

Debunking The China Study and Other Diet Plans: A Special Interview With Denise Minger

By Dr. Joseph Mercola

JM: Dr. Joseph Mercola

DM: Denise Minger

JM: Hi, this is Dr. Mercola, helping you take control of your health. As I was in the process of taking control of my health, I was using a PEMF electrode. That's pulsed electromagnetic field electrode input that I can indent on my forehead. Don't worry about that, because we are delighted to be interviewing Denise Minger, who is most noted for her takedown rebuttal of *The China Study: The Most Comprehensive Study of Nutrition Ever Conducted and the Startling Implications for Diet, Weight Loss, and Long-Term Health* about five years ago. Perhaps we'll touch on that a bit today. But she is a really gifted communicator and is going to be sharing some really interesting items with us today. Welcome and thank you for joining us today, Denise.

DM: Hey, Joe. That should be a song. I'm happy to be here. Thank you for having me.

JM: Is there anything else you'd like to add to your bio at the beginning before we start?

DM: Probably for anyone who doesn't know my background already, I have a very vested interest in the whole vegan versus omnivore battle, if you want to put it that way. I became a vegetarian myself when I was 7 years old. I was eating steak one night at dinner and almost choked on it. I developed some kind of phobia surrounding things with meat textures. I went vegetarian overnight at that young age.

I stayed vegetarian for 10 years. During that time I was also developing food allergies, including a wheat allergy and a dairy allergy. By the time I was a teenager, I was really health-conscious. I was very aware of what was on food labels. I had to get into that whole scene just to basically stay healthy. When I was about 15, I came across the raw vegan movement, which I'm sure you're probably familiar with.

JM: Absolutely.

DM: The branch of that I ended up in was the 80/10/10 diet, which was promoted by a guy named Douglas Graham, who, I think, also lives in Florida. You all could be neighbors. His whole idea was, "Look at what the monkeys eat. Look at what the primates eat." The frugivores, it's arguable what they eat, but they love fruit. They eat vegetables. They're not huge hunters. They're mostly vegetarian.

I was reading about this online at the age of 15 without having any background in human biology, physiology or anthropology. I know a baseline knowledge to judge the things I see. I fell into this trap of logic, thinking that humans are the only animals that cook raw food. We're the only animals that eat this species-inappropriate diet. I might as well be a raw vegan. I went raw vegan overnight.

I'm very 100-percent, all-or-nothing with things, so when I do something I commit to it. For one year straight, nothing but fruits, vegetables, and some nuts, all uncooked. I did great for the first month, as most people do when they stop eating crappy foods. After that period, I started losing weight and losing muscle. My hair was falling out. My energy levels were just fluctuating like crazy. I was in high school at the time, taking the Scholastic Assessment Test (SAT). I remember my brain fog got so bad at one point that when I was taking the SAT, I was reading the question. By the time I got to the end of the question I couldn't remember what the first part of it said. It was like that level of lack of comprehension.

The kicker for me, because I've always taken great care of my teeth, was at the end of this period of raw veganism, I ended up with 16 cavities in my mouth, after a lifetime of what had previously been perfect dental health. That was what kicked my butt: going to the dentist, expecting praise, expecting my ego to get stroked like, "Your teeth are so good." When you sit in the chair and you hear the dentist make small noises of concern above you while you don't know what's going on, that's terrifying, especially when you're fairly young and your teeth have always been good.

It was actually the dental health issue that really turned my mind around with the whole diet stuff. At that point, I had to let go of the vegan philosophy. I had to start questioning things I had previously heard. That's when I came across things like the Weston A. Price information depository, which is beautiful, what humans have been eating that has supported health in the past. I learned about the paleo movement, different forms of health-conscious omnivorey. That's where I ended up. It was a process.

JM: Please tell me that your dentist didn't use mercury fillings.

DM: He did not. No. They were zinc, I think. Yeah. No mercury.

JM: Perfect. That's good. I've seen you lecture on *The China Study* before at Weston A. Price about five years ago.

DM: I remember that.

JM: I do remember your history, even though you have no formal science training. Your father, I believe, is an academician at a university. Your primary interest was English literature or something like that.

DM: In college, I changed my major like nine times. I did all the "-ologies." It was indecision. But yeah, my dad was a college vice-president. He's retired now. He worked in higher education for decades, almost his entire adult life. My mom also worked in Portland, the National University of Natural Medicine. They changed the name, but she was working also in higher education. Much education on both sides of my family. I totally appreciate the value of a formal education, but I don't think it's the only way to learn. Quite often, it's not the most efficient way to learn. That's where I landed.

JM: You're very gifted, thankfully, through the skills that your parents provided you. I'm sure the whole framing of your adolescence. I guess what catalyzed your debunking *The China Study* was

an injury that laid you up in a hospital bed, essentially not being able to do anything for a few months. You had the extra time on your hand. Because you never really went in to do that. Maybe you can relay that story, and I have another comment before we can go into another topic.

DM: Sure. That's a great one, especially because I get a lot of questions of, "Who funded this? How did you have all this time to do this study? Were you sponsored by the meat industry?" I love that. If I was sponsored by them, I'm still waiting for my paychecks. I'll give you my forwarding address. But when I was 23 or 22, I got hit by a car. I was riding my bike — this was in Flagstaff, Arizona — A woman in a sports utility vehicle (SUV) T-boned me. I was riding my bike.

JM: Oooh.

DM: I was not wearing a helmet.

JM: Oooh. Double oooh.

DM: But anyway, I shattered my elbow. As you can see, I have a scar.

JM: Yeah. Sure.

DM: My elbow was like halfway up here. It was the size of a grapefruit. I was in and out of the hospital for a bit, getting surgeries on my elbow, doing the physical therapy thing. I couldn't do anything else really, because I was obviously injured. I was healing. I didn't know this at the time, but when you get hit and it's not your fault, they give you pain and suffering money, which I don't recommend anyone intentionally get hit for this reason. However, I ended up with enough funding so that I didn't have to work with a regular job for a while.

My initial plan was to move to Thailand, because I wanted sun. As we were remarking earlier, I'm in Seattle right now. The sun has just emerged. I'm going to keep looking out the window because I want to go outside and play. But I wanted to move to Thailand for sun and to just like revise my whole life. My passport kept getting rejected. I submitted my application two or three times. Every single time, they told me I had insufficient forms of identification. It was really weird. It was so weird. I was like, "Okay. That plan, for whatever reason, the universe is telling me don't go to Thailand." I stayed.

At the time, I was in Portland, I believe. I stayed in Portland. I got a huge book of *The Raw China Study* data. I am a person who loves numbers. I have fun with correlations. I have fun looking at patterns. My brain gets happy. I spent about two to three months poring over the data. I needed a project, because I had nothing else to do. I was poring over the data and that's when I realized I needed to write a critique of the book. So much of the stuff that Campbell said was not supported by his own data. I just felt like if there's anything I needed to do in life, it was going to be this.

I didn't expect anyone to read it. I had a little blog going. I would say I had six readers, five of which were my mother on different computers. That's not a joke. I think she actually does that. My mom basically is my sole cheerleader. I didn't realize at the time how much interest the critique would gather, how much interest there was in that book itself. I hadn't really, I guess, seen the

rivalry upfront between the vegan and the paleo worlds. When I released this critique, I didn't know it was going to be that influential. I'm very excited at how it all played out.

JM: Yeah. It's been five years now.

DM: Yeah. I'm old.

JM: You've developed quite a bit of notoriety as a result of that, especially in the vegan community. You have been really vilified and really characterized as someone who, by many, not all certainly – it seems that even Dr. Campbell, the author of *The China Study*, who's wrote personal rebuttals to your rebuttal or video commentary. I mean, certainly, you have a lot of others really characterize you as someone who's promoting processed food, McDonald's and KFC.

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

DM: Yeah.

JM: It's interesting, because you're really attacking what I think is best described as the bible of the raw vegan position. It's *The China Study*.

DM: Yeah.

JM: It really is the scientific justification for many of their positions. I'm wondering how you handled the attacks.

DM: I have cried. I would say when it first started happening, I'm like, "This is a great lesson in learning to not require other people to like you." Because when you're a public figure, people are going to hate you, just because you're a projection screen for all of their stuff. You're convenient and they can hide behind pixels. The initial response that I was getting – As you mentioned, Campbell wrote a few responses.

The first one, basically, again, accused me of being a front for the meat industry. It was, in some ways, flattering. He said, "I cannot believe that a young girl could do this all on her own," which is nice. There's a lot of stuff embedded in that, but this is a psychology issue. I was reading that and it was really hard to not take it personally initially.

At the time, I was working as an afterschool teacher. I was just hobbling together an income working, being very low, under-the-radar. To have that kind of attention that was negative was really profoundly injuring at the time. You know how it feels to get people hate you.

JM: I've been down that road a few times.

DM: It's part of the journey. After a period of time, you've learned that it's actually a good thing. If you're getting people talking, if you're getting people angry enough to care, then you're hitting buttons. You're hitting buttons that need to be hit. The discourse that unravels from that is always really important. For me, with handling the feedback I got, again, there was the initial period of,

“Why do people hate me?” and then that moves on to how can I use this [to] my advantage? How can I use the controversy and all of this to keep the dialogue going?

There actually came a period where it was really helpful for me to hear feedback from people who disagreed with me, because I noticed I had started a new form of dogma for myself. I mean I'd moved from the vegan stuff in a very reactionary way, which, I think, is usually the progression for people who leave one dietary tribe. You get angry at it. You do the exact 180-degree opposite for a while. You think you found a new Holy Grail. After a period of time, you realize you just transferred that type of dogma to a different template, but it's the same pattern.

For me, after a while, I started questioning the low-carb thing and the ketogenic thing, and thinking, well, “I've been attacking veganism more or less for a while, should I also be questioning my new beliefs?” In that sense, people who disagree with you, your critics, they can be really important. I mean they're not always going to be right, but they provide feedback that can be growth-oriented. That has been helpful too.

JM: Okay. Thank you for that. I was wondering if you can comment on how you're reconciling some of the differences, because I think there are some kernels of truth in *The China Study*.

DM: Yeah.

JM: The biggest one is, from my perspective and what I believe is one of the primary variables that's responsible for significant health improvements that many vegetarians – maybe not most, but certainly vegans enjoy relative to those who eat the standard American diet – is that they have a very significantly lower protein intake, because plants are not protein-dense. I think there are some really valuable insights there that can be integrated into a low-carb paleo approach. I'm wondering if you can comment on that.

DM: Definitely. For the protein issue, what I always find interesting is whenever we look at *The China Study*, for example, when you look at their food intake, it's much different in terms of the types of animal parts they consume than we see in America. The protein issue is complicated, but I will say that high methionine intake, for example like muscle meat –

JM: For those who don't know, methionine is an amino acid.

DM: Amino acid. Yeah.

JM: That's necessary because it converts ultimately to glutathione.

DM: What strikes me and I think what the research is supporting is that we need a balance with that and glycine. You get that by eating the entire animal, by eating the skin, by eating the tendons, connective tissue — all the stuff that Americans typically discard. We like the muscle meat. There's some type of focused association. Maybe it's because that other stuff seems like poverty food. There are still some psychological hang-ups about eating stuff that poor people eat. There's a lot of stuff built up on that.

But like in *The China Study*, you don't see them eating steaks and chicken breasts for every meal. Even the lower animal product-consuming societies, a lot of them eat insides. A lot of them eat the weird parts of the animal. I think that's imperative for staying healthy on an omnivorous diet. Because the way we eat meat in America is pathogenic. It's not healthy. There are so many things wrong with that. But it's not necessarily because animal products are bad for you.

And then just with the data and *The China Study* itself. What was amusing to me, because it was completely left out of *The China Study* book, was that the healthiest populations were the seafood eaters, the ones that were living in coastal regions. They had the best health outcomes. The only disease that they had more of, I think, was liver cancer. That was because they were living in humid areas where aflatoxin was more prevalent. They were ingesting, basically, carcinogens from the mold in different foods. That was increasing liver cancer. But it wasn't because of the animal protein. It wasn't because of the fish.

Campbell himself actually co-authored a study showing that, opposed to the vegetarian inland groups, it was the coastal seafood eaters who were, on the whole, healthier within that data. I always found that kind of interesting.

JM: Sure. Of course there's the other issue of preformed long-chain omega-3 fats.

DM: Exactly.

JM: If you're familiar with eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA). Those who are restricting themselves to a plant-based diet are only getting alpha-linolenic acid (ALA), which is the precursor for those. Most of us are unable to convert it at significant therapeutic levels. That would speak well to support the position that we need some of those animal foods to be healthy, toxin-free versions.

DM: Yeah.

JM: Because, unfortunately, most of them are loaded with lots of mercury, heavy metals and environmental toxins.

DM: Yeah.

JM: Clearly, the composition of the animal protein is a significant issue. We don't want processed foods. We don't want them from confined animal feeding operations (CAFOs) that are loaded with, typically, glyphosate, because that's sprayed on the food that they're given. Of course, it recycles into the tissue. But I'm wondering about the actual amount of protein, and if you've looked at that or have formed any conclusions from your review.

DM: From *The China Study* review, not so much. Again, I think the justification is coming from the composition of different amino acids, rather than like an absolute protein intake. Because when we do look at historical groups of humans, the animal food intake was generally on the lean side. We don't have year-round access to these big wobbly fatty animals that we can just stick a spear

in. In nature, we can't just stick a spear in these fat things and get a huge intake of saturated fat year-round. It's going to be seasonal when it occurs at all.

I'm reminded of a study on Australia aborigines. I think they put people out in the wild to try to acquire foods from their environment and survive on that. I think it was the study of diabetics back in the '80s. Their fat intake ended up being something like 8 to 12 percent, because the animals were so lean and the lean protein intake was conversely much higher.

I have trouble believing that animal protein itself is going to be a problem. I think what might be a problem, again, is this consistency thing. The idea that eating the same foods year-round, without any fluctuation in the composition of that diet, is healthy, I don't think that's the case. It's the term "Neolithic." That's a very Neolithic thing. It's to have a steady food supply that's unaltered throughout the year.

I think things like protein cycling might be therapeutic for humans. I think that even carb cycling and going through different periods of different macronutrient intakes instead of always being low-fat or always being low-carb. I think that's probably what the human body is best adapted to. I think that when we see problems is when we control our diet to something that is so unchanged that our body doesn't have the experience of adapting to change throughout the year. It's a new thing. We haven't had that possibility for most of human history.

JM: It sounds like when you attempted to deconstruct or find the faults in the low-carb, high-fat approach, you concluded that it was the cycling issue that wasn't being integrated into the recommendations. Would that be fair to say?

DM: I would say that would be one issue. The low-carb stuff, I don't want to say that low-carb doesn't work for anybody, because it obviously has clear benefits. We've seen that proven.

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

My concern again is like the long-term effects, especially for women. Because I do one-on-one consulting with people. A large scary group that I have come in are women who've done low-carb. Their thyroid function is tanking. They're gaining weight. They feel terrible. Their hair is falling out. It happens with men too sometimes, but I think women, hormonally, were more sensitive to the lack of carbohydrate.

But even beyond that, things like the effect on the gut microbiome. I think we still need to understand what that's going to be long-term. Was it Jeff Leach? I think his name was Jeff Leach of the Human Food Project. I might be butchering this.

JM: I think that you're correct.

DM: Yeah. There's a post he wrote that's really interesting, called "Sorry, Low Carbers. Your Microbiome Is Just Not That Into You," or something like that.

JM: Right, right.

DM: Collecting data on people who've been doing low-carb for a while and you see shifts in the gut microbiome composition. Are they okay? Are they not okay? We just don't really know that yet. I think it's important to keep an eye on that kind of thing.

I, too, also feel concerned about a really long-term high intake of saturated fat for various reasons. Again, with the gut, it seems to increase gut permeability. It seems to increase the transport of endotoxin from gram-negative bacteria out of the gut and into the bloodstream, which has been associated with all sorts of inflammation and diseases that can stem from that. There are issues there.

On one hand, we see people switching away from the standard American diet to low-carb. Yeah, they're going to feel great. Yeah, they're going to lose weight. There's going to be this initial honeymoon period, just like I had with raw veganism. My wondering is what happens over the course of many years on a large scale, because I'm not just interested in people who are like, "Yeah. I've done low-carb for 20 years. I'm doing great."

JM: Sure.

DM: I'm wondering what the bulk of the evidence is going to show. I don't know if we really know that yet. It's more of like a precautionary concern like "Let's keep an eye on this."

JM: I think there's fairly compelling suggestions that they're going to run into problems for many of the reasons you cited.

DM: Yeah.

JM: The challenge though is to integrate a happy balance. I wrote the book *Fat for Fuel: A Revolutionary Diet to Combat Cancer, Boost Brain Power, and Increase Your Energy* and did a lot of heavy research on the studies with this. I've come to the conclusion that insulin resistance is pervasive. Literally, if you go to the more refined definition, it's about, at least, 80 percent of the population. Where low-carb can be really useful would be in lowering insulin resistance. It still won't work in a large number of people.

DM: Yeah.

JM: I think they need to get even more aggressive and do fasting. Once they've done that for a while and then once they get rid of the insulin resistance, you've got to integrate carbohydrates back for the reasons you stated. If you don't, you will get sick. I mean I personally got sick because I didn't understand that strategy. I kind of figured it out myself empirically. In and of one, that it's not a good idea.

DM: Right, right, right. Yeah. I think too with the idea of fixing insulin sensitivity with low-carbohydrate eating, I think it's more a matter of those diets are great tools for people to lose weight, and then you lose fat around the organs. You start improving insulin sensitivity because of that weight loss, and because of the reduction in the energy surplus that many people are constantly surrounded with.

But I use the analogy of – imagine you have a refrigerator. Your refrigerator breaks. You can do one of two things. You can say, “Okay. I’m never going to buy any perishable food again. Everything I’m going to buy is going to be dry goods as long as the freezer or the refrigerator is broken,” or you can fix the refrigerator.

Low-carbohydrate diets are like saying, “Let’s not use our refrigerator anymore.” Let’s not use our carbohydrate metabolism pathways anymore. Let’s just avoid those. It’s not actually fixing the issue. I mean as anyone who knows who’s been low-carb, you go low-carb for a while, and you reintroduce carbohydrates, and, whoa, it’s terrible. Your blood sugar goes crazy. You feel awful. It’s like, “Wow. The carbohydrates are terrible.” No. It’s because your body is no longer working to metabolize this sufficiently.

JM: But actually, the converse can occur. It occurred with me. It’s that once your insulin re-sensitivity isn’t increasing, low insulin levels is when you reintroduce carbohydrates. In that state I just mentioned, your blood sugar will tend to rise from hepatic gluconeogenesis. When you reintroduce carbohydrates, that actually raises insulin and it drops your blood sugar, which is seemingly paradoxical.

DM: It is paradoxical. That’s through the use of the tool to achieve that state of insulin sensitivity. But when seen with a lot of people who go low-carb, for ones who don’t lose weight, which there are some or some who gain weight, there are people who go ketogenic and they pack on 60 pounds and don’t understand that, yeah, you can’t eat too much fat.

For those people, they’re not going to improve that insulin resistance state, because they’re not undergoing the physiological changes that they need to get there. I totally agree that low-carb can be used as a tool to achieve a healthier state. But it’s not necessarily like the fact that the diet is low-carbohydrate itself. That’s not what’s restoring insulin sensitivity. It’s all those other changes. It’s the fat loss around the pancreas. There are other stuff going on. But, yeah, I think that makes sense.

JM: I think part of it too – I’m sure you’re familiar with the mammalian target of rapamycin (mTOR) pathway —

DM: Yeah.

JM: — and its influences that protein has on. I think that’s part of the reason why it’s not just a low-carb. It’s an adequate protein, which by most definitions would appear to be low-protein. They both need to be integrated.

Some of the people who you’ve mentioned may have just been using traditional paleo, which is essentially high-protein, high-fat – a sort of an old Atkins approach. You’re not going to get the benefits unless you restrict the proteins. But the same scenario occurs, not necessarily for the same reasons, but you have to stimulate that mTOR. It’s not like you permanently suppress it for the rest of your life. You will be catabolic. You’ll be looking like an emaciated concentration camp survivor after not too long.

DM: Like a raw vegan. Yeah.

JM: You need to have protein. You definitely need to have protein.

DM: Absolutely. Yeah.

JM: I think it's better. And then there are some controversies. In fact, I just read a study today. It's traditionally thought that, as you age, the amount of protein, like over 65, you should actually increase your protein intake. Then there are some controversy or some other studies popping up that says maybe that's not true. But you definitely want to retain your muscle mass as you age.

DM: Yeah.

JM: You do not want to lose it. If you do, it's a quick decline to terminating your life prematurely.

DM: Yeah.

JM: Getting back to the meat spectrum. You had mentioned it earlier. I'm wondering if there are any other comments you've had on you eating the whole components of the meat, including the connective tissue, which is high in glycine and has its own benefits.

DM: Yeah. Usually when people ask me what kind of meat should I eat, "What should my animal food composition be?" My focus is on nutrient density. I don't like to look at, "You should eat this many servings of meat each week, or this many ounces", because it's so variable. It depends on what you're actually eating. For my own diet, I focus on organ meats and shellfish. It's like my nutrient-dense animal foods. Those are the primary foods that I eat that are of animal origin.

JM: What type of shellfish do you eat?

DM: Oysters are my favorite. Nutritionally, if you look at liver and oysters, oysters are kind of like the liver of the ocean. Especially, I say this too for people who have ethical hang-ups about eating things that are highly sentient, that look you in the eye and are very much alive. Oysters lack that central nervous system that would make them equivalent to a cow.

There's like that whole bivalve veganism movement where people are vegan with the inclusion of certain shellfish. I think that can really go a long way for people to balance out a vegan diet that they're committed to for other reasons.

I recommend people, first of all, when you're cooking meat, use gentle methods, because that's another issue that we see in America with studies. It's like these high-temperature cooking methods, they seem to be driving the correlation between meat consumption and different cancers that we see in observational studies. Like whenever you look at a study that actually controls cooking method, typically once you take away the high-heat – grilling, frying, etc. – kind of strategies for cooking your meat, you see that the correlations with various diseases start to diminish, if not disappear completely.

You have heterocyclic amines that can form, polyaromatic hydrocarbons that can form carcinogens that can happen with that high temperature. Be gentle with your meat. Muscle meat, you don't have to avoid it, but it needs to be balanced with other animal parts. Again, eat organs. Organs are so awesome. They're so good and so important.

I think the public, in general needs to revise its concept of what good meat is versus meat to avoid. There are just so many psychological hang-ups people have about eating organ parts. It's like, "The liver, the brain, the kidney, it's where all the stuff happens in the animal," but it's all kind of a social conditioning. We need to work on that.

JM: Okay. The devil is in the details, like in most areas of life.

DM: Yeah.

JM: I'm wondering if you could comment on how you identify sources, healthy sources of these types of foods, and then, importantly, how you prepare them. Because typically, most people are not too excited about having liver.

[-----30:00-----]

DM: Liver is a tough one. First of all, the palatability issue spectrum. The smaller the animal, the better the liver usually tastes. Beef liver is something I still can't really get into. But chicken liver, cook it with something like balsamic vinaigrette, put it on some salad, you can make that tasty. Add some onions and garlic and you can mask the flavor pretty well.

But as far as sourcing meat goes – Then there are issues with like you're just buying something from the store that says organic or has certain special words on the label. Organic, for example, doesn't mean pesticide-free in general. It means that if there have been pesticides used, they're organic chemicals. They're naturally occurring. That doesn't mean they're not toxic.

It's really important to – if you're really committed to being super healthy about the meat that you're eating – figure out where the exact farms are. Go to farmers' markets. I'm a huge fan of farmers' markets, because you can actually start talking to your suppliers and get the dialogue going about "What are you actually doing to my food? Where is it coming from?" For people who want to go that far with it, that's always a good idea. It's like farmers' markets, co-ops and places that are local.

I'm a really big fan of moving away from centralized agriculture for a number of different reasons, some health-related, some related to ethical reasons. Our whole structure needs to change. I'm a big supporter of local. Find people who are nearby who are growing food and who are moving away from that system. It takes a little research. No matter where you are, who you are, if you want your food to be high-quality, you do have to do some digging. You have to make some phone calls. You have to ask questions.

JM: Sure. I couldn't agree more. The organic certification label by the U.S. Department of Agriculture (USDA) has been progressively bastardized.

DM: Yes.

JM: They're punching more loopholes in it every year. Fortunately, there are some alternative certifications, like American Grassfed Association (AGA) and a few others that are a little more reliable. But I think focusing on the local sources would be even better. How do you apply this for oysters now or shellfish?

DM: I'm lucky because I live in the Pacific Northwest. You can take a 5-gallon bucket, like a paint bucket, and go and get a fishing license for a day. Just fill up the whole thing with mussels and wonderful things. But I mean there's the issue, of course, of contamination from the ocean.

JM: Or, as many people will comment on this interview, Fukushima radiation.

DM: Fukushima. Right.

JM: Especially the Pacific Northwest.

DM: I won't get too much into that issue.

JM: You could, because you can get a Geiger counter. They're not terribly expensive. You can measure it.

DM: You can measure it yourself if you really want to.

JM: You can try it on the water. I think that's an isotope. That usually isn't too high.

DM: It's not. Everything I've seen on Fukushima, we don't really have much to be worried about at this point. Maybe in a few select areas, but the majority of our food right now is pretty safe on that level.

But in terms of mercury contamination, there are independent and government researchers who will compile lists. You can find it online. Just google. See what the latest findings are and measurements in terms of salmon versus tuna versus oysters versus mussels versus clams. Shellfish tend to be really low in heavy metal accumulation just because they're not those big fish, like tuna, they're eating other animals consistently. As far as I've seen, they're usually pretty safe on that level. You'd want to make sure you avoid some of the illnesses they can create.

One of the issues I have in the Northwest is we go through those periods of, "Okay. Nothing on this area on this beach is edible right now because it's been contaminated with whatever plankton or algae." I don't know what. I don't even know what it is. But they tell you not to eat it because it'll kill you.

If you're doing your own shellfish foraging, you have to be careful about that kind of thing. But apart from that, shellfish are usually pretty safe. I'm not concerned about having those oysters local. Obviously, people who live in Iowa, you're not going to get a local oyster. It's not going to

happen. But you can get local livers. You might want to calibrate your diet to your environment a little bit.

JM: I don't know that there are, but it's certainly possible. Technically, they have shellfish farming.

DM: You could. I guess you could.

JM: You really do.

DM: There's a place in [inaudible 34:22]. There's a big old oyster pond.

JM: But one of the concerns that some people have is that – I'm thinking clams and oysters, I think oysters are pretty similar – they actually serve as filters. Many industrial operations will plant polluted waterways with these to clean them up.

DM: That's possible. I've heard the same argument made with liver. This is a filtering organ. But there's a difference between being a filter and a sponge. The things that we're calling filters, they're not necessarily accumulating the things that they're filtering. Like with the liver, you don't see a buildup of a bunch of nasty chemicals from any animal. The liver is actually usually pretty clean on that front. I believe it's the same with shellfish. I don't think they're going to have a buildup.

JM: With the liver I can speak pretty confidently on that. Largely because it's a detoxification organ. That's where you have your detox enzymes in phase 1 and phase 2.

DM: There you go. Yeah.

JM: It's responsible for converting from a fat-soluble toxin to a water-soluble toxin. And then, of course, it's excreted. It's not stored in the liver. It's excreted in the blood, typically, or in the bile, and then it goes into the gut or in the blood. You sweat it out, you urinate it out or spit it out, I guess. Yeah. It's not stored in the liver is the key point. But how do you prepare these oysters or shellfish?

DM: I usually just steam them. I take a big steam pot. Throw them in, cook them up, pop them out of the shell and eat disturbing amounts of them at once because they're so good.

JM: Really?

DM: They're very easy to prepare. Oysters, too, can be pretty good raw if you're getting a good source of those.

JM: Do you put any condiments on them? Like lots of salt or other spices?

DM: They're so salty on their own just because they're from the ocean.

JM: Yeah. They're fine.

DM: They can be good with some garlic. You can make a broth and put them in like a garlic and butter broth or something. I've seen that done. For me, I'm a super lazy cook. The less I have to do, the happier I am. If I can eat a head of lettuce on its own without doing anything to it, that's what I'll do. Same with oysters, I'll steam them. Or mussels, I'll steam them.

JM: Great.

DM: So good.

JM: Yeah. Certainly many people are deficient in magnesium. It's probably the most common mineral deficiency. But zinc is pretty much right up there. As I understand, oysters are probably the best food source of zinc.

DM: Absolutely. Which is why they're great for vegans too, because vegans tend to be pretty low on zinc. It's like a natural supplement.

JM: That's wonderful. How long have you been consuming this type of pattern?

DM: This pattern? That's a good question. The first time I ate fish, I was 17, I think. Eighteen or 17. It was at a school potluck. I had a college class, a poetry class or something. Somebody brought in sashimi. I hadn't eaten fish since I was 7. I was looking at this plate of sashimi like, "Who eats raw fish?" Then, all of a sudden, my hand just went like [phew]. It was like this instinctual, primal, my-body-needs-this. My hand just made a beeline for the salmon. I was just like stuffing it in my face. And then I was like, "It feels so good."

JM: Your luck changed.

DM: That changed my life. That un-vegetarianized me. I did dairy for a while, while I was trying to rebuild my dental health. I was getting fermented goat yogurt that was really helpful. I think it was pretty high in vitamin K2, which I didn't know at the time. I was eating that and it was helping restore a lot of my dental problems. But I get serious upper body congestion from dairy, even really high-quality dairy, so I had to drop that. I ended up incorporating more seafood.

I forget the first time I had liver, but that was also another, "Oh, my body needs this." I was probably so low on iron. It felt and tasted amazing. Especially living in the Northwest and just having access to a lot of seafood. I've kind of built my diet more. It's like a pescetarian/high-vegetable/various organ meats kind of conglomeration. How long have I been eating this way? Probably like seven years, maybe six or seven.

JM: What's the biggest tweak you've made in those seven years?

DM: That's a good question.

JM: Because you're someone who's not committed to an ideology. You're just going to let the facts speak for themselves. You're not committed to some specific philosophy. As you learn the material, you integrate it to your process. I'm wondering what you've learned in the past seven years that has changed your approach to eating the most.

DM: That's a great question. I'm actually thinking about it. I started out really fruit-based from my raw vegan history. That was something I kept in my diet for a long time. I would eat just a ton of fruit in the morning, smoothies. I just pound down on the fruit. I love fruit.

I've kind of switched more, especially learning more about the gut microbiome, learning about resistant starch, learning about different forms of fiber and their effect on the body. I've been incorporating more legumes, lentils and potatoes that have been heated and cooled down for the resistant starch content. I think that has helped. I think it's helped a lot.

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I've also kind of flipped my diet in terms of the staggering of macronutrients throughout the day. I used to start with a lot of carbohydrate and not much else, like in the form of just eating fruit. Now, I usually start with a lot of protein and vegetables, and my carby meals at the end of the day. I find that helps with sleep and it helps with energy levels. It helps with focus. I usually eat my first meal pretty late in the day. Like right now, we're filming. It's 12:44 p.m. in my time. I haven't eaten breakfast yet. I haven't eaten anything yet.

JM: Sure. So you're an intermittent faster? You and I are.

DM: Yeah. I won't say I do it consciously. I do it because I'm forgetful about breakfast.

JM: No. You could be forgetful because you're metabolically flexible.

DM: Exactly.

JM: You have the ability to actually metabolize fat for fuel, which the vast majority, 89 percent of the people in the country, do not have.

DM: That's true. Yeah.

JM: Yeah. Congratulations on that.

DM: Thank you.

JM: In preparing for this interview, I sought to watch some of your latest material on YouTube. The most recent one I could find was your presentation at the most recent, as we're recording this, at the Weston A. Price Foundation, where you attempted to debunk another program, which is Dr. Peter D'Adamo's *Eat Right 4 Your Type*, which is probably one of the best book titles out there, along with... wait — *Eat Right 4 Your Type* is [inaudible 41:21]. It's the Blood Type Diet, I think.

DM: The Blood Type. Yeah. It's *Eat Right 4 Your Type*.

JM: It's *Eat Right 4 Your Type*. Okay. Yeah. Okay.

DM: Yeah.

JM: *Eat Right 4 Your Type*. He should've gotten an award for creating that title.

DM: That's the best part of the book.

JM: It really is good. But you and I both share the same view in that it's not necessarily good. In fact, I've tried it in the '90s.

DM: Yeah.

JM: I was actually at a presentation before the book was published. He had his first draft. It was like 20 physicians in a small room. We were dialoguing about it. I tried it early on. It just wasn't good for me, because I'm blood type A. It doesn't work too well.

DM: Me too.

JM: It doesn't work too well for the As. But part of his thesis is the lectins. Maybe we can talk a little bit about it, but I won't necessarily go into the microbiome component.

DM: Sure.

JM: But the reason I bring it up is there's another pretty brilliant individual I've interviewed twice now, Dr. Steven Gundry, who wrote the book *The Plant Paradox: The Hidden Dangers in "Healthy" Foods That Cause Disease and Weight Gain*, which I'm sure you're familiar with. Maybe you're in the process of debunking his work.

DM: Not yet.

JM: But I think it's pretty solid. The reason I mentioned that is some of the foods you've mentioned that you're integrating into your diet are relatively high in lectins. I'm wondering if you have developed any strong positions on Gundry's approach on lectins, because it seems pretty solid.

DM: I'll say I'm not that familiar with Gundry's work at this moment. I've looked a little bit into it. I'm familiar with his general ideas, but I haven't gotten to the point where I'm like critiquing his stuff or measuring it for validity.

I will say that I do a lot of work with autoimmunity and that whole world. I will say that when the right elements are in place to create an autoimmune body, a body that's susceptible to that, whether it's genetics, lifestyle, antibiotic use, gut microbiome issues, at that point, the lectin problem can be real. There can be a legitimate reason to avoid foods that are high in certain lectins, especially

the ones that are individually triggering autoimmune responses. For people with a healthy gut microbiome, I don't see that being necessarily bad.

JM: Okay. So that's your vision of it.

DM: That's what I'm thinking. Because if you look at human history, our plant sources of foods – Look at other primates. Look at any wild animal. The lectin content of wild foods are generally pretty high. There's going to be a long adaptation period for us to learn how to coexist with those lectins in our diet. I think it's more of an issue of what the modern environment is creating a really unhealthy microbiome that's making it so some people cannot handle what should be a natural lectin load. That's probably my takeaway right now, subject to revision.

JM: I agree. I have stopped seeing patients over 10 years ago now. But I wish I had known this information, because I've concluded that if you have an autoimmune problem, it is just almost criminal not to integrate lectin avoidance to resolve that issue.

DM: Yeah.

JM: They are very pervasive. It's like maybe half the population.

DM: Yeah.

JM: You had mentioned that there's some reason that you have an issue. Well, they're spraying 5 million pounds or tons of glyphosate. That's a lot of glyphosate.

DM: That's a lot. Yeah.

JM: Every year. It's the most widely used herbicide in the world. Of course that decimates the gut barrier and allows these proteins to enter.

DM: Yeah.

JM: If you're eating a conventional diet, you've got a leaky gut. I think lectin avoidance becomes another issue. It's a really unusual profoundly healthy subset who can probably use the lectins like you're doing.

DM: Yeah.

JM: Would you agree with that?

DM: Probably more or less. It's very individualistic.

JM: Yeah.

DM: Yeah.

JM: Okay. Let's get back to debunking Dr. D'Adamo's book, *Eat Right 4 Your Type*.

DM: Yay.

JM: My take on it, which you didn't express in your interview, was that half the people have blood type O, half the people. That's the most common. His recommendations seem to be fairly consistent with what you and I would both agree is a pretty healthy diet.

DM: Right. Half the population is going to get [benefits].

JM: Yeah. It's relatively healthy. They're going to be better. There are amazing testimonials on his program. There's no question. Lots of people, but a lot of people get worse. Why don't you share your insights on it? Because you prepared for it and you gave a whole presentation on it.

DM: Right. I mean the fundamental issue with everything he's saying is that it's all wrong. The premise of his diet, this idea that certain foods have different lectins. Those lectins interact with what's expressed on our blood cells to cause issues within the blood. That then causes inflammation and diseases. There is absolutely no mechanistic evidence showing that we can obtain high enough levels of lectins from certain foods, and that those foods will specifically interact with our specific blood type, in a way, to create these problems. That evidence just isn't there. I don't know what he's talking about.

JM: It was my understanding that he had a lab where he was doing these studies.

DM: I think there may have been a lab, but there are problems with the research actually being published. It certainly hasn't been replicated by other researchers. It's more of a, "This is what I found. You have to take my word for it, because I wrote a book and I have a [medical] degree." There's a certain, "Just trust me. I'm a scientist," behind that. If there's anything I don't like, it's that.

I mean, fundamentally, just the whole idea that it's the lectins in food that are causing these problems via interaction with our blood cells is no bueno. What fascinated me – because when I went into that presentation, I was like, "This whole thing is just stupid. This diet's stupid. I want to debunk this." That was my approach when I was first looking into his research.

The more research I actually did on the different things that our blood type can influence in the body, one of the most interesting to me was that our ABO blood group can actually influence the composition of our gut microbiome for people who are secreters, for people who secrete their blood type antigens on the surface of mucous cells throughout the body, the saliva and the gut, the gut in particular.

Let's say that you're a blood type A and you're secreting an A antigen on different cells within the gut. There are going to be certain bacteria that use that antigen as a food source and as an attachment site. Those specific bacteria are going to be more attracted to your microbiome. They're going to set up camp there, in a way that they might not be doing to somebody who's a blood type

O. You're actually going to start shifting the proportion of different bacteria because of your blood type.

Tied into this is the idea of being a secreter versus a non-secreter. Most people are secreters. They will express their blood type antigens on the surface of different cells throughout the body. I think about 20 percent of the population are non-secreters. For this group, regardless of what their actual blood type is, they have a much higher risk of a lot of digestive diseases, a lot of different health conditions in general, related to the fact that their microbiome is fundamentally different. It's like it's providing a lack of attachment sites for different bacteria.

There is an influence of blood type on different things going on in the body. It's just not through the avenue that D'Adamo, or whatever his name is, it's just not through his theory. That, just forget that. Just throw it away, like the baby with the bathwater.

JM: Yeah.

DM: Throw all of it away. But there are still stuff there that I think are interesting to look at.

JM: Yes. It's interesting because we're always learning more. Life is a journey. We'll never figure it out, certainly, in our lifetime.

DM: Hopefully not.

JM: It makes it fun.

DM: It does.

JM: What's new that you're working on? You mentioned earlier before we got on that you were in the process of writing some articles or a book.

DM: Yeah. I've been underground for a few years. A lot of that was just personal life needing my attention more than my professional life. But I'm kind of back out working on some new projects.

One of those is called "Awesome Omnivore". It's going to be a little eBook, I'm thinking at this point, for people who are omnivores, on how to do it right. What kind of meat do you eat? A1 versus A2 dairy. How do you cook meat to make it as low-carcinogen as possible? How do you combine meat with different other foods to reduce the absorption of heme iron, which does seem to have some type of pro-cancer effect in the intestinal tract? All these different strategies for –

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JM: Even systemically, that's a really big issue.

DM: Yeah.

JM: If you have high iron, it's going to increase oxidative stress and really mess up your mitochondria. It would cause serious mitochondrial dysfunction.

DM: Yeah.

JM: I have a genetic condition called thalassemia, which predisposes me to high iron levels. I have to be really insidious at keeping my iron levels low.

DM: Yeah. Stuff like that. What's always interesting to me is because the molecular structure of heme is so similar to chlorophyll, if you're eating a bunch of green leafy vegetables along with your steak, the chlorophyll is going to be blocking the absorption of some of the heme. That alone is going to make that meal probably, on the whole, healthier for you, just for that one issue. It's a book, basically, of strategies.

JM: I hadn't heard of that. So it's competitive absorption between heme and chlorophyll. We certainly recommend supplements like chlorella for detoxing when you're eating seafood. But I hadn't heard of it for eating meat. That does make sense.

DM: Yeah. I think also this is why when we conduct studies on red meat intake, you see this correlations with colorectal cancer. A lot of that goes away when you adjust for a vegetable intake, because in America, meat eating is considered – I mean for people who are eating a lot of red meat – paleo movement, keto movement, low-carb movement, notwithstanding – those people are generally not as health-conscious as people who are eating a lot of vegetables.

There's like this kind of dichotomy of you have the vegetable eaters. You have the meat eaters, the meat eaters are not usually eating enough vegetables to offset that heme issue. But if you look at studies that actually adjust for that one variable, the link with meats problems tends to disappear. It's again, veggies to the rescue. But it doesn't mean that you can't eat meat too.

Anyway, the book is going to be a collection of things people can do to ensure that the meat they're consuming, the eggs and the dairy products (if they're doing that), is as healthy as possible. It's going to be like just an actionable "do this, do this, do this." I just felt that it could be good to compile all of the information in one place because they tend to disperse in nuggets to people. I just want to consolidate it. I'm working on that.

I'm also working on something called "Plant-Based Paleo," which is for people who are committed to being plant-based, again, for whatever reason. If it's preference, if it's moral, if it's spiritual, or if it's religious, what do you do in those circumstances to ensure that you can stay as healthy as possible for as long as possible with limitations that you're providing for yourself?

Because with vegans, there are vegans who have survived a long time on their diet. It's not impossible. The human body is incredibly adaptable. But we need to understand what's working for those people. We need to understand that there's a lot of genetic components that go into being able to convert plant-based nutrients into their animal-based sources.

You have beta-carotene, for example. People who have really good conversion of beta-carotene into retinol, they'll probably not going to run into reproductive issue, teeth issues, skin issues or eye issues, like some of us did, like I did. But for about 45 percent of the population, there are

mutations with BCM01 gene that prevents that conversion from being efficient. If you have two very common polymorphisms, your conversion rate is going to drop by almost 70 percent.

There's another less common mutation that will tank your conversion by 90 percent. If you're a vegan, you're not eating any preformed vitamin A, you have some of those mutations, you're going to have problems pretty quickly. How do we work with people's genetics? How do we work with their dietary limitations?

JM: In those conditions where the people have these genetic snips or single nucleotide polymorphisms, do you recommend supplements? Vitamin A is so inexpensive, retinol.

DM: Yeah. Supplements would be good. I'd love for people to take cod liver oil if they can get over that one issue. But it's, again, you need to be really aware of your specific conditions. What I did when I was a raw vegan was I saw this message board full of people who've been eating this diet for like 10 years. They were happy about it. They were supposedly happy about it. There's always stuff going on behind the scenes. But that was compelling to me, because if they can do it, I can do it. But that's not the case.

I have those BCM01 mutations. My vitamin A conversion is terrible. That's part of the reason that eating liver was a huge boon for my diet. It's my first concentrated source of vitamin A that I had in like a decade, more than a decade.

JM: Yeah. I suspect you did a 23andMe.

DM: I did. Yeah.

JM: That's pretty inexpensive. I think even though the Food and Drug Administration (FDA) changed their position, I think you still need to use a secondary source — and there's a bunch of them out there — where you take the raw data and convert it to like a 100-page report for like 5 or 10 dollars. It tells you what's up and you can figure it out.

DM: That's great. Yes. I highly recommend it. Yeah. You can do that and learn all about your unique needs. It can help you design your own diet too for your specific genetics.

JM: Yeah. I'm not a big fan of genetics, but there are some useful strategies. You certainly can avail yourself with that strategy.

DM: Yeah.

JM: This Plant-Based Paleo, is that also going to be an eBook?

DM: I'm probably going to release them about the same time, because my audience, whatever's left of it — I haven't updated my blog in so long. It's a fascinating mix of people who are still vegan but are really open-minded. I get emails all the time from people who are like, "I read your book. I read your blog. I just can't eat meat. How do I stay healthy with what I'm trying to do here?" I'm

not saying that I'm promoting this diet as optimal. I'm saying that if there are limitations, let's see what we can do with that. Let's work with what we've got.

JM: Hopefully, you'll be integrating the importance of using cyclical approach. Once you've established insulin sensitivity again, you absolutely need to increase your high-carb and actually increase your protein intake, which is hard to do if you're plant-based. But you still can do it.

DM: Yeah. You can do it.

JM: The beans would probably be a good strategy.

DM: Legumes, there always could be challenges with that. But, yeah, I think the cyclical issue is huge too. I don't know if you saw this post. I did a talk on this. I think the year before, or two or three years ago, I don't know. At some point in history, I did a talk on this, what I call them, macronutrients swampland versus the magic on two different ends. Because we've been studying keto. We've been studying the unique metabolic state that is ketosis, nutritional ketosis or fasting-induced ketosis. I think we have a lot of research looking at just the therapeutic benefits of that.

But what's really interesting to me is we have a pretty big body of literature, looking at what happens when fat intake is cut below 10 percent of calories. This is what, for me, this is going to be like listening to your critics sometimes.

The plant-based community that seems to be achieving success are the really low-fat people, like McDougall, Esselstyn and Neal Barnard with diabetes. There's like a group of people who have reported clinical benefits of putting people on a really low-fat, plant-based diet. But it doesn't happen when the fat intake goes up. It's like there's something going on there.

JM: Interesting. What's the threshold?

DM: It's about 10 to 15 percent of calories is fat.

JM: That's a really tiny amount.

DM: A really tiny amount.

JM: Fat's so nutrient-dense. It's 9 calories per gram.

DM: Exactly. It's really hard to keep things that low. You basically have to avoid all added fats. If you're eating animal products, they have to be super lean. Like this whole thing just blew my mind. Are you familiar with the rice diet by Walter Kempner?

JM: Yeah. That's a really old diet.

DM: It's a really old diet. He was using, in some cases, feeding people a pound of white sugar a day. They were seeing improvements with their diet.

JM: Sugar being the rice.

DM: No. White freaking sugar.

JM: Really?

DM: Pure cane.

JM: Wow.

DM: Right? He was putting people on this diet that was so heavily sugar-based, but the fat was really low. There's something – I'm not going to say that people should be going on that diet. There are mechanisms going on.

JM: No, no, no. But there are some benefits from this approach going on.

DM: Exactly. There's something going on with that really low-fat intake improving carbohydrate metabolism. We have the Randle cycle. There's a competition between free fatty acids and glucose in the bloodstream for you to use as fuel. I think we have enough evidence to say pretty clearly that when you combine fat and carbohydrate within the same meal, if you're a healthy person, you're going to see a reduced blood-glucose response, but you're going to see the same amount of insulin secretion.

Fat doesn't decrease the insulin needs of your body when you're eating carbohydrate actually. It kind of amplifies it. For diabetics, there have been studies where they'll take a potato, feed it to a diabetic, repeat the study with a little bit butter added, a little bit more butter added, a little bit more butter added. The more butter you add to the potato, the more insulin that person needs to use, the diabetic needs to use, to deal with that meal. There's like an interactive effect, even within the span of one meal between fat and carbohydrate.

Then, I think, these two different ends of the spectrum deal with by avoiding severely one macronutrient. I think we can take that information, because I don't believe in staying at one end forever.

JM: Sure, sure.

DM: Obviously you need fat-soluble nutrients. You're going to need some fatty foods that are highly nutritious too. At the same time, you're going to need more carbohydrate to deal with the long-term consequences of ketogenic diets, so cycling them.

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JM: That seems to be a perfect reason that explains the benefits of fasting, because there is no fat in fasting.

DM: That's exactly it. Yeah. Absolutely. Yeah.

JM: That's very interesting.

DM: I think there's a way to integrate everything. What it always comes back to is all this warring diet communities, they need to let go of the ego stuff and communicate with each other. Stop saying, "We have the truth. We own the truth." Start listening to the other side and try being curious about why things are working for them.

For me, that's the way I've learned best, by challenging what I believe. Because if what I believe can be dismantled, then it's not a good belief to hold. Like, you need to constantly revise your theory about the world, about nutrition, about everything. It needs to be in a state of flux.

JM: That's just terrific. Well, it's been an absolute pleasure connecting with you and having you share your wisdom.

DM: Thank you.

JM: I just love the way your mind works and philosophy. I'm sure you're going to be doing great things in the future because you've got the skillset to do it. I would be very grateful to your parents for providing you with that skillset.

DM: I'll tell them you said that. My mom loves you.

JM: They're largely responsible. There's no doubt in my mind. In the last year, I've lost my parents. I recognize at this time that they were largely responsible for giving me the toolset to achieve what I have.

DM: Yeah. Both of my parents.

JM: It's very clear. That's the same in your case.

DM: Yeah. They have been amazing teachers for different reasons, both of them. I will pass on that note to them. Thank you.

JM: Yes.

[END]