Introduction to Brain Health and Inflammation

Welcome to The Parkinson's Solutions Summit. I'm your host, Dr. Ken Sharlin. I have the great honor of interviewing Dr. Austin Perlmutter today. And we're going to talk about brain health and inflammation and really break it down for you guys.

This is really at the core of everything we talk about in the summit. So I will say that this is probably the mandatory interview that all must watch.

Well, Dr. Perlmutter, welcome to The Parkinson Solutions Summit. Ken, thank you so much for having me. I'm thrilled that we're having this conversation.

I'm honored that you said it's mandatory. But I will say I believe this is the most important stuff. So I'm not going to disagree with what you've already.

What you've already said. Well, I have to ask a question, and I'm sure you've been asked this a million times. People, I'm sure, recognize your name. And they recognize that you're the coauthor of a bestselling book.

But there is the, David Senior Perlmutter, and I just love to hear a little bit about how you got interested in medicine and sort of the path that you've taken to get to where you are today.

Yeah. you're right. I get asked this a bit, but you know what? It's a it's a really important story because I think that my experience is a microcosm, is a reflection of what so many people have, experience in their own lives.

And the fundamental thread to this entire story is the recognition and that the standard systems we have in place do not protect health. And we can talk about the specifics of why that's the case and how it applied in my life.

But the point being, we have a health care system that's great at disease management and slowing the rate of decline for people who are already sick. We do not have a health care system that protects health, that prevents disease.

And I did my training in internal medicine. So that means four years of med school, three years of a residency, and internal medicine primarily focused on chronic disease management.

I mean, that's really what internal medicine is. You'll see an internal medicine doctor, an internist, if you go to the clinic, if you go to the hospital, internal medicine doctors, some specialize into organ systems.

You could be a gastroenterologist, a cardiologist, you could be a pulmonologist. But at the end of the day, what internal medicine is all about is understanding chronic disease management, because the majority of the people we see in the hospital, in the clinic, are people suffering from the long term complex patients of poor lifestyle.

And we'll break that down here in just a minute. But the idea here is when we look at the United States in particular, this is a global problem.

Why Conventional Medicine Is Not Enough

But in the United States in particular, most people have at least one chronic disease. Most of those chronic diseases are preventable. And most of what happens in the clinic and what I was trained to do, is to slow the rate of decline nonstop.

Somebody from getting sicker, not reverse the condition, not prevent the condition, but basically to say you're

already heading down the hill, we can slow down how quickly you're heading towards death and disability.

and that, simply put, wasn't where I wanted to spend my time. And I want to put a very important point here in that my friends are doctors doing conventional medicine and they're amazing.

We absolutely need conventional medicine. We need cardiologist, gastroenterologist, internal medicine, doctors, hospitalists, primary care doctors, 100%.

And it's not enough. So my realization was that I wanted to work more upstream. I love education, and I love the idea of providing people with tools that have the highest chance of increasing their quality years of life.

and practically speaking, providing medications. It does provide quality, but it doesn't actually address the root causes of why people have gotten sick.

So that was the general context. And as I said, my version, a microcosm of what so many people have experienced, which is the understanding that our modern world, and especially in America, our modern society, is making us sick.

Becoming sick is the default option. And where I decided to get a little bit more nuanced was around the brain. And the reason for that, there is absolutely a genetic familial component.

My dad is a neurologist. His dad was a neurosurgeon. So there is a lot of interest in brain health. But the main reason why I think the brain is the most important key to unlocking health is because the majority of our diseases, disability, and even the fate of the planet is a reflection of our brain health.

And we can get into that. But anything you want to think about nuclear war, climate change, general war is a reflection of our brain health, not to mention mental health and cognition.

So why would we not get as far upstream as we can and work on the actual decision maker, the architecture, the machinery of what is driving our life experience?

So that's why I have had that convergence on preventive medicine and brain health, and why so much of what I do now is in trying to provide these evidence based solutions to help people prevent having to go to the doctor, where the best things that can be offered only slow the rate of decline.

Like, I couldn't agree with you more this you know, it's such an important topic. And for the folks who are already affected, maybe they have Parkinson's.

Maybe they're just interested in Parkinson's. They have another condition. I think, you know, you and I would both agree that the same principles that may help prevent a disease can still be applied if you have the disease and have the great potential to.

I'm going to borrow from your phrase, I know it's not ideal, but to slow the progression, to change the trajectory, to offer a quality of life and function, that if we just sort of sit back and let things happen, if you will, I, I liken it to going on a roller coaster at the amusement park, because what do you do?

You get on the ride and there's safety concerns. So they buckle you and they strap you in, and there's a big bar that comes down and all you can do is, you know, sit there and, you know, shape for joy and fear as the car goes up and down.

But in fact, what we want to tell people is that they have choices, they have opportunity is they have ways to engage in. And that ultimately leads to empowerment and change.

I totally agree, and I think that the brain is the best place to focus those efforts. And the reason I'd say that is because we know the brain is constantly changing and independent of any sort of disease process.

We have clear evidence for it because today, chances are hopefully, you know something you didn't know yesterday. How is that even possible? It's because your brain is structurally and functionally different today than it was yesterday.

That's the concept of neuroplasticity. It is an established tenet of neuroscience. There is no avoiding it, which means your brain is always changing, but it's not always changing for the better.

So the opportunity here is to direct that.

Brain Health, Neuroplasticity, and Agency

It's to get off that roller coaster as you described and say, I'm actually going to decide how I navigate the hills and valleys of the world and not have those be directed for me, because and I'll hit this point many times if you don't get off the ride, if you continue to do things as most people do, expect that your health is the most likely outcome because it is, you become a statistic and you become a normal statistic.

And that is not one that I'm willing to accept for myself. Now, just to address the point you brought up, it's also true that many people already have conditions that they can do a lot to help improve, and it may just be symptomatic improvement that is meaningful, but it requires the agency, right?

It requires saying, I'm going to do something and not just defer my health to other people who are going to tell me what to do, that that just doesn't work.

And again, it is an American theme. It is becoming a global theme where we just say, I'm going to live my life come what may until things go so poorly wrong, so terribly off that I have to go see a doctor and I have to get on a medication.

It isn't saying that if you reach that point, there's nothing to do. And it also isn't saying that we should wait until we reach that point, that the main theme here is taking over that agency, having some sense of control, that your decisions today, tomorrow, and for the rest of your life really can make a difference wherever you are on that continuum, and holding that feeling that strongly so that it's not just, you know, waiting for your doctor to tell you what to do, it's you actually having sense of control that your decisions today matter for your health.

Oh no doubt. You know, I saw just thinking of some of the patients I've seen in the last few days in clinic from the woman who saw me today, because I do a lot of work in headache as well.

And she had been through the gamut, some of the most expensive, some our newest, most cutting edge pharmacology treatments for migraine. And, you know, I said, and at some point, this is like the cliche that we often hear in functional medicine, you know, if you're stepping on a thumbtack, don't just take an ibuprofen, right?

I mean, we've got to step back and realize that at some point, sometimes what these drugs are doing is simply enabling a behavior or a habit or an exposure, allowing us to sort of continue doing what we've been doing all along.

Now, there are other factors or environmental factors that I think are also part of the equation. But to your point, you know, even pain ultimately is something that the brain learns.

And so we have to unlearn that. And we have to figure out why it how it is that that person got to that tipping point and then what's keeping them on the trajectory.

But the headlines are just over and over again. You know, I, you know, the shortages of the ozempic type drugs because, you know, everybody wants to be on them now to lose weight.

Well, we've been talking about an obesity epidemic for the last 30, 40 years, right. This is not new. But now we've got this treatment and the treatment has some positives.

No doubt about it. It has some negatives as well. But it's something that why were we waiting for the crisis of in manufacturing and supply chain, when we should have been addressing this all along.

rise. I heard in the rates of infertility. Well, that is truly a crisis. but we haven't changed genetically, right? I mean, what are the factors that are contributing to this rise in infertility?

And now we have things like Parkinson's and, well, a disease like Alzheimer's may be approximately six times more prevalent. More common, if you will, than Parkinson's.

The rate of rise, the number of new cases of Parkinson's far exceeds the rate of rise of Alzheimer's. So we really have, a problem. And while the drugs may be helpful, we can't blame the drug companies for, oh, they're expensive or.

Oh, you know, there isn't a drug to fix you, so we we just can't do anything. Yeah, yeah, you're absolutely right. And I definitely want to make sure that we narrow in on this, because it's it's easy to go broad.

And I think it's important to start broad. And that is to say all of us need to be more invested in our brain health. that is absolutely my belief. It is absolutely what I would say on any interview I was on, because brain health is all the things.

It's mental health, it's cognitive health, it's diseases like Parkinson's. It's violent and aggressive behavior. It's empathy for other people. It's empathy for the planet.

Brain health is so much bigger than just dementia or a specific disease, and we need to be paying attention to as it relates to the stories that are most relevant to us, to the health issues that are most relevant to us.

So in my case, I've had to, grandparents who have had Alzheimer's disease. So for me, it is so important to say, what can I do to prevent that from happening in other people's cases, if they have friends, family members, or if they're concerned about Parkinson's symptoms in their in themselves, that's their most important story that they're wanting to work on.

What's really important for all of us to know, though, is that many of the same tenets that have been used to help prevent brain conditions from occurring and to improve brain conditions once they've occurred are kind of universal across these different conditions.

So I'd love to talk about that as it relates to diet, because it turns out that one of the best dietary frameworks for preventing Parkinson's disease is the same dietary framework that can help prevent, Alzheimer's disease that can help prevent depression.

And that may have a benefit for people who already have all of these conditions.

Inflammation, Stress, and the Immune System

So if I may, just for one second, you know, if we think about as, as you said, Parkinson's disease, being something that we're very concerned about as far as prevalence, you know, I think there are some statistics around the disease that help us to understand that it's not a silo condition.

So generally and I'm sure you know what you've learned. It's we look for cardinal symptoms of parkinsonism. So we look for people who have, rigidity and motion slowed motion.

We look for these motor symptoms. Then we say, oh, there's there's something happening in the brain. And we know that by and large, we worry about dopamine neurons, but then we generalize that to other neurotransmitters.

We know that there are other issues within the brain. But something that's so important to understand is that there is a significant amount of overlap.

So around, I think it's 20% of people who are diagnosed with Parkinson's will actually have mild cognitive impairment at the time that they're diagnosed.

And we know that about 30% of people who have Parkinson's disease will also show in their brains. If you were to look at a biopsy, many of the same changes we see in Alzheimer's disease, we know that people with Parkinson's disease are at a dramatically higher rate of dementia in general. We also know that they're at a dramatically higher rate of developing depression.

we also know that the conditions that seem to predispose to other brain related diseases. And here I'm thinking about hypoglycemia, metabolic disturbances that that both predicts higher rate of Parkinson's disease.

And people who have Parkinson's disease are at higher rates of these types of conditions. So there is a whole lot of overlap as it relates to what's happening within the brain.

And we're still trying to learn, you know, exactly what is it that's driving Parkinson's. So certain things tend to increase the chances that a person develops Parkinson's disease.

But even though there are, I think, something like 100 different genes that have been identified, it doesn't seem like the majority of our risk is genetic.

It seems like it's largely environmental, which speaks to the fact that we actually have a ton of agency over the signals that we put into our bodies.

And in addition to that, if we think which I think is the standard belief, and you correct me if I'm wrong, that the majority of our risk for a condition like Parkinson's is environmental and not genetic, which helps to explain why rates of Parkinson's have been going up so much, you know, even more than the population has been expanding.

Then we'd say, well, the majority of the risk is in what we do and what we consume in our environments. And that would then translate into, well, maybe if there's certain environmental signals that are increasing my symptoms, increasing my probability of Parkinson's, then even once we have Parkinson's disease, it would make sense to start decreasing some of those signals.

And I'd say there's really two domains that, that I'm focused on, one more than the other. So one of them is metabolic function. And I think we can talk about that as it relates to Parkinson's.

study that just came out. I'm sure you're aware of New England Journal of Medicine showing how people using one of these newer medications, a GLP one drug, may have improvement in Parkinson's relative to controls.

Really interesting, because what we're saying is a metabolic medication seems to have a significant impact on the, motor symptoms of a person with Parkinson's disease.

So something is happening with metabolism in the brain, in Parkinson's disease. And the other domain that I spend a lot more of my time focus on is the immune system.

And so there we would say, well, what is immunity? And the general concept of immunity is it's a defense system that helps you to fight off microbes in the environment.

So if you get a cut and you get a bacterial infection, your immune system kills off the bug. Or if you get a virus, a cold, your immune system allows you to fight off the virus.

But the reality of it is that immunity is a much bigger conversation. And as it relates specifically to the brain, one of the major theories of what is driving some of Parkinson's is an elevation in what we call neuroinflammation.

Inflammation within the brain. Coming back to what I said before and what I think is so important, you know, you may not have Parkinson's disease, you may not know anybody with Parkinson's disease.

Unlikely, based on the fact that you're here listening today. But you probably know people or are concerned about depression or PTSD or general dementia or general cognition or focus.

And all of these things now are known to be related to neuroinflammation. So the point I'm trying to make here is these are conversations that affect everyone.

And the really amazing part of this is the strategies that all of us can use today to act on those systems are also some of the best studied strategies to prevent and potentially help to manage symptoms in conditions like Parkinson's disease.

So it's a really great time to be a doctor and a great time to be an educator, because we're not just saying, well, you should just eat a healthy diet and maybe something good will happen.

We now know that there is a statistically significant benefit when people eat certain foods. When people engage in exercise, in part through these pathways, neuroinflammation and neuro metabolism.

And we can talk about specific foods. But this is a great thing because it's not just eat more plants and call it a day. It's certain patterns of diet.

Certain amounts of exercise have been shown time and time again to be powerful interventions in both symptoms and in prevention. So this is it's a great time to start paying attention to this information.

Oh. Oh absolutely. So we could almost think of this like the hub of a wheel. And at the center of the hub is that inflammatory response in the brain. In the body.

And to your point, you know, we have this immune system. And yes, it's there to defend us against pathological microbes, but there's a whole host of other roles in the body, like going around and getting rid of cells that are not behaving normally.

That could become a cancer, for example, that will turn on the inflammatory response. And in fact, that has been really what has revolutionized cancer care.

In the last several years, we've focused more on ramping up that immune response as opposed to, you know, giving drugs that, say, damage the DNA of the cancer cells to prevent them from replicating.

Maybe, that inflammatory response looks at how proteins are produced by cells, because a lot another a framework to understand how these chronic diseases come about is to really understand the synthesis, the folding, the ultimate degradation of key proteins, alpha synuclein when it comes to Parkinson's disease.

And it may be this misfolding, this aggregation, and even ultimately the propagation of this alpha in the protein from one cell to another when the immune system is not able to address the problem that's going on for whatever reason, or it's it's turned on, it's a four alarm fire, but it doesn't ultimately get turned off.

And what are the consequence of this persistent inflammatory state? So the hub of the wheel folks is inflammation. And then what Doctor Perlmutter is saying there are inputs.

There are a variety of inputs. And we're starting to maybe talk about diet as being key. I think it is. I think it's one of the most important ways to intervene on this system.

And I love what you're saying. As far as inflammation, the immune system is so much more than what we've been told. So to give a little bit more context to the immune system and inflammation within the brain, because, as you said, so the immune system tasked with finding and destroying, cancer cells before they turn into large scale cancers, but in the brain, the immune system does so much stuff that we kind of lose almost this idea of it as a defense system.

And I think that where we're going as it relates to immunology and specifically neuro immunology, is signaling pathways because it is not the case that an immune signal only acts in defense and really only acts in immunity.

The same signals that lead to immune effects can also lead to metabolic effects, neuro plastic effects. So let's talk about what's actually in the brain.

This is the stuff that if you let it sit it for a second in sync in, you will appreciate the gravity of what we're saying. So in a person's brain, depending on who you are, let's just say typical person, something like 80 to 100 billion neurons.

That's great. But you want to have lots of neurons. that's not actually the whole story.

Diet for Brain Health and Parkinson's Prevention

And as it relates to the immune system, probably not even the important part of the story, because what you need to know is that about the same number of cells in your brain are called glial cells.

Now, originally, these glial cells were actually described by the Greek name for glue because they were thought to just hold things together. But it turns out they do so much more.

So you have several different types of glial cells. You have, astrocytes that are involved in the blood brain barrier. Help with cell, the cell communication and metabolic flux.

You have oligodendrocytes that help to produce the myelin coat on neurons. And most important to our story, about 15% of the cells in your brain. So we're talking 20 billion or so cells are what are called micro glial cells.

And micro glial cells are straight up immune cells that live in the brain. And there's some amazing imaging that has been done showing that micro cells, in essence, create a net that covers the entire expanse of your brain.

And what they do is they actively listen for information, and in response to the information they receive, they physically and functionally change. And when they do that, it changes everything about the way that the brain works.

And so let me give you some examples. So we've often talked about memory as kind of one of the key things that people care about. All of us care about memory.

But the question of how does memory get formed is an interesting question, right? We say, well, you learn something, something happens, and then you have a memory.

We know sleep is involved. Not exactly sure. It turns out that it's the immune system, specifically its tagging of neurons, synapses and then micro glial cells going in and eating up that tagging through a system called complement that seems to be key to memory.

We also know that the immune system within the brain programs neuroplasticity. And now neuroplasticity is a key term. You'll probably hear other speakers discuss this.

It is the idea that the brain is constantly being rewired every moment, every day. It is changing the strength and number of the connections between our neurons.

And this relates to basically every brain state under the sun. Damages and neuroplasticity are one of the key mechanisms believed to underlie dementia, poor mental health.

So it's really important. And the brain's immune system is heavily involved in neuro plasticity. Now where it gets really interesting is is as follows.

Immune signals within the brain at a low level actually can increase neuroplasticity and are necessary for good brain function. So for people who are a little bit nerding out on these types of things, the brain signals I'm referring to are called cytokines.

These are immune signals that range the entire spectrum of kind of what they do within the immune system. But the prototypical or this typical inflammatory cytokines, they have names like interleukin one beta, interleukin six, tumor necrosis factor alpha.

What's so interesting about them is that at low levels, they can actually support a healthy brain. Now in the context of high levels of brain inflammation, chronic sustained inflammation, or acute high level inflammation, what happens is these signals overwhelm the brain circuitry.

And they actually tell it, you know, at a low level, this is okay. At a high level, you need to change the way you operate. And this from an evolutionary perspective makes total sense.

And I think this is a really key thing for people to know. We think, oh, inflammation is bad. No, inflammation is good. Inflammation is essential. And actually I would reframe this entire conversation because we like to blame the immune system.

The immune system is doing what it is supposed to do. Yes, because inflammation is, at its core, the body's response and the brain's response to a danger signal.

It is telling your brain in your body that we are in a state of alarm. And because of that, we need all of our defenses up at the expense of long term health.

Fine. It's like if you were in a castle and you knew that the long term plan would be to plant a ton of crops, right, all the way outside the castle, and, you know, to engage with trade with all of these other places and castles.

But if you're under siege, you're not worried about the health of those crops for next season. You're trying to protect the gate. And that's what happens in the context of inflammation.

Your brain has to refocus. I think of it as akin to acute versus chronic stress and also just stress in general. So when we experience stress, we get tunnel vision.

People may have experienced this before. You're your visual fields shrink and you are focusing in on one thing. You're not worried about what you're going to have for dinner.

You're not worried about how your stock portfolio is doing, unless that's the cause of your stress. But you're basically narrowed in and focused on whatever is in front of you.

So let's say it's a tiger that's charging you, right? Or let's say you're in a dark alley and you hear a noise. You're only focused on that. Yeah, that makes total sense.

Your brain is saying, this is the only thing that matters right now. In the case of inflammation, that's kind of the same thing that's going on. You're telling your brain to rev up inflammation so that it can fight off what it perceives as a danger signal, and it puts everything else on standby.

Unfortunately, when it does that, it increases your risk for depression, increases your risk for dementia, may increase your risk for Parkinson's disease.

So our goal in this entire process is to say, how do we remove that danger signal? Tell our brain, tell our immune system, hey, things are okay. You can focus on other issues right?

And that then gets us to the question of well what is driving inflammation. So it's a number of variables. It is stress. It is poor sleep. It is poor gut health.

But we should really get into the diet because I think that's the thing that most people care about. And it's also an area that I would say almost everyone can make dramatic improvements with just a couple of small changes.

Oh yes, I sometimes I give a lot of presentations and I have a slide where I use the word mal adaption, but I break it apart to mal and then adaption and say, look, these are normal responses of the human body.

And of course this goes back to Walter Cannon and the Harvard, physiologist that describe the term really gave meaning to the term homeostasis. These small perturbations that occur all the time, all the time, and they're normal and healthy.

And in certain types of stressors, if you will, can actually make us stronger, faster, smarter, higher, able to speak a new language, things like that.

But if there's a real disruption, at the cellular or subcellular level, we can't return to that previous balance. Then it's sort of going to go like this.

And then if it goes down further down eventually, I'm an old sci fi fan. So I watched the original Star Trek with, you know, James T Kirk. Yes, I'm that old.

But what happens when the, you know, the enterprise or the Starship is is under attack? Will has layers of defense, right? The phasers and the photon torpedoes and all that stuff. But.

And the shield, the defense shield of the ship. But if all else fails, the crew ideally gets into these little pods, goes out away from the ship. And what do they do as a destroy the ship?

It's better than the enemy getting to the shed. So what happens in the human body, it seems, is that we go through these perturbations. And ultimately, if this cell can't reach that new viable level of homeostasis and balance and harmony, really, then it will actually turn on programs that initiate a cell death response.

And that can be a real domino effect that makes disease is like Parkinson's or Alzheimer's or ALS. It's hard to turn off. But but there are inroads. There are opportunities.

That's it. Yeah. I mean, the other thing, just to add on to that a little bit more, it can lead to destruction of cells. And it may be even more concerning when it doesn't.

So this is the kind of senescence idea of the immune system. And one of the bigger breakthroughs has been this idea that, in the cell cycle, if a cell is damaged enough, a certain program can be turned on that tells it stop replicating.

But it should basically tell the cell, stop participating. And instead what happens is the cell starts generating these inflammatory again, cytokines.

So it's it's been called like a zombie cell. So there's a lot of really interesting work being done there. It's something called senescence or immuno senescence or inflammation.

But the bottom line being that it can actually be a result of inflammation and a driver of inflammation, which is these zombie cells that exist within our tissues and kind of they're not contributing in a meaningful way to anything positive, but they're just sending out these perpetual danger signals, even though they're no longer replicating.

So I love the, Star Trek references. I'll probably try to bring in more photon torpedoes into my next conversation. but maybe we should go to, you know, the, the actual implementation of this because I think the, the dietary stuff is so important.

And, you know, I'm sure you have lots of great resources for people who want to know what's the general diet that's recommended. I do a lot of education around the Mediterranean or the mind pattern diet, and I think it's a good

starting point for people.

If they want to look that up and learn well, what are in these patterns of diet that have been associated with lower risk for Alzheimer's, lower risk for depression, lower risk for, Parkinson's disease?

But the statement that I'd like to make is specific to how do you help to prevent brain inflammation? How do you help to support your body's health is to eat the things that people have messed with the least.

And when you think about what that represents from kind of a breakdown perspective, you can go through and you can talk about individual foods. But the bottom line being, if it is something your grandparents would have recognized as a food, it is probably okay.

If it's something that has an ingredient list, it's probably not something that you want to eat. And there's a lot of debate right now around, okay, well, how much protein should I eat? Animal.

Should I not eat animals? Should I eat pasta? If so, should it be made of, gluten free? And there's a lot of there's a lot of important nuance to that, I think.

But I start with the idea of saying eat the things that people have messed with the least. And when you really get to that, it it gives you insight into, well, maybe I shouldn't be eating as much GMO food, maybe I shouldn't be eating as much feedlot res cattle.

maybe I shouldn't be eating as many farmed salmon as opposed to wild salmon, because there are differences in the outcomes and the actual chemical makeup of those foods, based on the fact that humans have messed with them to increase kind of profitable any of those crops, of those animals.

as it relates to kind of some of the specifics there, I do want to just make sure I give some of my, my general tennants. And so when we're looking at inflammation and specifically the potential correlation with negative brain outcomes, I think the, the most important and best studied intervention is actually to cut out one food, and that food is sugar sweetened beverages.

And the reason I say this is there's still so much debate as to what is a healthy food and what is not a healthy food. But part of this conversation has to be about what is the value proposition that the food brings.

So there are some foods that contain some great nutrients and contain some things that maybe are not so good for us. Right. And we can talk about oxalates and kale and potentially lectins and beans, but there is nothing of value in a sugar sweetened beverage.

There is nothing in that that provides your body with any value. Nobody really needs to be drinking pure sugar with the potential exception of athletes in very specific circumstances.

For the average person, sugar sweetened beverages and I include their coffee, energy drinks, any sort of kind of fruit juice that you can buy in the store.

We can go over some brands if you like, but these are, in essence, a concentrated slug of sugar into your GI tract that is rapidly absorbed can damage the microbiome.

There's a lot that has been discussed as it relates to the gut brain connection and potentially even alpha synuclein progressing from the gut to the brain in Parkinson's disease.

So the sugar sweetened beverages correlated with higher levels of inflammation in the bloodstream, correlated with higher levels of brain specific conditions.

And again, importantly, there is no need for it, right? I think there's a really strong argument that you can make saying not everybody can afford organic all the time.

Not everybody is going to get perpetual access to a wild salmon like sometimes, especially when you're traveling, you need to make concessions, but there is never a need for a sugar sweetened beverage.

So that's, I think, an important first place to start. Everything else beyond that. Yes, there's nuance to it. I'm a big fan of olive oil. We can talk about what that looks like.

There are certain fats that we should try to avoid. There are certain fibers and carbs that may be better than others. When it comes to protein, there are certain sources that might be better than others.

But the core tenet of really, I think the Mediterranean diet and any of these kind of brain healthy diets eat minimally processed foods that your grandparents would have recognized as foods that humans have messed with very little.

And my bias here, I'd be curious. Your take is, by and large, we should be eating mostly plants, and if we're going to be eating animal products, which I'm not opposed to at all, we should really be thinking even more so about the quality, because things compound.

Meaning it is one thing to grow a plant and the quality of that plant is important. But if you're going to eat an animal that has been for years consuming poor quality plant products, you're getting the compounding bioaccumulation of poor nutrition.

Small Habits and Practical Lifestyle Changes

So I'm not advocating for a vegan diet, but I am saying I think we have to be extra careful as it relates to the animal proteins that we consume. Absolutely. I couldn't agree more.

I sometimes use the term plant based, but I don't necessarily mean to be purely vegetarian. Plant predominant. No. Michael Pollan eat mostly plants, right.

So important edges of the supermarket, that sort of approach, you know, eat real food. These tenants are repeated by many of us. and that's because there's a tremendous amount of wisdom there.

And these are changes that folks can make if they're watching the summit today. They can do this today. You do not need a doctor to work on the food that you eat, because ultimately, I think what Doctor Perlmutter is saying here is you are what you eat.

You really are. Yeah. And so is your brain. I think that's the important thing people don't understand. There's this this concept, this idea that you have the brain and then you have the mind, and these things exist in some sort of space outside the body.

Right. And the reality of it is that our thoughts, our feelings and our actions are a direct manifestation of what is happening in our brains. And I guess now, to expand it, maybe what's happening in our gut a little bit too, which is super interesting.

We now understand that gut microbes influence brain function, but the point being, you've got in your brain right now, 2 to 3 pounds of mostly fat. When you take out the water weight that is actual atoms, molecules, tissue has to come from somewhere.

It's not coming from photosynthesis. So you've got to eat those nutrients. And if you're building a brain, wouldn't you want to build a brain that is built with higher quality nutrients?

So that's why I would say for every meal, every time that you eat a food, you're actually voting for a better brain or a worse brain. Do you want your brain built out of junk, or do you want it built out of amazing, high quality food?

I'm not saying that every single meal has to be perfect. That's not helpful for anybody. But I am saying when we look at the course of our lifespan and this is absolutely substantiated by the research, but when we look at the

course of our lifespan, the day to day small decisions that we make are the most important predictors of our health outcomes.

For most people. There are exceptions to this rule, but for the average person listening, the most important drivers of your health outcomes are the small things you do each day.

And that's why I think I mean, I made this mistake so many times. I tell a patient, you've got to start exercising, you got to start eating healthier.

You've got to cut back on the smoking. All of those things are true, but maybe not helpful. One is helpful is to pick one thing and to leverage habit neuroscience.

That's kind of another topic, but not really, because what we know is that most people will start a diet. Most people will join a gym and they won't follow through.

They will start a gym membership in January, and by early February they're done. They're back to sitting on the couch eating potato chips. They will start a diet.

So they can look good in a bathing suit, and they will give up on it. And I think this is just all a recipe for disaster, because when we fail at improving our health through lifestyle, we get stressed, we get disappointed, we get disillusioned.

And when those things happen, what do we do? We do the exact things that are counter to our objective. We eat more unhealthy food. We're more lethargic and sedentary, so that works great.

If you're a gym, right? And you're just perpetually selling memberships and nobody shows up. What we need is to create a system where people are able to build sustainable, small changes into their day so that they are now taking agency and control.

And you mentioned this before, you don't need to see a doctor for this. And I think this is this is so important. If you're seeing a doctor for your health issues, you've lost your best chance of being healthy, right?

But by the time things have gone wrong enough that you need medical help, you lost your best chance at being healthy. Not saying here that if you're seeing a doctor, you can't still make amazing changes, but maybe you're seeing a doctor for one thing and not something else.

That something else is where you can make incredible inroads towards preventing disease, towards preventing morbidity and mortality. So the point being, find something small and that can be cutting out soft drinks that could be eating a little bit more plant based food.

And I'm not talking about the Impossible Burger. I'm not talking about an ultra processed snack. I'm talking about literally more fruits and vegetables.

That could be moving your body a little bit more like a five minute, ten minute walk. I don't want people to sign up to do a 5K every three days. That's not the point.

It could be improving your sleep quality tonight.

Where to Learn More and Closing Remarks

It doesn't have to be all these things and it should not be all these things. We have plenty of science and we have plenty of great books. Tiny habits, power of habit.

These are testament to the fact that humans do the things that are easy and replicable. So find something that you're passionate about that you know you can do continuously and make that your goal.

Make it just a small thing. And that's how the habits build and that's how you get compounding interest. Wow. That's incredible. Well, Dr. Perlmutter, the interview has gone quickly and we touched on a lot of different things.

But it's such an important message that you're sharing. I know that you were Managing Director at Big Bold Health. Huge do some research, etc. people want to find out more about what you're doing and connect with you.

How can they do that? Yeah. easiest way is to sign up for my newsletter. You can find it on my website, austinperlmutter.com. If you like social media, which I don't know that I do, but I'm on it.

Dr. Austin Perlmutter. And, yeah, I've got a lot of interesting projects on the horizon. You know, we're trying to do some research on the epigenetics of psychedelics.

We're looking at how polyphenols and diet influence immune pathways, doing some work on neuroinflammation and trying to make that information more democratized and available.

But if you're interested in practical strategies to improve your brain health, that's that's why I would check out my stuff. And again, website austinperlmutter.com.

You can find all that information there. Oh that is excellent. I really look forward to hearing more about those polyphenols. That's a subject is really central to Parkinson's.

And folks check this out because by the way these compounds, they don't come from a cow. They come from a plant. Right. Not that we're against eating a good grass fed, you know, beef burger or whatever, but, these compounds have been found to protect the brains and people of Parkinson's, so you definitely need to be eating more plants.

But I'm sure you're going to enlighten us with your research soon. I look forward to your findings. And, Dr. Perlmutter, I really appreciate you spending the 45 or so minutes, together with us today to enlighten us on the importance of all of this.

Absolutely. And I just say, for everybody who's out there watching and listening, thank you for caring enough to be here. It's amazing that so many of you are here and investing in your brain health.