’s a good one to continue. But if you do incorporate the super-slow strength training, I would just caution you to be careful about doing it more than once a week. Maybe initially you can do it twice a week. But the recovery is so crucial here because if you don’t allow your body enough time to recover, it’s like your digging yourself into a deeper whole.

**MM:** Absolutely.

**DM:** And you’re just not going to get 100 percent better.

**MM:** I should look up the videos.

**DM:** Exercise has always been something I’m passionate about. In fact, I started in ‘68. I’m coming up on 50 years of exercising. But what really shocked me – and I’m wondering if you’ve seen this literature. I mean, I couldn’t believe it. I thought it was a mistake in the studies. They found that really fit people if they were sitting for long periods of time, they were actually dying prematurely.

**MM:** Yes.

**DM:** I said, “I couldn’t believe it.” And then there were more and more studies, so this got to be true. I researched it and then I came across Dr. Joan Vernikos, who’s a National Aeronautics and Space Administration (NASA) research scientist. She wrote the book *Sitting Kills*. So, the importance of the other intermittent, which is intermittent movement.

**MM:** Absolutely.

**DM:** I’m wondering…

**MM:** I’m no way surprised because I’m familiar with the work of Dr. James Levine from the Mayo Institute. He’s been shouting, “The chair is a killer! The chair is a killer,” for a good 10 years now. I met
him first about 10 years ago. He had very compelling evidence that you should get off your bottom and move around every 20 minutes or so even if it’s only for a minute and that being sedentary is itself a killer. It doesn’t matter if you go off to the gym. You’re not going to undo 13 hours of sitting. That’s what he says the typical American and probably the typical Brit does. We sit on our well-padded bottoms for 13 hours a day. That is obviously a profoundly bad thing.

DM: I’ve developed a program where I download this software timer and it goes off every 15 minutes. I stand up and do some type of exercise.

MM: We should do it now, shouldn’t we?

DM: Yeah, we should. That’s what I tell them. When I lecture a group, I say, “Okay, everyone’s doing something that’s killing them now. Let’s all stand up and stop that process.” It’s so simple. It doesn’t cost anything but a few seconds of your time. It has such profound benefits.

MM: Absolutely. And people don’t understand that. They don’t start to believe it until you point out the scientific studies and then they go, “Oh, I didn’t realize that. It’s actually a very simple thing to do.” But I think what’s happening now is that companies are beginning to recognize this. Some of the more imaginative ones have implement change. We tried standup desks. I haven’t tried that yet. James is a big fan.

DM: Well, after talking to Dr. Vernikos, it’s her position that it’s actually the difference between standing and sitting that makes the difference. If you’re standing up all day, it’s going to be almost as bad as sitting down all day.

MM: Right.

DM: It’s this change in position that really is central to stimulate those improvements. Now, it’s probably better than sitting down because at least you get a little movement in there. But I think it’s the up and down that makes the key difference. Now, is this Dr. Levine, who you learned about 10 years ago at Mayo, is he still alive?

MM: Yeah, naturally. He’s a young guy. He’s actually a Brit. He moved over to the States.

DM: Okay.

MM: He’s written a book called Stand Up.

DM: Okay. I thought…

MM: He’s one of the big proponents of the joys of standing. He’s very articulate and amusing.

DM: Well, thank you for that insight. I’m definitely going to invite him for an interview. It’ll be good.

MM: Say hi to him for me.

DM: This is terrific. Let me see. Well, you’ve got a lot of experience because you’ve written this book, you’ve got an interactive website, and you give a lot of feedback. I’m wondering what type of resistances of challenges that you’ve seen people have in integrating this into their diet and maybe any solutions you’ve come up for them to help overcome those challenges.

MM: Absolutely. I think the biggest challenge is changing your habits. Habits are the hardest thing to break. People find they slip back into their old ways. Now, most people embrace it. They get on with it. They report back to me that they’ve done really well and they’re really happy.
The most common complaint if you like is things like constipation. I say to them, “You just have to drink a lot more fluid.” Because most people don’t appreciate how much water they get from food and how much they’re going to lose when they start to lose glycogen. So, headaches and constipation, they can be quite common. They’re normally sorted out by drinking a lot of water or non-calorie fluids of any form. That’s kind of a common one.

Another one is hitting this plateau that I’ve described. I say, “What you really need to do is kind of keep a diary of what you’re eating and picking what you’re drinking, because we can consume a huge amount of calories through a drink – through fruit juice, through alcohol, and through things like smoothies – without ever counting them.

The third thing that people sometimes struggle with is hunger. I say to them, “All you got to do is use… Put more fiber in your diet. Have more vegetables and probably a bit more meat.” But unfortunately carbohydrates, although they can pump up your blood glucose initially, they also lead to a crash. You’re better off in a funny way going closer to what Rob Atkins was talking about 50 years ago. Atkins is making a bit of a comeback.

DM: Yeah, he has. He actually passed away right when I launched my first book. I have great respect for his work. But I modified his approach a bit based on one of my mentors, which is Dr. Ron Rosedale. I don’t know if you’re familiar with him. But he’s a clinician out of Colorado or maybe Washington now. He’s done a lot of work in the insulin area, leptin, and this whole topic. He’s the person who first enlightened me to the insulin resistance in 1995.

His concern is that if you have too much protein, you can run into problems, too. Because the protein, specific ones like glutamine and leucine, can break down and can actually stimulate carbohydrate synthesis but also stimulate mammalian target of rapamycin (mTOR), which is an important inhibitory component for cancer. I’m wondering if you have any cautions for having too much protein.

MM: Absolutely. Because the research that I’ve looked at suggested too much protein is actually associated with increased risk of heart disease and cancer. The recommended levels, which are around 50 to 60 grams a day, are probably the levels you want to be aiming at unless you are a very, very heavy exerciser or doing an awful lot of weight. If you start going very much above that, you may be roaming into dangerous territory. Broadly speaking, it’s probably better to get some of your protein from non-animal sources. I mean, I’m a fan of meat, [though] I don’t eat a huge amount of it. But I think you can also get protein from other places, such as from dairy products and also from nuts and things like that.

[----- 40:00 -----]

DM: Vegetables. I mean, they have a lot less, but they certainly have lesser protein. Not soy, of course.

MM: And I think the problem is, as you cited earlier, is people think that vegetables and fruits are interchangeable, but they’re really not. The problem with fruit is a lot of it contains too much sugar. Vegetables are it. Once you’ve learned… That’s the other challenge: it’s really just kind of learning how to cook vegetables in different imaginative ways and trying some things. I mean, again a typical diet in the UK is somebody… You ask them to name a vegetable and they would go, “Carrot,” you know, these vegetables. That’s it: carrots, and maybe lettuce.

DM: Or French fries.

MM: French fries, exactly. They’re vegetables. You realize there’s this huge range of wonderful colors and textures and things like that. Unless you kind of go and roam out there and try them, you’re never going to really get your taste palette tingling and realize a great world of opportunity. Again, that’s something that, you know, has happened as a result of doing intermittent fasting, for me. My wife always
said, “We should eat more vegetables.” I said, “Yeah,” but I always kind of pushed them to the side of the plate, [because] I was never really hungry. But now when I get hungry, I eat vegetables and I enjoy them.

DM: So are there any specific tips or tricks that you found on how to increase the amount of vegetables and the way you’re actually enjoying them?

MM: I had tried with my kids, and really it’s about finding ways to bake them. They like, for example, zucchini if you griddle it and you add a bit of lemon and things like that. They like aubergine if you mix in lots of garlic. It’s adding lots of flavors and textures. The great British disease is always serving vegetables which have been horribly overcooked – a bit of, you know, spinach should be boiling away for 10 hours. That has put a lot of people off vegetables. [Light staining 42:04], giving it a bit of a crunch, a bit of texture, and a bit of variety is what it’s all about.

DM: Terrific. And you know, vegetables, if you eat enough of them you actually don’t need to drink as much water because they are loaded with probably the best water you could possibly drink, which is not just regular water. This is what I wanted to discuss with you – I am not sure if you’ve encountered it before. There’s something called structured water, which is not actually H₂O but H₂O₃. It’s a type of water that…

MM: I have not come across that at all, no.

DM: Dr. Gerald Pollack, he’s a biophysicist out of the University of Washington and a phenomenal researcher. This is really kind of the next level. You know, one of the things I’ve learned in medicine and in treating patients is that ultimately the solution is really, really easy. You’ve encountered the same thing. Intermittent fasting, intermittent exercise, intermittent movement – basic and simple things.

And so is water – it’s pretty simple. The difference with structured water that I think most people understand really clearly is if they have a lawn and they water their lawn, versus having the rain water their lawn. Pretty big difference most of the time. The rain does a much better job because it’s structured water. Now, I don’t recommend drinking rain water because it’s usually polluted, but the structuring of the water can be phenomenally important. And you can just get it from eating vegetables, although it’s kind of hard.

Usually there are processes that you can do, like vortexing the water and there are some things to do that. But that’s a really powerful thing. When you get water from a natural spring or a river, it tends to be structured. But when you put it through the water supply system and all the pipes, it becomes unstructured and not as healthy.

MM: Interesting. I knew nothing about it. I shall go and visit your website, where I’m sure you have it.

DM: Yeah. I look forward to another BBC documentary on it and we’ll post it.

MM: Yup. How lofty, really.

DM: It’s really fascinating. It’s sort of on the edge right now. I mean, Pollack is one of the top guys and he has the journal Water and has regular international conferences on this stuff. It really is key. To me, that’s one of the simplest things that you can get people to do to change their health, the average person who’s is not unaware of any this. It’s to simply stop drinking pop and fruit juices and sports drinks, and to switch to even tap water. They’re going to be far ahead of the game just doing that.

MM: Yes. I’ve been telling people about that for about two years now, and the illusion that people have that drinking fruit juices is necessarily good for them. We really know – and they really don’t – is it’s got a lot of calories in it, a lot of acid, and a lot of sugar. You’re not doing your kids any good at all. I mean, a
number of kids in the UK had to have their teeth removed because they’ve been drinking all these fruit juices and stuff like that.

**DM:** Yeah and there’s no question. You know, I had a person working with me at my garden here, and she was feeling hot this summer and bringing all these energy drinks. I said, “Why are you drinking that?” She said, “Because I’m tired!” It’s kind of like the title of your book, which I didn’t comment on earlier and which is just magnificent, *The Fast Diet*. I was so angry when I saw it because I said, “That’s the title I wanted for the book!” But you got it first and it was just brilliant – absolutely brilliant. You should almost get a Pulitzer Prize for that title.

**MM:** I followed that up imaginatively with *Fast Exercise* – you could see where I’ve been.

**DM:** Did you write the book *Fast Exercise*?

**MM:** I did, yeah.

**DM:** Okay, good. Yeah, that’s excellent. I didn’t realize that. And that’s published?

**MM:** That’s published by Simon and Schuster.

**DM:** Somehow I wasn’t aware of that. Those are two powerful things. The other thing is that people just don’t know; they’re just confused by this marketing of energy drinks. Well yeah, that’s great. When you look at the labels, the number one ingredient after water is high-fructose corn syrup (HFCS).

**MM:** Absolutely. Just calories. I was looking at a study recently. They got a bunch of volunteers and they dehydrated them through exercise. They gave them water and they gave them one of these isotonic exercise drinks. All they gave them was skim milk. The people who did best were the ones drinking skim milk. It replaced carbohydrates, it replaced the water, and it didn’t give you all the rubbish as well.

**DM:** Skim… I’m a big proponent of raw milk. We’re basically a huger proponent of not processing food to begin with.

**MM:** Absolutely. Keep it as pure and as simple as possible. We do not get raw milk in the UK, not yet. Although they may be about to change the law on that.

**DM:** In most places in the US, it’s illegal too, but there’s a workaround. Typically, there are some states where it’s illegal. But there are farmers who grow and they develop a private contract with them. You could buy it or buy it for your pet. I spend a lot of time in Florida; what most stores do is they sell it for pets. People know and they just buy it. In fact, we were trying to convince Whole Foods to go that route in the US. I don’t know if they’re going to that, but we’re pushing them strongly to start selling it for pets.

**MM:** I must admit I find this whole thing incredibly exciting. I remember my first day in medical school. The dean of the medical school said to us, “In the next few years, you’re going to learn a huge amount. But within five to 10 years, most of what you’ve learned will be out of date. You better keep up to date.” I do feel sometimes that a lot of my medical colleagues are not keeping up to date. They find it very hard to change. Ideas get challenged, they move on. I don’t know if you had that experience.

**DM:** I had that exact experience and I thought I’d put it in my new book that’s coming out next year. What I remember very clearly is Dr. [Ward Perrin 47:58], who spoke to our class on the very first day of medical school. He said that most of the stuff, like you mentioned, is going to be outdated and, “What we’re here to teach you is not necessarily the facts, but we’re here to teach you how to learn.” Shockingly – I don’t know, maybe you can comment on this – why don’t so many others doctors get it that things
change and they have to keep up to date? They don’t have to swallow the medical nonsense and the manipulation that’s being fed to them by the drug companies.

**MM:** I really don’t know. I must admit it’s a mystery. If you’d spoken to me five years ago, I would have told you probably that intermittent fasting was nonsense, that high-intensity exercise was dangerous, and that structured water was obviously garbage. I suspect my mind was pretty closed back then. In a sense, through experiencing it myself, it’s made me change my mind and also opened my eyes to other opportunities.

**DM:** You’ve done a massive good. I mean, you really exposed so many more people to these important concepts that once they integrate them into their life, they’re going to have radical changes. They won’t have to rely on expensive and dangerous medications that could knock them out prematurely.

**MM:** Absolutely.

**DM:** You’ve done a great thing there. Are they any other items that you’re looking to pursue in a similar fashion?

**MM:** I’m really interested in diabetes. Now, I’d be fascinated to know what you do with pre-diabetics or diabetics.

**DM:** There’s this really good program and it’s called intermittent fasting, and intermittent exercise or high-intensity exercise. *The Fast Diet and Fast Exercise.* You know, for type 2 diabetes, there’s virtually 100 percent cure. A hundred percent. I’m sure there are cases where they wouldn’t, but they would be really odd and unusual, kind of like these bizarre tumors that pop up occasionally. For type 1, obviously it’s not going to work. To me, it’s one of the most reprehensibly negligent practices that are occurring, which is the use of insulin for type 2 diabetics. It’s exactly what they don’t need. It’s killing them prematurely when what they need is the exercise and the intermittent fasting.

**MM:** The drugs that they put them on and they get from us. I was going to say that’s exactly my motivation, as I told you at the beginning. I discovered I was diabetic. I’m not now. My dad died at the age of 72 from diabetes-related illnesses. I knew I was going down exactly the same road. I just wish I had known what I know now, and I could probably have prevented his death.

**DM:** When I tried to apply the eat-right-for-your-type diet… I’m a blood type A, so it was a lot of grains and, you know, for blood type O it’s to avoid grains. I actually developed a fasting blood sugar of 130. This was like 15, 20 years ago. So I was diabetic; that was the only time I had it. I stopped that nonsense immediately and changed it. I was a diabetic, you were a diabetic, and I think almost everyone watching this is a diabetic at some point of their life if they continue an unhealthy lifestyle. But as long as you do what you’re doing, you’ll never get it the rest of your life. You’ll have fasting blood sugar probably under 90.

**MM:** Absolutely. I mean, that’s certainly what I’m hoping. I feel like it’s the way you described it – it lingers there slightly in the background. I’m thinking it gives me motivation to continue dieting well, eating well, and exercising regularly, because I just so don’t want to go down the same road my dad did. What’s terrifying is what’s happening in the UK and in the US when it comes to rates of diabetes and how bad it’s going to get in the future. As you say, the only solution that doctors have at the moment is to give them more drugs, and it’s not working.

**DM:** Yeah. Most of my paternal relatives died from diabetes. My dad has it, too; he’s actually type 1 or maybe even type 3 because he had high iron levels that developed and busted up his pancreatic islet cells. He’s got to take small amounts of insulin. But he’s 87 now and doing fine, although I can’t convince him to get to the strength training and intermittent movement as much. Metabolically, he’s healthy, but
structurally you have to be healthy, too, if you want to enjoy your metabolism. That’s where the movement is absolutely crucial.

I love the intermittent movement; I’m really excited about talking to Dr. Levine out of Mayo Clinic. It’s just integrating a new movement with these flexibility exercises so you don’t lose your range of motion. You have optimal posture and you can literally live the rest of your life without pain because you’ve got full range of motion. That’s not too difficult.

**MM:** Absolutely. In my book *Fast Exercise*, I mix the sort of flexibility and strength ones, and you can do them in a few minutes a day.

**DM:** All right, we are kind of close to coming to the end. Are there any points you’d like to emphasize and review? Or are there any points that we missed?

**MM:** I’m just really delighted to be able to speak to you. All this time, I’ve been reading your stuff. As I’ve said, you’ve been influential in my life. And I’m just really thrilled to meet somebody who absolutely embraces the same scientific rigor but who also sees that there is so much good to be done in the world. If ever, we can persuade more people to embrace this science-based approach to life.

**DM:** Yes. It is just phenomenal. I really appreciate you. I’ll be looking forward to the next documentary on structured water in the next year or two, and hopefully accomplish some good things. We’ll actually probably be funding Dr. Pollack to do some studies to objectively analyze this, because that’s the promise. You need to research to document this thing. We’ve got some basic science out but no studies that really address different devices that could actually structure water and compare the differences.

Thanks again for all that you’re doing. We’re like kindred spirits here, especially since we graduated the same year, we’re both journalists, and we have similar epiphanies with exercise and the way to eat. I really appreciate all that you’re doing.

**MM:** Thank you. A little bit spooky.

**DM:** Well, you know, the truth is the truth.

**MM:** Absolutely.

**DM:** Once you hit it, you know it’s hard to deny it. The evidence hits you in the face and you have to be open to accept it.

**MM:** Keep up the good work.

*[END]*