



- Dr. Drew Sinatra: Today, we are joined by another father-and-son doctor team and discuss their new book, *Brain Wash*. In their important new book, the Doctors Perlmutter explore how modern culture threatens to rewire our brains, and damage our health.
- Dr. Steve Sinatra: They say living in today's 24/7, hyper-reality poses serious risk to our physical and mental states, our connection to others, and even to the world at large.
- Dr. Drew Sinatra: In our conversation today, we explore how we are being mentally hijacked and what we can do about it, so that we can begin to think more clearly, make better decisions, reconnect again with others, and develop healthier habits.
- Narrator: Welcome to **Be HEALTHistic**, the podcast that's more than just health and wellness information — it's here to help you explore your options across traditional and natural medicine, so that you can make informed decisions for you and your family. This podcast illuminates the whole story about holistic health by providing access to the expertise of Drs. Steve and Drew Sinatra, who together have decades of integrative health experience. **Be HEALTHistic** is powered by our friends at Healthy Directions. Now, let's join our hosts.
- Dr. Drew Sinatra: Hi folks. If you like what you hear today and you want to listen to future conversations on all things integrative and holistic health, subscribe to our podcast at **BeHealthisticPodcast.com**. Also, check out and subscribe to the Healthy Directions YouTube channel, which features video versions of our episodes, plus extra videos you won't want to miss. And finally, we have more with me, Dr. Drew Sinatra, my dad, Dr. Steve Sinatra, and other health experts at HealthyDirections.com.
- Dr. Drew Sinatra: Welcome, everyone, to another episode of **Be HEALTHistic**. Today, we have a very special show, we have another father-son doctor team with us today — it's Dr. David and Austin Perlmutter. Dr. David Perlmutter is an internationally-known, board-certified neurologist, #1 *New York Times* bestselling author, and fellow of the American College of Nutrition. His preventative approach to brain health focuses on the role of lifestyle changes in wellness and longevity. In this program, he's joined by his son, Dr. Austin Perlmutter, a board-certified internal medicine physician who focuses on helping others to improve decision-making and quality of life. Together, they joined forces to focus on ways to create sustainable joy, health, and meaning in the modern world.
- Dr. Drew Sinatra: In their new book, *Brain Wash*, which the Doctors Perlmutter co-authored together, they say that our brains have been hijacked by the modern world. They have been literally re-wired to keep us hooked, unhappy and unhealthy.



We'll find out more from this other father-and-son doctor duo during this engaging interview.

Dr. David Perlmutter: Delighted to be here.

Dr. Austin Perlmutter: Thank you for having us, this is great.

Dr. Steve Sinatra: Hey Drew, I wanted to just kick this off and mention that Dr. David Perlmutter, I've known him for years. And I knew his dad was a neurosurgeon, but when I read the book, *Brain Wash*, when I read this book...David, I never knew you did a year of neurosurgery residency. I mean, that was something new...I mean, you never mentioned that to me before.

Dr. David Perlmutter: The right answer here is you never asked! But yeah, I did a year in general surgery. Actually, I did a year of neurosurgery research, I did a year of general surgery, and then a year of neurosurgery, as well. It wasn't really what I thought I would want to do. I appreciated the one-on-one type of interaction, which was great...but I wanted to be touching more people, I wanted to have a broader reach. And so I felt that neurology, through then outreach, would be a better choice for me. And certainly glad that I made that choice. I mean, I think that there are wonderful neurosurgeons out there doing great work, it just wasn't what I wanted to do.

Dr. Steve Sinatra: Well, that's amazing...you're a well-trained dude, I'll tell you that. Surgery, medicine, neurology, neurosurgery. I mean, our listeners are really going to enjoy this show, especially with this father-son combination. This is a first for us, by the way. We've never done it, a father-son before. So this is numero uno.

Dr. David Perlmutter: There you go.

Dr. Drew Sinatra: Well, Austin, do you want to share a little bit about what it's like to have your father as a mentor in the field?

Dr. Austin Perlmutter: Sure. So I think this is something that, obviously, you can probably speak to, as well. But it's a pretty unique situation to not only have somebody in your family in the same field that you're going into, but also to have them be such a widely-known and respected person within the field. So there's always the big shoes. But I think that more than anything else, what my dad has been able to do for me is to demonstrate that there is a way of creating a path through the medical field that enables you to be consistent with what you actually believe, and not just, kind of, towing the traditional line of, "Here's how medicine is practiced and this is the best that we can do."



Dr. Austin Perlmutter: He has done this through his entire life, and not just as a father, but as a person within this space, I think proven that there's more to this than just prescribing medications. There's more to this than abiding by the traditional structure of how medicine has to be practiced. And so, I'm very thankful for that, in addition to all the more traditional father-son interactions that we've had over the years.

Dr. Drew Sinatra: And what was it like growing up under his household? I mean, did you do these things all throughout — eating good foods, meditation, all these lifestyle changes? Or were these, sort of...as he evolved in his practice, they come on board later on?

Dr. Austin Perlmutter: Definitely the second one. I would say that it's another of the aspects of my dad's personality and of his actions that I really appreciate is that he's willing to change perspectives and evolve as the data changes.

Dr. Austin Perlmutter: And to that end, I think we both benefit from having my mother's influence because she's always been very grounded as it relates to eating the right types of foods, and to having anti-stress techniques and doing the meditation. And really, I think she was the principal meditator in our family for a long time. And then, in my dad's case, as the years went on and he read the literature and experimented with new techniques, he was really able to change his dietary preferences and to change his approach to these anti-stress techniques to find what worked for him. And again, also what was being substantiated in the literature. And then I, through osmosis and being in that house, had the benefit of learning from both of them. And that has obviously led to me being somewhat of an amalgam of both my parents' influences.

Dr. Steve Sinatra: When I was reading your book, there was a section in there that you and my son, Drew, were strongly connected with. It was actually being in the forest. I mean, both of you guys have spent time in the forest. I mean, Drew, you should talk about your experience real briefly, but it really struck me because you were talking about the forest as being a savior in time. And then you supported the research with it — you talked about being in nature, how it increases your natural killer-cell activity in the body and improves your immune system. You also mentioned how the adrenaline went down in the urine at the same time as being a nature. Drew, I would just comment briefly how you spent time in nature. I mean, that's amazing...where you learned a lot about medicine from being in nature.

Dr. Drew Sinatra: Well, I think it's about, really, what David was saying in the book, with disconnection syndrome. We're so disconnected in this modern world, even though right now, we're feeling connected on this podcast. Through technology and such, we've really become very disconnected. And nature, and being in



nature, is one way to reconnect again. Recently, I did a four-day wilderness fast, actually, in the mountains last September. And that was a very profound experience, because when you spend four days alone, in nature, fasting — things happen to you that you normally would never experience in your normal day-to-day life. And I think that people need to experience more connection with nature. And it doesn't have to be a four-day wilderness fast, like I did. You can just go out for a walk in your neighborhood. You can go for a stroll in the woods, or a bike ride, or even a swim for that matter, and connect with the elements. Because when you do that, you ultimately connect to yourself — and that's really why we're here on this planet.

Dr. Steve Sinatra: Yeah, and actually, Austin mentioned in the book — and David you, as well, about something as simple as the magnificence of a sunset. It's amazing. I just moved to Florida, David, because I missed the sunsets and I realize how healing the sunsets are. Just watching the sunset at night, I think, is so mystical and so calming of an overactive, let's say, sympathetic nervous system. It's really cool to be in that visual space where you're watching the sun go down. If you see the green flash, that's incredible, as well — but just connecting with the sunset. So again, Austin, I really resonated with some of these aspects of nature that you brought out into the book, it was really cool.

Dr. Austin Perlmutter: Look, I think there's so many things that we could talk about on those points. And I'd just like to say, the sunset is obviously a big, popular thing in Florida. People come to the beach on the West coast for the sunset and on the other coast, they come for the sunrise. And I think what's great about it is that it does allow us to begin and end the day with something more concrete. And it gives us that circadian reset, such that we're able to know in our brains, I mean, on an unconscious level, now is when I need to start winding down in the case of sunset. Or on the other end, with sunrise...now is when I need to start ramping up and getting ready for the day ahead.

Dr. Austin Perlmutter: But what I like about it, too, is that if you do it regularly, it enables you to experience this magnificent nature that can show you why you don't need to spend all your time looking at a screen. It's I think often the case that we outsource our entertainment to screens when we could be doing that with nature, and nature has different effects than screens do. So to then segue into the point you were making about sympathetic versus parasympathetic activation, I think that is one of the central mechanisms by which nature is so good for our physical and our mental health. And part of that is that when we're in nature, we're not in the modern world. We're not engaging with our email, we're not on our computers and watching TV, and we're not walking around in an air-polluted downtown, where these are things that have been shown to increase sympathetic activation and subsequently increase cortisol levels,



induce chronic stress, and all of the subsequent problems that occur with our health. Versus nature, which is, again, the absence of those things.

Dr. Austin Perlmutter: But there are these other chemicals called phytoncides, which are these volatile organic compounds that are actually secreted by certain types of trees and plants. And it's been shown that those, without any sort of visual stimulation, are capable of inducing some of these positive benefits in our health. And so the last point I'd make here — so yes, I'm absolutely endorsing nature, it's been incredibly helpful for me in my own physical and mental health but I think it's beneficial for everyone — is that our health is a reflection of the environment that we are living in. And so we're not separate from what's happening around us.

Dr. Austin Perlmutter: And we see this type of thing with air pollution, which has been associated with not just neurodegenerative diseases, like Alzheimer's, but also with more impulsive decision-making. We know that those chemicals from air pollutants, or I should say air pollutants themselves, are interfacing with our bodies in such a way that it influences our thought-processing. And one of the ways it does that is by binding to your receptors in our lungs, because our lungs actually have this massive surface area that has about 30 or so square meters of surface area that is exposed to...actually, 30 to 80, depending on who you talk to, the outside environment.

Dr. Austin Perlmutter: And I think it's the same thing with our gut, it's the same thing with our skin. When we're going out into nature, those barriers are being exposed to what is happening in the environment around us. And when that environment happens to be a healthy, natural environment, that is actually programming your body and brain for more healthy thinking and for general health. And so, not to take this too far, but if you consider the relative increase in cases of diseases, allergic-type diseases, in children who grow up in more urban centers versus more rural centers. And you think about how those kids, when they grow up in farms actually have exposure to more nature, to animals, to bugs in their environment, and how that then programs their immunity towards a more healthy state. I think that same thing is happening as adults when we go out into the natural world. We are receiving signals from nature, which through our bodies, through our nervous system, as well as through our barriers, like our lungs and our gut, are basically enabling us to create a healthier version of ourselves. And that then translates into lower rates of anxiety, and depression, and heart disease, and diabetes — all the things that we are looking to get out of nature.

Dr. Steve Sinatra: And just taking that one step farther, Austin, and you mentioned this in the book, where if nature enhances empathetic behavior, then the absence of



empathy is narcissism. And again, I studied as a psychotherapist for years, and the problem with large aspects of our society today is the narcissistic behavior that a lot of us run into. And we have narcissistic character structures, as well. But again, nature is one way of overcoming overzealous, narcissistic behavior, which can have a serious downside in our health, because it allows us to act in a false self and to create sympathetic overdrive, which again, burns up not only the autonomic nervous system and has effect on dementia and the brain, which I want to get into subsequently. But also, it has a serious impact on the heart, as well.

Dr. Austin Perlmutter: Yeah.

Dr. Steve Sinatra: So, again, I was really excited when I read your book. I have to tell you...this was a great book, I really enjoyed this.

Dr. Austin Perlmutter: I appreciate that. Let me speak to that narcissism piece. And what I like to look at is the more general sense of what does it mean to express empathy versus to be narcissistic? I mean, at the very end of the day, narcissism is looking after yourself and putting yourself over other people.

Dr. Steve Sinatra: Right.

Dr. Austin Perlmutter: And I think that what happens with nature is you can't help but experience the connectedness to the entire world. So, it's not you, and then there's nature. It's...you are part of nature. You go out there and you experience the awe that comes from looking at a mountain range, or the ocean, or a river. And that can be daunting to people.

Dr. Austin Perlmutter: But what we see is, when people have that experience of awe, they actually are more likely to engage with pro-social behavior towards other people. They're more likely to demonstrate empathy towards others. And, incidentally, they're more likely to demonstrate empathy towards nature. So, to engage in behaviors where they're going to look out for nature in a scenario or a simulation where they have to decide whether to cut down a bunch of trees, or to leave them alone.

Dr. Austin Perlmutter: And so, I think that, looking at some of these major themes in what's going on in the world today, and trying to frame those through the lens of either empathy or narcissism. And I've said this before, but the biggest threats that humanity faces today are basically a result of empathy deficiency.

Dr. Steve Sinatra: Right.



Dr. Austin Perlmutter: And what do I mean by that? Well, think about climate change, right? I can't be looking out for other people if I'm basically using up all the resources and not planning for tomorrow. I can't really be expressing empathy towards others if I'm considering launching a nuclear warhead at another country. These things just aren't compatible with the idea that we're all in this together, and that we have to look after each other.

Dr. Austin Perlmutter: So, I think that, in general, we need to look at anything we can do to increase empathy. And not just because it's better for the planet as a whole, but because it's better for us. People who have higher levels of empathy have better friendships, have better relationships — there's no surprise there. You need to care about somebody else in order to have a strong relationship with them.

Dr. Austin Perlmutter: I think there are these tendencies in our society right now for people to, I would say, I think, revert to these more, kind of, narcissistic “me first” viewpoints in the world. And that is, in large part, fueled by higher levels of stress because when we're experiencing a lot of stress, our vision constricts. We're not able to see the bigger picture, and that's actually an adaptive response because, as you can imagine, if you're out there on the prairie and you are worried about the next five or so minutes of survival, you can't be thinking about what's happening back home at your tribe that's miles away. You can't be thinking about planting for the next season, you can't be thinking about what's best for the planet...you need to just preserve your life. But when we're under conditions of chronic stress, as is increasingly the case in the modern world, we're no longer able to see that bigger picture. And we're just thinking about self-preservation, which I think is really the most prevalent form of narcissism today.

Dr. Austin Perlmutter: So, our goal has to be to get outside of this really short-sighted viewpoint and to start looking out for other people. Because, again, it's not just good for them, it's not just good for the planet — it's good for our mental health. We feel better about ourselves when we're looking after somebody else. And my dad and I say, which is kind of an interesting thing — it's a selfish behavior to care for others. Why is that? It's because you are going to feel better when you do that. So, everyone wins in these situations, and it's just the question of, are we willing to make that change or do we want to cling to this messaging, which we've all been fed, which is you've got to look after you. It's all about success on your own, you've got to do better than other people, and always compare yourselves to the Joneses. But, yeah...I think there are better ways of approaching this. One of those ways, to get back to the original point, is through nature exposure.

Dr. Steve Sinatra: Yeah. And you also mentioned generosity, which can boost the immune system, as well. So that, again, was another really great point in the book.



Dr. Austin Perlmutter: Yeah, it doesn't really take that much. I think that it still comes back to this idea of sympathetic versus parasympathetic tone, which is that, when you're engaging with more pro-social and generous behaviors, that is the more parasympathetic activity. Sympathetic is tighter wound, it's looking into the next little bit, and I do kind of associate that with more selfish behavior. Not because it's some sort of terrible thing, it's because that's the way that set of the autonomic system has been designed. When you're sympathetic, that is telling you to shift your focus towards the short term. It's telling you, "We're not going to worry about what's happening a year from now. We are going to survive, and I'm going to get my genes through the next five or so minutes, so that we can keep this DNA going."

Dr. Austin Perlmutter: So, that's why I think it's so important to understand that messaging and the modern world that has been set up to activate our sympathetic nervous system and get us to make decisions, is going to be those messages that convince us we need the short-term fix. Now, whether that's buying a new car, or the latest clothes, or the latest phone. I mean, these are just messages that are teaching us, "You are living in a place of scarcity, you need to be acting out of fear, and you need to be making choices that are going to ensure your survival for the next five to ten minutes" — as opposed to what's overall best for you, years from now.

Dr. Drew Sinatra: And David, this sort of connects us to your part in the book where you said, "It has become clear that disconnection is at the core of what's keeping us from truly embracing health, longevity, happiness, and contentment. These goals are attainable." Can you speak to the whole disconnection piece, and what that's doing to our brains, the hijacking that's happened? And may I use the title of your book, *Brain Washing*?

Dr. David Perlmutter: Yeah, I would say that when people see the title of the book, they're kind of wondering, what's that all about. But I think you begin to get it as you get into the book, and you see what we're trying to develop here. We're trying to really wipe the slate clean and let people A, realize what has happened, and then B, regain control. And it centers on this notion of disconnection syndrome.

Dr. David Perlmutter: And there are multiple levels that we use the term. We use the term from a very physiologic perspective, neurophysiologic perspective, to represent a disconnection from the amygdala to the prefrontal cortex and back. In other words, there are these two important areas of the brain that we really explore quite deeply.

Dr. David Perlmutter: Much of what Austin has been talking about as it relates to empathy, or lack thereof, and narcissism and impulsivity really is centered on, among other areas,



this primitive area of the brain, which is the amygdala. Versus a more sophisticated, much more sooner-evolved part of the brain called the prefrontal cortex that is an area that is involved with our ability to engage in compassionate, empathetic behavior, to plan for the future, and to make decisions that are much less impulsive, but more in line with looking at as much information as is available that can not only guide us in terms of the acute decision-making process, but can embrace the notion as to what may the consequences of our decisions made today — what those might look like tomorrow, next week, next month and how they will affect me, but also how they may affect everyone with whom I interact. As well as what Austin was talking about earlier, how it may even affect the planet.

Dr. David Perlmutter: So, the impulsivity center, if you will, or the impulsive behavior that seems to emanate from the amygdala and other areas is an activity that is kept, let's say, in check, or governed, by an overriding input from the prefrontal cortex. And the more that we foster that connection, the more “the adult is in the room” to be involved in the decision-making process.

Dr. David Perlmutter: What tends to lock us out of the input from that prefrontal cortex are so many of the influences that we experience now in our modern lives — like not getting enough sleep, distancing ourselves from nature, fanning the flames of tribalism based upon the social media sites that we gravitate towards, the fear that's inspired day in and day out by the news channels, the types of diets that we engage, which are by and large highly inflammatory. All of these inputs and others tend to segregate this governing prefrontal cortex from the amygdala. And then ultimately, the default state is one in which the amygdala kind of rules the day, and we do become more impulsive, more self-centered, less empathetic, less compassionate, and less able to make decisions that look at benefiting others, as well, and thinking towards the future.

Dr. David Perlmutter: That said, the problem with that scenario is then those decisions — not to get a good night's sleep, not to eat foods that we know are lower on the inflammatory scale, not to engage in activities that are compassionate and benefit other people — the more we do that, through neuroplasticity, the more we wire a brain that locks into this part of subservience away from the prefrontal cortex and being, as I said, subservient to running our lives from this program based upon fear emanating from the amygdala.

Dr. David Perlmutter: Now, it's true, and we brought it out aggressively in the book that, to a very significant degree, the world is conspiring to keep us in that state. Because it benefits others for whom our attention, and certainly our pocketbooks, have great interest. So, even to the very obvious extent of the pop-up ads, the click-bait that is so pervasive on our online experience, dragging us away. The



pervasive nature of the threatening news...we're all very well aware that there's some bad things going down in the world right now. But to be bombarded by that 24/7 does nothing more than fans the flame of fear. And that, through neuroplasticity, makes us perceive then that the world is a very threatening place, and really enhances our disconnection.

Dr. David Perlmutter: So, that is the physiological or pathophysiological nature of disconnection syndrome. On a broader scale, what we developed in the book is how then this fundamental disconnection broadens itself to a place of our disconnection from each other, our disconnection from nature, our disconnection from the salubrious nature of our genome — wanting us to be healthy, trying as best as our DNA can to express itself in ways that reduce free radical-mediated stress, that reduce inflammation, that creates higher levels of BDNF, to give us a better brain.

Dr. David Perlmutter: That's what our DNA should be doing. It's what allowed us to survive the past 800 to 900,000 years, however you want to define our being as human to get to this place, to have this conversation today. But we work against that, we disconnect from the signaling of our DNA by virtue of the choices that we make. Many of which are perpetrated upon us by these extrinsic influences over which we do have some control, when we finally recognize those influences. Our purpose in *Brain Wash* was to call them out, that's step one. Once they become visible, then the reader can realize that these things are happening and can make plans, make adjustments, to re-contextualize these experiences, such that they aren't so insinuated in our day-to-day decision-making processes.

Dr. Steve Sinatra: So David, just to bring this down a notch to our listeners, if the amygdala is sort of stuck in a sympathetic overdrive mode, and that overdrive mode has to do with reward, impulsivity, and emotion. When I was reading your book, you were talking about fragrances crossing the blood-brain barrier, that could be an antidote to this heightened sympathetic tone. And as soon as I was reading it, it brought me back to the Bach flower remedies that I've used for years as a cardiologist, because a lot of these flowers had to do with fear, or happiness, or compulsion, or whatever it is. Can either you or Austin connect the dot, where you can take in a fragrance and the fragrance can tame — and that's the word — tame down an overactive sympathetic amygdala, which has to do with, again, emotion, reward, and impulsivity, like you just mentioned?

Dr. David Perlmutter: I'd be absolutely happy to tackle that. And Austin mentioned earlier these interfaces that we have with our environment, the two doubles tennis court interface that our gut offers with the environment, in terms of its size. And Austin talked about the 30 to 80 meters squared of the lungs, and the visual input that we get, the auditory input. And I think the olfactory input has been



not as well appreciated, but in fact, the olfactory input is speaking to our deepest brain. The input we get, basically, chemical inputs to our very deep brain centers are strong, are the first memories that we have. And they are probably the strongest activators that we have of emotion, in terms of the environment, and are also deeply involved in regulating immunity. And I think that, getting back to the discussion about Drew and Austin and nature, and Austin mentioning about these phytoncides.

Dr. David Perlmutter: There is a lot going on in our nature experiences that is speaking directly to our emotional brain, our limbic brain, and as such having a powerful role to play in terms of immune regulation. And how fascinating it is, moving forward, that...I guess I'm going to be the first one to blow out the candles, here. One of the common experiences with COVID-19 infection, first off, is loss of olfactory function. Think about that. And what we're now seeing is in post-mortem analysis of the brain, several areas of the brain do seem to be involved in some patients. One of them being the olfactory bulbs, those are the areas where chemical information from the environment comes in and ultimately enters the brain. So, what is happening to us moving forward, as a legacy of this infection, might well be the loss of a very, very powerful, as you well-stated, input into our immune function, into our awareness of what's going on around us.

Dr. David Perlmutter: This is one of the cardinal senses that we have, and to lose that is really associated with immune dysfunction, but also brain dysfunction, in general. One of the earliest indicators of a declining brain from a cognitive perspective, vis-a-vis Alzheimer's, is decline in olfactory function. And I think it's very interesting that one of the screening tests being done for people, for example, going into a doctor's office right now, in addition to taking their temperature, is checking them for olfactory function.

Dr. Steve Sinatra: Really...well said. So the nose is a direct connection to the brain.

Dr. David Perlmutter: That's right. And that can be harvested for the delivery of medication, there are certainly protocols for giving insulin through nasal inhalation, because there's a direct pathway through the skull, an area called the cribriform plate, right into the brain. So this is being looked upon as this untapped resource in terms of delivery system for active pharmaceuticals into the brain. I mean, people snorting cocaine knew about that a long time ago.

Dr. Drew Sinatra: David, could we speak to what's happening currently with COVID-19, and even mask-wearing? Because as we're talking about this, I'm finding that I have to wear a mask in the office when I'm with patients. And I used to practice five element acupuncture, where I needed to really smell odors in the room to really get an accurate diagnosis for someone. I am finding that it's interesting that I'm



losing the olfactory component with my patients now, I don't have that access to it. Obviously, we absolutely need to be wearing the masks. Where are you at with this whole mask-wearing, and not being able to see people's lips and facial expressions — and what is that doing to our brains right now?

Dr. David Perlmutter: It's very good question, Drew. And I would say that beyond that, the sterility now of the air that we breathe might be proving detrimental. We know that when we are within three feet of another individual, that we are aggressively participating in their exhaled microbiome. But that was from another time. And we now realize that what other people may be exhaling could be life-threatening for us, it's just the way it is. So, I'm a big proponent of getting your mask off as much as you can — when you're out for a walk, when you're out for a jog, when you're out in nature, provided you're not near anybody. But by all means, wearing a mask is not only protecting you, to some degree, but it's an empathetic gesture. It's saying, this is more than just about me and my risk for getting this virus. It's about me not knowing I could have been exposed. I could be infectious and I care about you, the next person.

Dr. David Perlmutter: So when we see people say that I refuse a mask because it's my right to not wear a mask. Well, yeah, it is, I guess you're right — but it's not your right to threaten other people. So in a very real sense, it's a lot like second-hand smoke and we have to frame it in that way. It's, I'm hopeful, a transient sort of a level of discomfort that we're experiencing, that we'll go back to sharing other people's microbiomes. But I think it's deeply important right now that people get their arms around it. And if I just may extrapolate a little bit more...you know, our parents and grandparents, they had to make significant changes for, let's say, four years at a time during World War II. Gas was rationed, food was rationed, lots of things happened. And in this case, we've been at this now for what, four or five months? And in all likelihood, it's going to be a lot longer. So I think, we'd all like to be done with it...that's the amygdala, maybe, governing our desire to get back to the beach, get back to social interaction, going back to the bar. That's the amygdala — I want it, I want it now, the rest of the world be damned.

Dr. David Perlmutter: But when the prefrontal cortex is brought online, then we're able to look at scientific data. And beyond that, we're able to understand that our actions are really perhaps the most important tool that we have for limiting this experience, and demonstrate our concern for other people beyond ourselves. So I think in a very real way, we're seeing this disconnection syndrome play out in various parts of the world. Where people are more connected than others, we see...in other words, doing the thing, wearing the mask, socially distancing, washing their hands versus areas of the world that say, the heck with that, we're just going to get on our lives and I'm not going to be bothered by this, where rates



are skyrocketing. So it's a really graphic example of acting with the adult in the room versus saying, I'm just going to do what I want to do now.

Dr. Drew Sinatra: Yeah, and I thought that the timing of your book...I know it came out before COVID-19, but as I was reading it, I said, everyone needs to be reading this book right now, because it applies more than ever during this rough time in our lives.

Dr. Steve Sinatra: Well, one of the other pearls in the book, you're telling people to avoid sugar. Because sugar produces a dementia, and Alzheimer's disease, and certainly cardiovascular disease. But again, sugar is one of the big factors in cutting down our immune response. It's a big factor in COVID-19, as well. I mean, the less sugar we use, the better we are. I mean, sugar has an impact on white blood cells, it can stifle their activity. So I think the avoidance of sugar — and on page 108, you've taught me something again. I didn't see this recent research, but basically, Austin and David, you talked about the 2019 Harvard study, which showed that if you took in two or more soft drinks a day, your incidence or your risk of heart disease and sudden death, or dying from heart disease, went up 31%.

Dr. Steve Sinatra: I mean, that's something, again, that's a pearl in a book, you can take that to the bank. So...and David, you and I always have agreed on diet. And in fact, in your book on page 126, when you were talking about the *Brain Wash* diet — my God, it's the perfect cardiovascular diet, as well.

Dr. David Perlmutter: So it shouldn't be surprising that the diet that we are recommending — lower in refined carbohydrates, dramatically lower in ultra-processed foods, actually higher in good fat — would be a good dietary recommendation as it relates to the heart, as it relates to the lungs, the joints, that skin, certainly the brain, the immune system. And even in terms of cancer prevention, as well, the immune system. So there can't be a heart-smart diet that increases your risk of dementia. Why would you go on any sort of diet that might be detrimental to another system in your body? So, you're right...and think about it, though, from the perspective of disconnection syndrome. Those who say, "I'm just going to drink this soda because that's what I want to do right now. And I know it has 36 grams of sugar, but I want it and I'm going to drink it."

Dr. David Perlmutter: Well, what happens? These choices play out as obesity, cardiovascular disease, diabetes type 2 — which ultimately turn out to be powerful risk factors for bad outcome as it relates to COVID-19. So in a very real sense, people are choosing their response to this infection based upon their lifestyle choices, which are a reflection of the wiring of their brain.



Dr. Austin Perlmutter: Let me jump onto that, if that's okay. So on this idea that our refined carbohydrate, high-sugar diet may be contributing to something like increased risk for complications of COVID. I think if we reframe this and think about this through the lens of the exposome, about our life exposures in which COVID is one, and how that might then affect our health. If you think about the exposome again, which is the sum total of all the exposures we have in our lives, and how that is influenced from basically prenatal period, all the way until adulthood. And you think about the idea that as a baby is born, whether it goes through the vaginal canal versus cesarean section, it's going to be colonized with microbes. So that's one of the first exposures, and we know that that will then shape later life outcomes.

Dr. Austin Perlmutter: I talked before about exposure to nature, to farms, and how that might lower a child's risk of developing a condition like asthma. And then you think about even things like early-life exposure to breast milk, and how the exposure to maternal secretory IGA might be helping that infant's gut to be more resilient to problems in the future, both metabolic issues and potentially pathogens like COVID. And so then you think about adult exposures and what are people being exposed to now? Well, we talked about these, and these are things like chronic stress, which we know is going to compromise the immune system. We talked about the foods that we eat — so refined carbohydrates, unhealthy fats, and just generally processed foods that are, again, linked to higher levels of chronic inflammation, and then also linked to worsened immune function.

Dr. Austin Perlmutter: And so what that means is when we put it all together, that when we are exposed to something like COVID, it's not all about the pathogenicity of the virus. It's about the substrate, it's about the host, and how well we are able to defend against this problem. You know, whether we just have a mild asymptomatic, even infection or have higher risk of developing complications is then a reflection of our prior life exposures. I think it's such an important point for people to understand, because it's directly related to what we talk about in the book as it pertains to decision-making. When a person thinks about a good or a bad choice, they think about that happening at the moment of decision. So if you are in a restaurant and there are two options on the menu, and one is a healthy salad and the other one is a pizza, let's say. We think about that person needing to make the healthy decision when they sit down, when they're ordering, that's the moment that it matters.

Dr. Austin Perlmutter: But the truth is that most of that decision is already been decided, because it's been encoded in that person's brain by the decisions they've made in the past. You can predict how people make decisions when you look at their brains. It sounds kind of novel, but it's really not at this stage. We know that your decision-making is a reflection of your brain function, and we know that your



brain function is a reflection of your metabolism. So we know that, for example, inflammation, or things like our insulin levels, are going to change the way that we make decisions. So the parallel that I'm trying to draw here is that as a society, we are fixated on the quick fix. We're trying our best to avoid the problem at the moment of the problem.

Dr. Austin Perlmutter: And as it relates to COVID, that's saying, "Oh, well, I need to just boost my immune system and that will be sufficient." When really, the solution to something like COVID, as far as mitigating the long-term harms, is the same thing that we're talking about for making good decisions. Which is investing in long-term, full body health — which is brain health, which is heart health, which is good decision-making, which is mental health, it's all the same. But it requires us to think through what it would look like to get upstream. And why that's so important, as well, is it takes away from this model of blame. It takes away from blaming people for making bad decisions at the point of decision, and instead says, well, what are the contributors to that decision in the first place?

Dr. Austin Perlmutter: And so, again, my sense is that the more we can understand the upstream implications of our choices, that then translate into downstream poor health outcomes — one of which is poor decisions, one of which is higher risk for complications of COVID, one of which is higher rate of mental health issues — then we can get rid of this blame idea, and start making solutions available to people that actually help them and that actually translate into societal change.

Dr. David Perlmutter: If I could just tie onto what Austin just said, and this idea of blaming our patients, blaming people for making the wrong decisions. And what we really did our best to bring out in *Brain Wash* is the idea that we need to stop that, that we as healthcare providers need to stop playing this blame game, because people's brains have been rewired without their consent. That media that we are exposed to, that many of the issues that I talked about earlier about our modern day world, are actively rewiring brains towards impulsive decision-making. And so it's not fair to point a finger and say, "You know, Mrs. Jones, I gave you that 2088 diet, and you didn't follow it. What's wrong with you? Something may be wrong with you." And Mrs. Jones goes home and looks at herself in the mirror and blames herself saying, "What's wrong with me? I went to the doctor, there must be something wrong. I can't make good decisions."

Dr. David Perlmutter: So I think that's actually very valuable. And so I think what Austin and I are trying to say here, and really, I think, a central theme of our book is that our decision-making is what needs to be focused on before we talk about giving people the right choices to make. So that, for example, Austin and I were invited to work with a group of physicians in terms of how they approach patients with various medical problems, such that they work first on the actual decision-



making apparatus. For example, a patient that you are seeing who has significant problems with weight and perhaps diabetic. At the first visit, you don't give them the diet and the exercise regimen — what you do explore is, let's say, their quality and quantity of sleep.

Dr. David Perlmutter: Now that might be a surprise to your viewers right now, and certainly to the patient — but that is a very important lever to pull if we're going to allow people to regain the ability to make good choices. Poor sleep is associated the very next day with increased activity of the amygdala, and increased impulsive decisions. And as those decisions relate, for example, to diet, they are profound, they are the wrong choices. So what we're trying to do is set the stage by rewiring the brain for better decision-making, and then layer on top what those good decisions are moving forward.

Dr. Drew Sinatra: Guys, this has just been an amazing conversation, we could probably continue this on forever. As we end here with our **Wellness Wisdom**, I'd love it if each one of you could share a “pearl” about the book you wrote, what was one thing about it that you felt...and David, you really just said it right there, pretty much, but I would like to know one pearl in particular that you want to get our listeners to take away from this.

Dr. David Perlmutter: Well, let me first say — maybe this is or isn't the pearl — but as a life experience, writing this book with our son, I would say, thus far, it's a once in a lifetime, maybe we'll write another book together — but to be mentored by your son is a great place to be, and it's a great experience. So, I'm so grateful for that.

Dr. David Perlmutter: I would say the pearl would be the understanding that we have the ability to rewire our brains for empathy, for compassion, for forward thinking, and for better decision-making. And that's, I think, the fundamental message from my perspective that we tried to portray.

Dr. Austin Perlmutter: Well, let me bookend my comments from the start of this and just say that it was such an honor to work on this book with my father, and independent of anything that the book did or didn't do, that has been one of the things I'll sure remember for the rest of my life as a major positive.

Dr. Austin Perlmutter: As it relates to the pearl from the book, there's kind of this painful, but quite obvious truth that came from this, which is when you understand that your decision-making is a reflection of your brain wiring, and then you understand how the modern world has been set up to manipulate that wiring for poor choices, things just make sense. You're not confused by these really high rates of chronic preventable diseases. You're not confused by the fact that people



tend to make impulsive decisions, even when you know that those are not the right decisions to make. You're not confused by the level of emotional reactivity that characterizes most people's relationships and is so damaging to those dynamics.

Dr. Austin Perlmutter: When you understand that the wiring of your brain is something that you can take back, that you can then modify yourself, and take that out of the hands of people who have no interest in you succeeding in life, then you begin to develop this feeling of re-empowerment that you then get to, I guess, change your destiny, that it doesn't have to be contingent upon the wishes of other people. And to, again, echo what my dad had just mentioned, just getting one night of good sleep is an incredible tool to enabling that person to start making those types of good decisions, to enabling that person to start wiring their brain for better choices.

Dr. Austin Perlmutter: So I think it's just, I would implore people to think this through, to just explore some of this science, to explore, if you're interested, our book. Because I think it's very straightforward when you start to appreciate that, if you look at decisions at the moment of action, and this whole blame/willpower thing, it's just not that helpful. But if you look at them as a reflection of your brain wiring, things will make sense, and you'll be able to start making changes that then translate into substantial benefits in your health, both physical and mental health, and just overall quality of life.

Dr. Steve Sinatra: To our listeners, this is a must-read book. I really enjoyed this book...I mean, I review books all the time, and this book is just loaded with vital information that will literally help to save your life.

Dr. David Perlmutter: Well, I would like to say thank you to the Doctors Sinatra for having us, and just for creating a platform to get out such important information for your viewers or listeners, it's certainly a job well done.

Dr. Drew Sinatra: Thanks so much, guys, for coming on the show...that was terrific.

Dr. Drew Sinatra: That's our show for today, folks. If you have a question or an idea for a show topic, please send us an email or share a post with us on Facebook. And remember, if you like what you heard today and you want to be an active member of the **Be HEALTHistic** community, subscribe to our podcast at **BeHealthisticPodcast.com**, or on Apple podcasts, or wherever you download your favorites. You can also find more great content and information from us and the Healthy Directions team at HealthyDirections.com.

Dr. Drew Sinatra: I'm Dr. Drew Sinatra.



Dr. Steve Sinatra: And I'm Dr. Steve Sinatra.

Dr. Drew Sinatra: And this is **Be HEALTHistic**.

Narrator: Thanks for listening to **Be HEALTHistic** with Drs. Drew and Steve Sinatra, powered by our friends at Healthy Directions. See you next time.