



**Transcript of “Dr. Joseph Mercola: Roundup,
Aspartame & The Gut Microbiome - #228”**

Bulletproof Radio podcast #228



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Dave: Hey everyone, welcome to Bulletproof Radio. I'm Dave Asprey, and yes, I have a little bit of laryngitis caused by sitting in my hyperbaric oxygen chamber without putting the oxygen through water the way you're supposed to. My own fault, dried myself out, but hey, I'm all oxygenated so maybe it was worth it. Today's cool fact of the day is that in the 18 and 1900s, doctors used to give tobacco smoke enemas as emergency resuscitators. The theory was that the warm smoke would warm your body and start breathing. I probably don't have to tell you but that treatment didn't have a great success rate. It turns out though there is an effect of nicotine on oxygen levels in the brain so maybe they had some little inkling of that but I don't think that's really something I'd recommended anymore.

Today's guest needs no introduction. He is none other than Dr. Joseph Mercola, founder of the number one natural health site on the Internet, mercola.com with one and a half million subscribers. He's written 3 New York Times bestsellers, the great bird flu hoax, the no grain diet and effortless healing. You've seen him on just about every major media outlet and he's also a tech guy, a computer hobbyist since the mid-80s, with an interest in the Internet that led him to create his website in 1997. Dr. Mercola, welcome to the show, it's an honor to have you on.

Joseph: Thank you for having Dave, appreciate it.

Dave: I'm going to do my best to keep my voice strong during this but this is probably the lowest quality voice I've had. I wanted to make sure I got you want to show to talk about Effortless Healing, because it's coming out in softcover pretty soon.

Joseph: Yes, paperback, real soon.

Dave: You've been one of those guys I've wanted to have on the show for a long time because you've written extensively for going out almost 97 to 2007, going on more than 15 years now of just consistently writing stuff that oftentimes doesn't match the mainstream. You're one of the guys

who's actively stood up and invested a lot of your personal assets in fighting for GMO labeling so people can know whether it's in their food or not. You've also stepped up on a bunch of other controversial issues. The number one question that I think listen want to know about and what I want to know about is, what's motivating you? Why you do this?

Joseph: I'm just passionate about health. Somewhat of it is a bit of a selfish perspective because I want to know as much as I can about how to stay healthy myself which is one of the reasons which is why I started the newsletter, learning from breaking news and information that leading scientists have dedicated large amounts of their lives, taken decades to figure out. Then they've published these findings, then I want to know about it. I figure if it's interesting to me it's probably interesting to a lot of other people, and it turns out it is.

The challenge with most physicians is that they are trained in this jargon that makes it almost incomprehensible to communicate with most of individuals. We've simplified the terminology and the words and really seek to communicate in a clear concise way the information that drives me to learn more about health. Many people find it helpful.

Dave: What changes have you had in your personal health or your personal performance, over the past number of years you've been doing this? What have you done to yourself that really has changed things for you?

Joseph: Life is a journey. Health is a journey too. I'm always learning new things. It probably is best to work backwards because it's hard to remember all of them. I've learned so much from having the opportunity to introduce some really incredible people and some novel ideas. The most recent one probably was not sitting down. I've been an athlete most of my life. I started exercising in 1968 and even ran a 250 marathon. If I ran that a century ago, it would have been a world record, but I ran mine in the early 80s.

I thought I was in good shape but after I was transitioned to full time editor on the newsletter, I was doing a lot more sitting than when I was seeing patients. I had this progressively increasing back pain that troubled me quite a bit. I was seeing a number of different

chiropractors, really incredibly good chiropractors and different stretches and strengthening exercises and inversion tables, lasers, infrared saunas, you name it. I did dozens and dozens of different strategies, and yet the pain persisted, never got better until I finally learned about sitting down and the importance of not sitting down.

I learned it from Dr. Vernikos initially, who is one of the scientists that was responsible for taking care of the astronauts' health. She just helped me understand the importance of not sitting, but what I would do is still sit down and stand up every 10 to 15 minutes, that it didn't work. I tried that for 6 months to a year until I interviewed Dr. Levine who is one of the leading researchers in this area out of the Mayo Clinic. He convinced me just to stand up. I did that, basically eliminated almost all of my sitting. I sit for less than 30 minutes a day typically. My back pain has never returned, unless I'm forced to sit for prolonged periods like on a plane or a long car ride. That was important.

Dave: A few people have commented that I'm standing up for my podcast as well. When I record these things I just about always stand up. You're only the second guest out of 200, pushing 240 guests now who also stood up, except for Kelly Starrett who is a functional moving ...

Joseph: Yeah, I've interviewed Kelly too, I love Kelly.

Dave: Cool, he's a great guy. He's doing a stand up desk at his kids school right now.

Joseph: Yeah, he's a real innovator. I just like his personality, it's great.

Dave: He's very enthusiastic and all. It's interesting though, out of 200 something people, many of them health and movement nutrition experts, the number of people who are standing up, you, Kelly, and me. Why?

Joseph: It's new information. I was skeptical for the longest time before I really applied it personally. It just didn't make sense. I thought that this exercise I was doing was more than enough to compensate for it, but the studies are really clear, really really clear. There's thousands of them

that say you could be exercising an hour, 2 hours a day and be a professional athlete and if you're sitting 12 to 16 hours a day, no amount of exercise is going to compensate for that. It's just metabolically you can't, and then physically and structurally too, at least for me it was a big issue.

I think there's this disbelief somewhat like there was with smoking. Many people call sitting the new smoking, but the same thing, people were in disbelief when they were smoking. They didn't understand that it can cause loads of disease, heart disease and cancer. Now we know. That was one. I had a girlfriend 7, 8 years ago that got me into some bad eating patterns. I gained about 10 pounds. I was up to almost 200 pounds. It wasn't muscle. I had extra body fat. I must have been up to like 20% or so. Learned about intermittent fasting and the importance of that.

That was a huge benefit of my life, but then also learned that it's not something you do all the time. Definitely it's targeted for a specific time. Usually when you get rid of your insulin resistance, then you don't need it anymore. Could be a problem. You could lose way too much weight if you continue on something like that. You're working out pretty extensively. You have to be careful. Most people don't have to worry about that.

Dave: Yeah, that was. It seems like over the years you've definitely added intermittent fasting and maybe you've increased the amount of fat in your recommendations. What led you to increase fat in the nutritional stuff that you write about?

Joseph: You don't really have much of an option. I'm a big fan of Dr. Ron Rosedale, who was one of my early mentors. He really is the person who first made me aware of the importance of insulin resistance in 1995, so 20 years ago I was in a meeting with him in Chicago. Maybe 20 of us in a room, was a small natural medicine meeting. He went on for 3 hours about diabetes and insulin resistance. It was a new topic to me. Even now 20 years later the central core of my understanding of why most people get sick is because they have insulin resistance, it's persuasive.

In order to address that, you have to lower your carbohydrates. Too much protein is a problem because that also increases insulin. Then you're really left with fats. You just have to differentiate the types of fats and healthy fats. One time I was eating 70, 80% fat but now that I'm not insulin resistant and my body fat is at pretty much ideal, 11% or so, I probably had a lot more fruit than I typically do, and some grains. Maybe 40% fat or something like that.

Dave: Grains but no what and no gluten I'm assuming.

Joseph: No wheat. I like quinoa. Some rice.

Dave: Quinoa and rice? Why quinoa versus rice?

Joseph: Quinoa is really high in protein. It balances it out. It adds variety to my diet is one of the reasons I picked it. It seems to be a really decent grain and some other nutrients in there.

Dave: From the fruit perspective, there's all this stuff written and a lot of which I support about fructose and triglycerides, fructose and cancer, fructose and advanced glycosylation, aging of tissues and all. There are a group of people who say, fruit doesn't count because it is fiber that cancels out the fructose effect. Where do you fall in your perspective on fructose from fruit versus fructose from high fructose corn syrup? I know one's better than the other, but should be still care about fruit?

Joseph: Absolutely. I would not advise the majority of people watching this, although your audience might be a little different from mine, to consume large amounts of fruits. It's probably an unwise idea if you're insulin resistant. How do you know if you're insulin resistant? Are you overweight, are you diabetic, are you having problems with high blood pressure, or are you taking statin drugs? If any of those conditions, or even better have your doctors measure your fasting insulin level.

If any of those show that you have insulin resistance, then it's probably wise to stay away from fruit or at least have it in small quantities. Basically we recommend less than 15 g of fructose a day. Obviously there's a wide range of fructose in fruit depending on which one you

choose. As long as you keep it low, you're probably okay but if you have insulin resistance you want to be really careful. If you don't, then you can have it and monitor those other variables. As long as they're normal you're probably okay.

You definitely don't want high fructose corn syrup because that's an unnatural product. Being healthy really isn't that hard. That's what I learned after 30 years of studying health is, it gets down to some pretty simple basics. One of them is to eat real food, what a concept. Stay away from processed foods, that's one of the reasons why you want to avoid high fructose corn syrup. Orange, mango, tangerine, these are real foods. If you have them in high amounts, the insulin is a problem. It's still a real food, that's what you want to focus on. That's a simple principle in the works really quite well. The fiber and the fruit is also important to modulate some of them, the spikes in the insulin, although Dr. Rosedale would probably disagree with my perspective on this. I still think it's probably okay. I've gone back and forth on it but I'm at the point where I think it's okay. In fact I had 5 dozen fruit trees on my property that I planted, in the process of producing fruit.

Dave: There's also the pleasure principle, fruit tastes good.

Joseph: Oh yeah, absolutely.

Dave: I recommend from my research, if you're going to have it, probably at dinner or after dinner, get a little bit of the serotonin effect from it but keep your overall levels low. If you're having fruit for breakfast, fruit for lunch, fruit for dinner, because fruit and vegetables are good for you together with the same thing. You're probably not going to like what happens especially if you do it every day.

Joseph: Have it seasonally too. Ideally it's best to grow it yourself. I live in Florida so I have an opportunity to grow a lot of different fruit trees.

Dave: That's cheating, in it? Because you grow fruit year round?

Joseph: Doesn't bear fruit year-round. I don't live in southern Florida. They can do that. Most of the year we're able to harvest something for free.

- Dave: I'm up in Canada and we just planted a few trees. We'll have a 4 week season where there's fruit.
- Joseph: Yeah, you're really restricted to apples, pears.
- Dave: Yeah, a few cherries when we're looking.
- Joseph: Cherries would be good up there too. The cherries in Florida aren't as good.
- Dave: Yeah, that's a fair point. The avocados in Florida, let's talk avocados. They're one of your favorite fruits, they're one of my favorite fruits. Why do Florida avocados taste like water balloons? Have you noticed the difference?
- Joseph: Yeah, I don't have many Florida avocados. Typically I get the Haas ones, although I'm growing down here, I live in North Central Florida so you can still grow the Haas types. There's different variants. They take a while to mature. My trees are just starting to bear fruit now.
- Dave: That's a lovely time. The avocado thing is something a lot of Californians don't know, but there's tropical avocados and there's the Haas variety which are creamier. The nutrition factors for them are very different. The amount of fat you'll get from one specie of an avocado versus another, from memory I think it's about a 30% difference in the amount of fat.
- Joseph: Which one has more, the Haas?
- Dave: The Haas. The tropical ones you get in Hawaii or Florida or sometimes in Vietnam or somewhere in Southeast Asia, they are watery. Instead of the fat there's water. They're still good for you, but you just have to eat more of them and I don't know about the sugar content difference. I was astounded when I had Hawaiian guacamole, I'm like, what's wrong with this? It didn't have the creamy character to it that I'd come to expect.
- Joseph: Yeah. The Florida avocados are really big. I typically get the Haas. Typically I go up one a day. They're really good in smoothies too. You can't use a full one, you've got to use a third or even a quarter.

Dave: Yeah, because they're just big.

Joseph: Yeah.

Dave: There's a few things that I'd love to run through that are controversial where you've been a leading voice on these. These are the ones where generally I'm in alignment with what you say there. I think that your research is sound and that you've got a lot of courage because you just come out there and say some things like, look, this is the way it is. There's always controversy on the Internet. Let's talk about aspartame. Can you give me the short run down based on your experience, based on your research on why it's bad, what it does?

Joseph: Aspartame, it was about aspartame right?

Dave: Yeah.

Joseph: Aspartame is the most pernicious artificial sweetener. I wrote a book earlier which is called sweet deception, was really targeted for Splenda. In fact was threatened by Johnson and Johnson before I published it, that if we published it they were going to sue us. It was a 20 page letter from a big New York law firm. Nevertheless we spent a little extra time on our references and documentation They never sued us because everything we said was true.

The reason why aspartame is the worst, because it's the most toxic. Briefly it's pivoted as being natural, but it's essentially an ester bond between phenylalanine and aspartic acid. When it breaks down to the body, your body doesn't have the metabolic machinery to detoxify it like other species do. Humans just don't. As a result it goes into the body, passes the blood brain barrier, there it's detoxified to methanol. A potent neurotoxin. I'm sorry, formaldehyde. The methanol breaks down to formaldehyde. The formaldehyde is just, it destroys your brain cells and de-natures your DNA, it's bad news. Toxic as can be, it can cause seizures, migraines, even brain tumors. It's really clear. The evidence is uncontroversial if you carefully analyze it.

If you look at the studies that were published early on, it was like 85% of the studies that were done by industry show that there was no problem where 90% of the ones that were independent showed problems with it. It was really clear. Thankfully industry has caught up to this, I think largely as a result of our targeted exposure on this. If you type in aspartame on the Internet using Google, we'll come up number 2. They didn't like that. The sales of diet sodas in general, aspartame being the leading component most of the diet sodas are down 6% the last 2 years. What does that translate you? I was curious what type of impact we're having financially on these company. Do you know what that number is? 6% decrease in sales annually?

Dave: It's got to be like 3 billion or something.

Joseph: \$10 billion.

Dave: Oh, I love that.

Joseph: \$10 billion loss. Just recently Pepsi announced that they're taking aspartame out.

Dave: That's the biggest win ever, by the way. Just full credit, your voice has been one of the ones that made that happen. I think you really have been leading that, so thank you.

Joseph: Yeah, you're welcome. I don't know that many are aware of that but it's been important for us. In fact, there's some interesting developments that you will see next year that will literally blow the top off of the entire diet industry. We've got some things in the works that it's going to be mainstream news front page. You will be surprised next year once this thing launches. It's really exciting, we're taking them down.

Dave: It is.

Joseph: A while ago we realized, I can provide information. We've been doing this about 20 years, 18 years this year. Actually 18 years. 5 years and we said, listen, you can continue to educate people. We do that, but we have to play more aggressive roles, so we turned into an activist. We been active in the GMO labeling issue. I think we're going to be victorious

there too. We're definitely causing changes in the direction of Monsanto and these other evil corporations. We're making progress.

Someone needed to step up and take a leadership role and work with other people getting coordinated and collaborated to focus on this. They outnumber us in volume of influence of their resources. They have access to billions and billions of dollars, and we just have a few millions. That's nothing. The number is more than 1000 to 1. We copy a lot of their strategies because their strategies work. It's pretty interesting what you can do if you're committed and you're dedicated and you coordinate with a lot of like-minded individuals. There's some incredible people out there. We just connect with them, work together cohesively and basically we're able to clobber them. We will ultimately be victorious in many of these fronts.

Dave: Just maybe last year I went to a conference at Stanford on neuro-marketing, which is using brain science to look at the people as they look at what's happening with ads. You look at an ad, what does it do to your brain? Sitting right next to me was the CMO for Monsanto. You're saying their ad techniques work? The big companies like that really do go out and do every little thing they can do.

Joseph: They can afford it.

Dave: Yeah, they can.

Joseph: It's crazy. It is amazing how effective you can be when you're dealing with garbage and lies and deception and fraud, because these techniques are so powerful. It's not so much a technique, but there's even more powerful strategic interventions that you can do, and they aggressively deploy. We learn by following what they're doing. We deploy similar strategies because they work. It's pretty effective how we're able to make some dents. One of the most recent ones was the strategy, well, I can't go into that because it's still under the discussion of ...

Dave: Don't mess anything up here, you're doing good work.

- Joseph: Yeah, it's pretty amazing what you can do.
- Dave: When you talk about we, obviously you're not in this all by yourself...
- Joseph: Oh no. I'm pretty much the voice. I get some of the ideas and I'm the content team leader, but I have a whole team that's responsible. The person that runs the company is Steve Rye. He's a really high power strategic incredibly good thinker. Right now he's going to be, I just spoke to him today, he's going out to Denver tomorrow and he's going to be meeting with the American grass fed people out there, and slow meat, I don't know if you're aware but most grass fed beef in the US is not grown in the US.
- Dave: Yeah, Australian and New Zealand and Africa.
- Joseph: We're changing that. We're changing that. There's the American Grass-fed Beef Association, we're cooperating with them. We're having this whole big strategy of raising the beef that we eat in the US on properly 100% pasteurized beef. We're using the byproducts, the organs, a lot of other things for foods and for pet foods. There's so many things that can be done. People weren't interested. We have the ability to take that knowledge, coordinate things and then offer it to people because we've got the influence of reaching a lot of people. We're reaching 10 million unique visitors every month now.
- Dave: That is unbelievable.
- Joseph: Interesting that it's grown so much.
- Dave: Bulletproof gets 10% of that. One of the things that I learned from grass fed more than 10 years ago as part of restoring my wife's fertility, I just will not eat grain fed meat because it just makes me feel awful. The Bulletproof coffee shop is a restaurant opening in Santa Monica actually this month. We are featuring grass fed beef, but not just grass fed beef. Grass fed beef from this ranch and then from this ranch and then from this ranch, just like wine. Wine from this winery is different. Beef from this beef-ery different. We want to show people, taste it, see how you feel. Once they taste it once at the Bulletproof coffee shop, they can go

out and they can get grass fed beef and find out the difference it makes for them. That will change the demand for grass fed beef which will of course change the supply, which is what you're talking about doing. Thanks for that work.

Joseph: The problem is you have to have a finishing operation which actually butchers the cattle. It can't be mixed up, it has to be dedicated to them. You need a large volume for that to work. It's just a matter of coordinating the efforts and the supplies so that they could keep that plant busy.

Dave: There's also differences when you're butchering grass fed cattle and you cool the carcasses. If you cool them wrong, it's tough. If you cool them right, it's tender. It's just different than grain fed meet. A lot of places just aren't even equipped to do the work.

Joseph: Yeah, the devil is in the details. Do it right otherwise it's not going to work. Once it's done right it's an amazing food.

Dave: It really is. This year, when I'm home, all of the beef that I eat actually ate the grass from the front part of my property. We're raising the grass but not the cows yet. It makes a difference in how you feel and how your kids perform, how your brain performs.

Joseph: Yeah, that's good. Ideally one of my passions is regenerative agriculture because some of the projections are that within the next 60 years we're going to lose most of the topsoil on the planet. We'll not be able to sustain the human race. It's a relatively urgent need. It's 60 years away, but it's not that far. What I learned is that integrating animals into the process is a really powerful way to do that. The best soil ever developed on Earth supposedly is in the American Great Plains when they had all these herbivores, these buffaloes that were depositing their waste and trampling it in and having these cocktail cover crops go to further the amount of organic content and carbon that can integrate into the soil.

Dave: Let's talk about glyphosate or Roundup. It's an antibiotic, it kills bacteria. When you spray it on that healthy soil, what happens to that soil?

Joseph: A number of things. It chelates out the minerals. It's originally patented out as a chelator and an antibiotic. The reason it works as an antibiotic is because it takes away the minerals. Zinc and manganese are two of the most potent ones. It is bad news. It really devastates, if you put glyphosate or Roundup, Roundup is actually much more toxic. Some of the studies show it might be 100, 200 times more toxic than glyphosate because the surfactants in Roundup make it much worse. Totally disrupts cell membranes, mitochondria. It's bad news.

If you put it in sterile soil, guess what? It doesn't work. The way it works is through the soil microbes. Then they cause diseases to the plant that basically cripple it because it's immune system is severely compromised. It's really devastating. Not only is it the issue with GMO crops and the Roundup that they're spraying on it, but they're actually spraying it on non-GMO crops. Like wheat, who doesn't eat wheat? Virtually very few people. They use it to dry it and it's just as damned dangerous once it gets in there because it's integrated into every single cell of the plant. They use it to kill the wheat and then dry it out. You cannot wash this stuff off. The average American, how much glyphosate or Roundup do you think the average American is eating every year?

Dave: I've never quantified it but it's got to be a ridiculous amount because it's sprayed on a crop. You eat the crop.

Joseph: It's their body weight. About 150 pounds a year.

Dave: No way. How that can be?

Joseph: They're not eating that much glyphosate, they're eating that much food sprayed with glyphosate and integrated into the cells. They're spraying basically a billion pounds of this stuff every year. It is dangerous as can be. It is absolutely ridiculous if you're getting away with a sham. It all relates to this legislation. I don't know if you saw my interview with Steven Druker who wrote the book *Altered Genes*. He knew about this stuff 10 years before I did and he actually sued the FDA in 1997 for their 1992 ruling on glyphosate that essentially allowed it to be grass generally recognized as safe, which was the essential reason why it's used worldwide now because of that 1992 FDA ruling.

Through clever deceptive techniques his case was dismissed. Even though they showed the basis of it, they said it wasn't relevant to this case because it was introduced after they made the decision. It's just so insane. It's really a phenomenal book. He helped me understand that it's not so much Monsanto that's really the pernicious evil in this while operation. Who do you think was responsible for this if it isn't Monsanto? They are the bullet. Who pulled the trigger?

Dave: DuPont I would guess?

Joseph: Who's that?

Dave: DuPont I would guess?

Joseph: No, it's not a company. Those are the bullets. The one who pulled the trigger was a molecular biologist. Scam above all. If they weren't in on this collusion they would've never gotten away with it. There's no way the FDA would have ever made that ruling in 1992. It was about 18 years. They introduced genetically engineered products and then there was this really bad feedback from the public, they said, "No, we can't have that." They said, "This isn't going to work, we've got to change our strategy." They all got together and had agreed to tone down this thing. They just took that strategy thinking that if the public disagreed us, we can't get our funding. They were all willing to collusion on this. A few of them weren't. They basically helped save us, some of these early molecular biologists. It essentially was a molecular biologist that ruined this whole strategy. The professional scientific community.

You remember that speech that Eisenhower gave when he was president when was basically leaving the office, remember how he warned us of the military-industrial complex? Remember that? I'm sure you've seen videos of it, quite famous video. He also warned the scientific elite even as much as the military-industrial complex. That's the problem we have. That's the problem we have with molecular biologists and the safety of GMO foods, same damn problem we have with vaccines. That they get away with this nonsense, that they can essentially mandate it for the entire population, or virtually the entire

population with virtually no insurances or guarantees of certainty, none. We just want to do it.

Dave: One of the things about a glyphosate that's really interesting to me is that when you spray it on fungus it causes the fungus to make a lot more mycotoxin. I've just completed, I'm launching next week a film called Moldy. I've for 2 years been filming this. I've interviewed guys like Richard Schumacher, Mark Hyman, Daniel Amen. A whole bunch of people have been affected by environmental mold growing in their homes. We tortured our soil microbes so much that the fungus in the soil started making more toxins than it did historically. There's been genetic changes and there's been toxin level changes. Glyphosate is one of the things that made what grows behind your dry walls so toxic.

The connection between what's happening in our homes and what's happening in our cropland and in our soil is undeniable, but it's almost unheard of. I'm particularly interested in the angle of, if some plants get sick, when you spray glyphosate or Roundup on them, what happens to the fungus? Are you familiar with that story? I know you've written some things about it but that may have been your team. Are you up to date on mycotoxins?

Joseph: I just interviewed Suzanne Somers. Her new book is Toxsick, T-O-X-S-I-C-K. She and her husband were both exposed to it. Her husband had had a progressive neurological disease and they wanted to do something. They basically thought he was dead. She was diagnosed with cancer. No one figured out it was toxic mold in this home they were in, because her home in Malibu was destroyed and they had to go in this rental home, which was a really high-end home but it was loaded with toxic mold in the basement. She figured it out and got better and didn't go on any of the anticancer drugs.

70% of the microbes in the soil are fungal. That's one of the reasons why I'm so excited about using wood chips as a soil amendment to build, not only increase the concentration of carbon in the soil but to actually massively increase the mycorrhizal fungi. Increase earthworm population, decrease irrigation needs, almost eliminate the use of fertilizers. It's a beautiful thing. When you do these things and you use

these proper biological regenerative agricultural approaches, you don't need products like glyphosate and Roundup which devastate the soil microbiology, cause the fungal elements to mutate to the point where they're making toxins that are even more pernicious to humans. Certainly not beneficial for the plants.

They just have set this whole ecological balance and they're pushing it in the wrong direction. You don't have to do that. It really is sad, just simple basic principles. I love regenerative agriculture because initially it was a puzzle to me. I didn't know how to get plants to grow healthy but there's a lot of similarities between that and health, so I was able to pick it up relatively quickly. I'm in the middle of this pilot project of my own personal property to see how it works. Once it does, I'm going to promote my next book, will be Effortless Gardening.

Hopefully encourage a nationwide repeat of what we did in World War II with the victory gardens where the vast majority of the produce produced in the United States was grown in people's backyards, which I think is really where we're heading towards. In 60 years we're not going to have any commercial topsoil left. That's not a good thing.

Dave: Yeah, we're independent.

Joseph: The only way to get your own food is grow it. That's a good thing because you can make incredibly nutrient dense food if you grow it locally. Another important part of the growing your own healthy food is our minerals, obviously. That's one of the reasons why, even organically grown food isn't necessarily good because it depends on what they did with the soil and how they were able to bring the mineral contents up. One of the things I've learned is that minerals from the ocean can be very useful here if you are able to effectively remove all the sodium chloride which can be highly toxic to most plants, especially citrus plants. If you remove them all then you've got 62 minerals that usually can catalyze these great limited actions and you can maximize genetic potential of the plant.

When you use these things typically in their ionic ocean minerals and you do them in a foliage spray, unbelievable. You just see tremendous

growth, resistance to disease and the taste and the flavor of the food is just incredible. It's amazing what simple things like ground cover and these minerals and healthy seeds, arum seeds, the type of food you can produce.

Dave: It's remarkable. I live about a 10 minute walk from the ocean and this year my family will grow all of its own food.

Joseph: Excellent, that's hard to do.

Dave: It is, we're on 32 acres and we're turning it into an organic permaculture farm. We're in very much alignment there.

Joseph: Do you circulate your family's waste back into the land?

Dave: We have a septic tank. From that perspective we do. Do you mean compost waste or something else?

Joseph: Yeah. That's what I do with my own urine. I live in, I guess it's a suburb, municipality. I save all my urine and I put that in the plants. Diluted of course.

Dave: That's got to be really good for them. I do something a little simpler since you can't see anyone from where I live. I just walk out and pee wherever I feel like. Do it the old-fashioned way. Exactly.

Joseph: You've got to have chickens for sure.

Dave: There will be ducks and geese but they're not in yet. Ducks eat slugs better than chickens and chickens are common. Duck eggs are also so creamy and delicious.

Joseph: What works for slugs too is something called Sluggo, S-L-U-G-G-O.

Dave: Is that the copper stuff?

Joseph: No. It's a natural product. I think it's iron pyrophosphate. It's toxic as heck to slugs and it's a nutrient in the soil. It's a win-win.

- Dave: That works. People who are listening now might be going, oh my God, Dave and Dr. Mercola just started talking about killing slugs and ducks. The whole point, the reason we're talking about this is you and I both care very much about health and how we feel. If you want control of your biology, if you want to actually be in charge of your life you've got to be in charge of what you put in your mouth. Right now not only is this a cost-effective way to do it, but this is a way to get higher quality than you could buy at the grocery store for any amount of money. That's why it's worth doing. That's why if you want to really make a lot of money as a young person, start a business where you go and you manage the garden for someone in they're backyard when they're too busy to do it. There's a huge wave for that.
- Joseph: Yeah, I'm a big fan of science and technology. I'm absolutely convinced of the eventual integration of artificial general intelligence, which will eliminate literally tens of millions of jobs. You know we have an unemployment problem already in this country. There's no question, it's going to get massively worse. There's no way the economy in this country is going to get any better any time soon, it just isn't. That's a fact. That's great advice you have. That is one good strategy, because people need to eat. If you become proficient at these tools and techniques and serve them in that way, you'll always have a job.
- Dave: Yeah. There's also something that comes from Buddhist teachings. Buddhists say, minimize the number of people who touch your food. I have no idea whether that scientifically validated but there's something to it.
- Joseph: It makes sense, you can't process it if many people are touching it. I feel like it's just more difficult.
- Dave: You can't process it. It may be something more subtle than that where there's something about, oh, this cucumber grew in my backyard and I'm eating it for dinner. It may synchronize you with your biome. There's talk about communication between soil microbes and the microbes in your stomach. Maybe there's benefits to having the soil microbes from your backyard talk to the things in your stomach to tell

your system about what's going on in the environment. There's just stuff we don't know but you feel better when you eat this.

Joseph: No question. You asked early on one of the things I was doing. I think it was like 5 years ago now, we connected with, I had dinner with Dr. Natasha Campbell-McBride. She is a neurologist who has a child, a son with autism and got passionate about this and now does that full-time. She's really known for the GAPS diet which is gut associated psychology syndrome. The basic strategy there is ultimately use fermented food. She has a lot of bone broths. It's a transitional diet that she puts people on, but ultimately people wind up on the fermented foods to optimize your gut.

I started doing that once after I had dinner with her. Basically realized that these bacteria are making a lot of good things. Not only are you getting the volume of the beneficial microbes, but I said, "How many are we getting?" We sell a really good high potency probiotic with incredible strains, one of the best on the market. I think 1 or 2 capsules is 100 billion, which is pretty high potency. I said, "If I'm eating the fermented vegetables, how many are in there?" We did the analysis, it was like 10 trillion. It was more than a whole bottle of our probiotics, and just in 2 or 3 ounces of the fermented vegetables. I said, "This is good, I don't need to take anymore probiotics."

Then I said let's make this better, because one of the important nutrients that most people don't get enough of, almost everyone seeing this video is deficient in this, is vitamin K2. I was one of the guys who really heavily promoted the use of vitamin D. Probably I was the main catalyst to get it implemented and adopted in the United States. I didn't invent it or anything of course but I just popularized it.

Dave: You inducted...

Joseph: Endlessly persistent with it. I am grateful that people have adopted it but vitamin D doesn't work. It works in conjunction with K2 and it is massively important for increasing your bone density, but more important reducing cardiovascular disease. It sucks out the calcium from the lining of the blood vessel and puts it back into the bone. You

can have the best vitamin D levels in the world and it's not going to do that. It's not designed to work that way. It needs to work with K2.

Where do you get K2? It's fermented foods. The highest source in the world is Natto which is produced by a pieces of bacteria called *Bacillus subtilis*. I said, "Let's see if we can do something." We changed and played, we had the startup culture that I made my fermented foods with, we changed and played with it. We got to the point where it's making 4, 500 micrograms of vitamin K2. Typically, a vitamin K2 supplement is about 200 micrograms and it's pricey. It's a dollar, 2 dollars a pill. You can ferment your own food with the specific starter culture. We developed one called kinetic starter culture. You get vitamin K2 for free and you get 10 trillion bacteria.

Dave: Do you sell that?

Joseph: You have to spend 50 dollars of supplements every day to equal that, and it's real food.

Dave: Is that something you sell?

Joseph: Yeah, kinetic culture, but you've got to make the vegetables yourself.

Dave: That is so interesting. One of my biggest complaints about fermented food Dr. Mercola, is that you don't know what it is. Most people just dump their cabbage in a bucket and then they don't control temperature, they don't control time and they don't know what their fiber culture is until they're getting histamine, they're getting histamine...

Joseph: A lot of people use wild fermentation. They're getting a week, it takes 3 weeks to do it and it's an experiment.

Dave: Wild fermentation I think can be dangerous because of what we just talked about where things like the spraying of the soil changes the toxicity of the fungus, so then all of a sudden you get yeast out there. What's happening, whatever that yeast is making maybe it's good for you, maybe it isn't, but you just don't know. It's a fermentation roulette from my perspective.

- Joseph: That's a good tech tip. I just had a discussion with my CEO right for this call. I didn't realize, it's still relatively, it's not appreciated. Vitamin K2 isn't emerging. It's really only a very small number of people who understand this, probably a good percentage of your audience I would assume. It's huge, it's important. It's a very small fraction of people who get 100 percent of vitamin D. The best way to do it is to just get it for free in the food you make. You can buy an supplement and swallow it, but why do it when you get it for free?
- Dave: You can also do the good old-fashioned cultured butter. I'm well known for promoting butter.
- Joseph: Yeah, I don't think it has, you need about 200 micrograms. Depending on the way to culture it, I don't know if it would be therapeutically or clinically useful. It might only be 20, 30 micrograms.
- Dave: Interesting, I'll check that out.
- Joseph: You have to look it up or send it to a lab and measure it if you're going to use it regularly.
- Dave: It also depends on the quality of the butter and the quality of the fermentation and all. I'll actually take that as an...
- Joseph: Butter is good for other reasons. I go through a pound of butter almost every week, certainly every two weeks. I love butter.
- Dave: It's ridiculous for me what adding butter back in, I was a raw vegan for a while. I used to weigh 300 pounds and had mold toxicity and Lyme disease and chronic fatigue and fibromyalgia. All the bad things you could get. What a difference putting butter back in with my vegetables made.
- Joseph: Yeah, it's good stuff, it really is. It should be raw and grass-fed ideally.
- Dave: Yeah, I think grass-fed is terribly important. Raw if you can find it, great. If you find cultured, not raw, but still grass fed, there's lots of benefits to that.

Joseph: That'll work.

Dave: It'll work but it's not the best. Something that can affect fermentation, something that can affect other things like your gut microbe is fluoride. You've also been one of those guys out there who's been saying for many many years, fluoride is a drug. My grandfather was a fluoride chemist on the Manhattan project. He said, "I wouldn't put that stuff anywhere near my body." I drink water with it as a kid and my teeth show excessive fluoride and I don't touch the stuff. I don't let my kids touch the stuff. Why should people listening to this podcast consider making sure there is no fluoride in their water? What's bad about it?

Joseph: Right now we have 40% of American adolescents has dental fluorosis, which is cosmetic damage to the outside of your teeth, which is sounds like what you had when you were younger. That's one. That's just cosmetic. You've got to think, if it's causing my teeth to be discolored, what the heck is it doing to my bones? It's not good. It's well-documented to cause osteonecrosis of the jaw. It's a fact. That's one of the dangers. It's a halogen, one of the other pernicious problems with it, especially if you're a woman. Hypothyroidism is an epidemic in the Western world. Fluoride will actually displace the iodine in the thyroid causing you to be relatively hypothyroid.

It's really hard to get fluoride out of the water. It sounds like where you live it's not an issue because you've got your own well, with 32 acres. If you live in a municipality it's almost invariably going to be fluoridated. We were successful in keeping fluoride out of the water in Portland, 28th largest city in the United States. They've always been fluoride free but the city Council there decided we're going to change this. The pro-fluoride movement said we're going to make an example of Portland. We were able to intervene 2 years ago and help them in the support to defeat that initiative. Portland is the largest city in the US that's not fluoridated.

Dave: Portland has special powers. They've been able to block Uber which is just insane. I don't know how anyone can do that. That city will go to the ends of the earth to do what it wants so I'm pleased that they did that.

- Joseph: Yeah, I'm pleased too although I don't know about Uber. I'm a big fan.
- Dave: Me too, I love Uber.
- Joseph: I like this technology, it just seems to make so much sense.
- Dave: If you can stop Uber you have almost unlimited power, that's what I'm saying. I also take Uber, I don't rent cars anymore. I was sad when I got to Portland, I didn't know what to do but I hitchhiked. It was almost the same.
- Joseph: Yeah, that'll work. It clearly will be a non-issue in the relatively near future because we're going to have self driving cars. They exist now. I own a Tesla and told within the next month, they'll be able to have a software download, we'll be able to self drive on the highway. It'll be here and you won't even have to own a car. You're just calling up on your phone, band bang, comes and picks up, you don't have to worry about insurance, parking, none of that stuff, Your garage, use your garage for an office.
- Dave: A lot of people probably don't know that about you but you're a technology futurist guy. I hang out with Peter Diamandis, the SpaceX people.
- Joseph: I don't know him personally but he's a good guy.
- Dave: I'm a member of his mastermind, his abundance 360. I've had the great fortune to spend several days with him. All of the guys at that level are saying exactly what you're saying, which is, yeah, self driving cars. They're not 10 years the way, they're half. Mining asteroids for minerals, I've held the equipment that is being sent to the asteroids in my own hands. This is happening, the world is changing in a way that we don't know about. The thing that sucks is that you and I both know this, but it doesn't matter if we have self driving cars if there isn't any food because we killed our soil.
- Joseph: Or you're sick as can be because you're eating the wrong food.

- Dave: We'll have only self driving ambulances, that's the only thing we'll need to just shovel us back and forth.
- Joseph: So true. Most of those guys don't understand the health component, they really don't. They said that, it's been my experience.
- Dave: They didn't but the last time I was at one of these groups, there's 20 of these guys with more money than the average person by orders of magnitude. I pulled out my little crack bag full of vitamins, I take 100 supplements a day. Instead of looking at me like a crazy person like they had for years in Silicon Valley, most of these guys said, "Oh, you too?" They pull out their own little bags of vitamins, they're all paying attention. That is a big change as important as self-driving cars.
- Joseph: It's not the supplements, it's the food.
- Dave: They're doing both.
- Joseph: You have to have the Kefir.
- Dave: If you eat crap, supplements won't fix it. If you eat great food, supplements still help.
- Joseph: Yeah, absolutely. I take a number myself. One of the other things that I'm doing, just so this isn't an associated tangent, because an artifact of not sitting. Well, I'm walking. I walk 2 hours a day when I'm home. I usually walk it on the beach so I'm able to read. Now I can read 2 books a week, that's my average. Sometimes it's 1, sometimes it's 3. I've read both of Peter's books Bold In Abundance and, I don't know if you've read the biography of Elon Musk recently. It was just published a few weeks ago.
- Dave: It's on my list, I heard it from NPR.
- Joseph: It is just beyond, you have to read this book. It is one of the most inspiring books I've read in a long long time. He is an amazing individual, absolutely amazing. He will go down, he will far eclipse Steve Jobs and Bill Gates together.

- Dave: Yeah, I met him at SpaceX, I almost called it Steve X. Met him at SpaceX. Yeah, the guy is unstoppable mentally. He's driven by something I have not seen before. It don't matter.
- Joseph: The key to be successful is to be passionate. Boy, if you look up passionate in the dictionary, it'll probably have his name there. The book is written so well and it just details all the experiences, the great amount of experiences that he's had in his life that demonstrates that passion and that commitment, that drive, that dedication. Just insurmountable in the midst of what appears to be imminent failure on multiple times. It was a really inspiring book, very encouraging for anyone.
- Dave: What makes me think about Dr. Mercola, is how you and I and a few other people can be the Elon Musks of our soil because we need that level of innovation to fix what's already been done to the soil. Without that level of world changing, it's going to be ugly 100 years from now. It's fixable though, I absolutely believe it.
- Joseph: We're making changes in trends. You got to get this critical threshold or tipping point of people to understand, appreciate and apply, then it starts to spread. That's my new passion really is regenerative agriculture. That's why spend a lot of my spare time is understanding this deeper and really applying it and start to teach it to individuals.
- Dave: I had no idea. We're so much in alignment on that. Maybe if I'm in Florida sometime I'll look you up if we both are in the same place, I'll look to your garden. If you're ever on Vancouver Island, you're always invited to check out my garden.
- Joseph: Which island are you on?
- Dave: I'm on main Vancouver Island. I'm looking out over Salt Spring but I am on the Vancouver Island side.
- Joseph: Yeah, it's a nice area.
- Dave: We're coming up on the end the show. There's one question that I've asked everyone on the show and I think your answers might be

different than anyone else after a couple hundred episodes. Given everything you know from your work and just from your life, if someone came to you today and said, "Look, I want to perform better at anything." What are your top 3 recommendations? If you want to kick more ass, do these three things.

Joseph: Perform better at anything?

Dave: Yeah, whatever you're here to do. Some people are moms, some people are dads, some people are entrepreneurs, some people play soccer. Whatever you love.

Joseph: Clearly based on the core of my understanding of how to optimize your health is to not be insulin resistant. Do whatever it takes to not be insulin resistant. Typically if you are, there's going to be intermittent fasting. All the principles we talked about are alluded to this conversation, which is healthy fats and minimizing the grains, the fruits, all of that. Be insulin and leptin resistant, it's cousin is actually even more important. It's easier to measure insulin.

I think a hidden one that I ignored for many many years and more fully appreciate is sleep. Make sure you're sleeping 8 hours. It sounds simple and stupid and your parents probably told you about it all for years, but somehow most of us think we're exceptions. You're hard driving, you've got a lot of stuff to do and no time left to do it. You've got a family. You compromise your sleep. Make sure you're getting 8 hours of sleep would be huge.

I think really, 3 is hard. One of the things to focus on is your fluid intake, and from my perspective is to optimize your water. There's a lot of ways to do that. We didn't talk about them but structured water is massively important. Making sure you're structuring it with a specific types of minerals. Structured water is energized water, so water inside of cells. It's water that you get if you take a fruit and squeeze the juice out of it or a vegetable, you have vegetable juices. All that water is structured, the vegetable does it or the plant does it for you. There are mechanical devices that will structure it for you too.

Then you can also have water that's high in hydrogen gas which is a whole topic. That would take about an hour to explain but that's what happens in our gut, the production of hydrogen gas. That's all related to the water intake. If you're drinking healthy water you're not drinking soda or Gatorade or these other power drinks like Red Bull or something.

Dave: The opposite of structured water, right.

Joseph: Yeah, yeah. Did I get 3?

Dave: That was three. You had insulin resistance, structured water and sleep.

Joseph: Yeah. Some basics, but there's so many more that you could talk about like passion ...

Dave: Let's do 4 more. You're the only guy to get a bonus 3 because you spent your life doing this stuff. What would your next 3 be?

Joseph: What we talked about is just to be passionate, because will drive you. Elon is the classic example there. Just truly authentically, not academically, intellectually, but at your core just passionate about something, you're going to be successful at whatever it is as long as it's your true authentic passion. That's key. An artifact of that is to be joyful as part of that process.

A secondary effect from sleep is meditation, which I think is another powerful discipline that certainly a lot of people appreciate and do but many people fail to implement. I've been playing with that for the last year and able to meditate for about 30 minutes a day. I use the technology that is able to monitor my brain waves. It can tell me what levels of mediation ...

Dave: You and me both, I love it.

Joseph: That's what I do. Love, it's the ultimate important driving in your relationships. Ideally your spouse or your children, your parents and your relatives and friends. I think that's the key.

Dave: Awesome. Dr. Mercola, thank you for being on Bulletproof radio today, I really appreciate it.

Joseph: Thank you for having me, thank you for all you do. You're doing some great work there. There's not a lot of people that understand this at the core level like you do. I appreciate you spreading the word, and congratulations. I think the last time I looked you're in the top 10 natural health sites, so that's pretty darn good. That's quite an achievement.

Dave: Thank you so much, I'm working to help a lot of people similar to the way you are.

Joseph: Obviously you are. Just remember that the more people you help with this information the more you're going to be vilified. They don't like that.

Dave: I've noticed that. It actually threw me for a little while. Thanks to some encouragement from J.J. Virgin, I think she really helped me out and Michael Fishman and actually Tim Ferris too.

Joseph: He's a good guy.

Dave: Yeah, he's a good guy. He's like, "Here's how to deal with them." Oh, that's right. I just don't worry about it. You've certainly been vilified but from what I can see, you're directionally accurate. If there's something that needs tweaking, you've shown a willingness to change your recommendations like eat more fat, add intermittent fasting, add high intensity interval training. Over the years you've clearly evolved and been very public about it. What else can people ask for?

Joseph: Yeah, just be honest and know that life's a journey and just share what you learn and be honest about it. That's awesome. All right, thanks again Dave, thanks again for all your work. Keep up the good work.

Dave: All right. If you enjoyed today's show, do me a favor, go out there and check out Effortless Healing, Dr. Mercola's book, and check out his work because it's good work. While you're at it, I would love it if you went on to iTunes and you said Bulletproof radio rocks, give us the thumbs up or



a star or whatever you do on iTunes to say that we're good. Thank you so much.

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