Introduction to the Gut-Brain Episode

If you had asked me probably 25 years ago what I thought about leaky gut, I would have said, that's pseudoscience. But thanks to Alessio Fasano, who's now at Harvard, we can measure leaky gut.

Intestinal permeability is real. 100% of my patients with autoimmune disease have leaky gut. This is Doctor Talks, real talk from real doctors on the issues that matter to you most.

Welcome! In this episode, I get to talk to not just one, but two brilliant minds. Dr. Stephen Gundry is here to join my good friend Robert Love and I for a conversation that dives deep into the gut-brain connection.

Dr. Gundry is a world-renowned, best-selling author, cardiothoracic surgeon, and many, many other things, but he recently published the book, The Gut-Brain Paradox.

and he's gonna take us on a journey where we explore how our gut microbiome influences everything from brain health to inflammation and even how we age.

Robert Love brings his signature curiosity and clarity to our conversation, making it a rich and practical discussion. I hope that you are curious about how you can improve your cognitive health from the inside out.

This is a must-listen episode. Let's dive in. Dr. Gundry, what role do gut bacteria play in things like depression, anxiety, and neurodegenerative diseases?

Well, I'm awfully depressed to tell you that unfortunately they have far more than you and I and even Dale Bredesen would have thought a few years ago.

And in fact, I just had Dale on my podcast last week and we were reminiscing about the times when none of us knew much about the microbiome and how my goodness, how could a little single cell organism have control over this advanced creature or like this magnificent all of us?

Microbiome, Mood, and Disease

And yet, as I talked about in my last book, Gut Check, and now in The Gut Brain Paradox, with every literally passing week, a new study comes out that shows just how much influence microbiome, the oral microbiome, the gut microbiome has on our brain function and our mood, our depression or neurodegeneration, as Heather well knows.

And it's just, it's mind boggling that these little guys have so much input. I guess we should have realized, Hippocrates said 2,500 years ago that all disease begins in the gut.

I spent 25 years now trying to figure out how he knew that because it was clear he knew it, but anyhow. So, yes. How would we know if we have optimal gut bacteria or if we need to do something about it?

Well, I think there's a lot of ways to figure out that we don't have optimal gut bacteria. And I was in medical school back in the dark ages in the mid-1970s.

And looking back, it's remarkable that most of The bad things that happened to destroy a perfectly wonderful tropical rainforest of critters in our gut literally all got introduced in the mid 1970s.

And I was there. For instance, broad spectrum antibiotics were introduced in the mid 1970s. And I can remember how miraculous it was. that we didn't have to culture, try to grow things, and two-thirds of the time they didn't grow.

Then we had to test antibiotics against them in a petri dish to see which one would work. Now all of a sudden, we had this incredible AK-47 set on automatic, and we'd just mow them all down.

It was just remarkable. Of course, none of us knew, actually, I got to tell you the story. I've told it on other podcasts, but it's worth telling. During my medical school career, one broad spectrum antibiotics came out.

a new disease, a huge inflammation of the colon came about. It was called pseudomembritis intercollitis because we actually didn't know what was causing it.

And we now know it's C. difficile. And our head of surgery said, you know, I have a feeling that We've done this to ourselves that these people, we've given them antibiotics to treat their pneumonia or whatever.

And now they end up with this. I think we've killed other bacteria. And so he would send medical students to take a crap once a week in what he called the honey pot, literally.

And we take it to his lab and we put it in a wearing blender. I kid you not. and we'd put it in an enema bag and we'd give these people, this is in the mid-70s, fecal transplants.

We called them fecal enemas. And then surgeons, general surgeons, at that time were actually the original gastroenterologists. We did all the scoping and everything.

And so we'd look up their rear ends in two days. Instead of this just awful quagmire of pus, it was pristine and beautiful. And we go, whoa, he was right.

He was mocked. He couldn't get anybody to let him give a talk at a scientific meeting because they said, oh, come on, that's just hogwash. And now, of course, we realized we'd killed them all off.

And C. difficile said, thanks, we'll take over here.

How Modern Medicine Disrupted Gut Health

Same thing, glyphosate. was patented by Monsanto in the 1970s as an antibiotic, not as a weed killer. Oh, yeah. Wow. Yeah. And it was incredibly, actually, effective antibiotic.

Little did anybody know that it was so effective against other things. But they convinced the FDA, and it was perfectly safe for human use, because it targeted the shikimate pathway in plants, growth pathway in plants.

But they didn't bother to tell anybody, but they knew. that targeted the bacterial chikamate pathway. And that's how they had patented it as an antibiotic.

So lo and behold, we've got broad spectrum antibiotics. We've got glyphosate now in everything. And as a general surgeon, we used to operate on ulcers for, we do vagotomies.

We'll maybe get to that subject in a second. But when proton pump inhibitors were introduced, when I was in medical school, We went, oh, this is miraculous.

We now have a way. We don't have to operate on anybody. And little did we know that it completely changed the gut flora by changing the acid in the gut.

Finally, in the 1970s, NSAIDs came out, non-steroidal anti-inflammatories, which appeared to be miraculous because aspirin, which is an NSAID, caused gastric ulcers.

leave ibuprofen, Advil, didn't appear to cause gastric ulcers, but the research was so scary that was only allowed as a prescription drug. And you could only prescribe it for two weeks because it was.

It's aspirin. It's aspirin? No, this is ibuprofen. Ibuprofen. And naprosyl. Prescription only two weeks. Only two weeks. Why? Because, and I've seen all the literature, it didn't cause ulcers in the stomach, but it caused ulcers in the small intestine.

It caused leaky bowel, leaky gut. And they knew it, but it took a while to kick in like two weeks. Now, of course, it's the most widely used over-the-counter pain medicine there is.

We have children's Advil. And so we have children's adderall right now. Goodness. So many drugs. Good God. You said something really fascinating that really hearkens back to history.

So this person discovered that fecal transplants really, really good and really effective in the seventies. That's cutting edge now. Now people are still very reluctant.

This hearkens back to Semmelweis who was the one to discover bacteria. And so, you know, the story is women wouldn't go into the hospital because they would die giving birth.

And they didn't know why the doctors didn't know why. Turns out the doctors were visiting the morgue and handling corpses and then not washing their hands and then going and delivering babies.

And then baby and or mother and baby would die or get sick. And so women chose home births, and he's the one who figured out if you wash your hands, it actually reduces it.

And he was mocked, humiliated. They tried to take away his funding, tried to take away his job, and he ended up in an insane asylum. And he was right.

He was right well ahead of his time. And the establishment, the established doctors refused to wash their hands. And Joseph Lister got credit for it. They listened to him.

But Semmelweis was the one who figured it out. Sounds like very similar to this person. They figured something out that we're still not utilizing today.

This is fascinating. Yeah, actually the dedication in my new book is to the samovites. Bacteria were not known. They weren't discovered until about 15 years after his death.

And what tipped him off was one of his professors, you're right, they did autopsies and then they went to labor and delivery room. One of his professors nicked his finger while doing an autopsy.

And he died of sepsis because there was no antibiotics. And he said, huh, that's funny. And wow, this guy just got sick by doing this. And we're walking into the labor and delivery room.

And there was a midwife hospital in Vienna that didn't have this problem because, of course, the midwives weren't doing autopsies. And so when he got the job, he says, first thing we're going to do is we're not going from the morgue there.

We're going to wash our hands. And you're right. He was repudiated. He was actually exiled to Budapest and then institutionalized. And the worst part is he was beaten to death in the mental institution.

And 15 years later, bacteria were discovered and he was ailed as the father of antisepsis. Reminds me a little bit of what mainstream media is doing to Robert Kennedy.

They'll say he's crazy for saying fluoride is bad. And then the same day, the same day the New York Times will run an article saying fluoride in the water is associated with impaired IQ in children.

It's fascinating that somehow health has been politicized. Well, Dr. Bredesen as well. I think, you know, in our work, Dr. Bredesen talking about how we could delay, prevent, and even reverse Alzheimer's and dementia, that he's

been saying that for over 10 years.

And I think finally, we're finally getting traction. But He's another one where really, I think, noticing common sense, right? Seeing common sense but uncommon practice, talking about it, writing about it, and giving people hope that there's a way to feel empowered, to do something about these chronic conditions as we age.

Dr. Gundry, I really want you to connect the dots for our listeners between the gut and the brain. I mean, that is your new book, The Gut-Brain Paradox.

I've got my copyright here. Oh, there it is. And tell us, what is it about the microbiome? How is it affecting our brain, particularly as we age? We can go really deep as you want.

Leaky Gut, Testing, and Dysbiosis

We could pull a Dave Asprey and talk about how consciousness resides in each of these cells and the world's experiences in each of these cells. Mitochondria are simply ancient bacteria.

If you look at it that way, bacteria have been around for three billion years. And they're clearly, along with fungi, the most successful life form that exists.

And we've only been around for a hundred thousand years max in current form. And many people, I guess, including myself, now believe that we're basically a vehicle to carry around the microbiome and we're under their direction.

And it sounds really woo woo, but as I wrote about in the last book, all you got to look at is toxoplasmosis. And look at how a single cell organism can literally take over the thought process of an advanced creature, whether it's a mouse, whether it's a chimp, whether it's a wolf in Yellowstone Park, or whether it's a human being, and direct its behavior.

And I think that's still Robert Sapolsky from Stanford, some of his best work and he's done a lot of great work, but showing how this single cell organism can direct human behavior.

So getting back to all of that, I think when things were functioning well, and again, I'm just using pre-1970, There was this really coordinated effort between the other species that live with us, this symbiotic organism, to, I mean, when I wrote the plant paradox, people didn't hear me when I said, look, we used to have this amazing microbiome and we were at war with plants.

Get over it. Plants don't like us and they don't want us to eat them or their babies. But we had an amazing defense mechanism. We had this microbiome that says, Hey, you're eating gluten.

Great. I love gluten. Bring it to me. Oh, you're eating lectins. Great. I'm happy to eat lectins. There was a new paper out last week. that if you have the right microbiome phytates you know evil another plant defense compound in grains phytates can be converted by the microbiome into short chain fatty acid and boy does my brain want short chain fatty acids like butyrate so You go, wow, we used to have this incredibly good cooperating system.

And the microbiome would tell the immune system that, hey, we got most things covered. Anything that you swallow, we got your back. You guys relax, go have a cigarette and a donut, and we'll protect the wall of the gut.

And you guys just relax now, fast forward. We don't have a microbiome that's capable of protecting us and producing short-chain fatty acids. So now we have a leaky gut.

And I remember if you had asked me probably 25 years ago what I thought about leaky gut, I would have said, that's pseudoscience. But thanks to Alessio Fasano, who's now at Harvard, we can measure leaky gut.

Intestinal permeability is real. 100% of my patients with autoimmune disease have leaky gut. I'm sorry, can you say

that again? Because I rarely hear a doctor say 100%. 100%. I have not met a person.

Every single person in your office who has autoimmune disease has leaky gut. And 80% of my practice is autoimmune. How do you measure leaky gut in those patients?

Well, I use anti-zonulin IgG and anti-actin IgG, as well as anti-LPS IgG. Those are my favorites in their blood. Are these something listeners can take to their medical doctor and say, would you please screen these in my next blood test?

Yeah. And then they'll roll their eyes and say, I'm not interested in that. And that's just silliness. And I don't want to waste your money. And so do you recommend that they find a functional medicine provider or naturopathic doctor, somebody who's interested in that and willing to do some of these tests?

Do you also test the gut microbiome? Do you ever do such a test to look for what's actually living in there? Yeah, initially I didn't because, quite frankly, I didn't think they were very good.

And they are, in a way, a snapshot, a Polaroid picture of that last 24 hours. But now, again, the human microbiome project wasn't completed until 2017. And because of that, and because we can now look at the DNA and RNA of individual species, We now can really get an amazing picture of who's in there.

And now we can look at the products of that production. You now, you got a problem. You have leaky gut, but you have gut dysbiosis. And I can fix somebody's leaky gut.

It'll take us about nine months to a year. But getting the gut dysbiosis fixed is a real challenge. And I think the son of her husband and wife team at Stanford, the microbiologists, I always give a shout out to them.

They're the doomsayers of the human microbiome. They are convinced, and they're right, that most of us have a desert wasteland for a microbiome, and they happen to think it's hopeless that we'll ever get back to a tropical rainforest.

That's where I disagree with them because I can see the tropical rainforest starting to grow, but it takes a long time. What do you recommend someone do?

Should we, for our listeners out there, should they assume they have leaky gut and dysbiosis because the vast majority of people do, right? And I also want to acknowledge that antibiotics have saved many, many, many lives.

Part of why we're in this situation where we get the opportunity to grow older, right? The privilege of old age is because of antibiotics. They're not all bad.

How do we live, optimize lives? How do we optimize our health in that context? Understanding that we can't avoid glyphosate, we probably won't go a lifetime without antibiotics.

Some lucky people maybe will. But once we've been exposed to these things that affect our microbiome, create leaky gut, what do we do?

Vitamin D and Gut Repair

What are the top, say, five things that you would recommend someone do? Number one, I said in the last 10 books, get your vitamin D level up. Top easy thing to do.

Almost everybody that I see with autoimmune disease has a low vitamin D level. Low for me may not be what the government says is low, but I now will not let a patient have a vitamin D level below 100 nanograms per milliliter.

Most of my autoimmune folks, I'm trying to run them at 150 nanograms per milliliter. Will I go higher? Yes. Have I ever seen vitamin D toxicity? No. The university of California, San Diego, which has one of the largest vitamin D

research group hasn't seen vitamin D toxicity even at 40,000 international units a day.

Last interview, I remember you citing San Diego state at 10,000 IU a day. And so now it's up. No, that's what they recommend. They think the average American.

should be taking 9,600 international units. But they've done 40,000, no toxicity. That's great data. There's a really cool paper a few years ago taking people with eczema and psoriasis and putting them on 35,000 international units of vitamin D3 for six months and putting them on a low calcium diet.

I think that's an interesting proviso. And nobody got vitamin D toxicity. And the vast majority of them completely resolved their eczema and psoriasis just by high dose vitamin D3.

Why low calcium in that study? You know, I think it's a safety factor. The only people that I've seen with high calcium levels that don't have hyperparathyroidism are people who have been prescribed or have seen on the internet that they need to reverse their osteopenia or osteoporosis by taking lots of calcium.

And there is that feeling out there that you have to have lots of calcium in your diet. So if, and a big if, if vitamin D has the potential to elevate your calcium levels, and if that could happen, then in this study they said, hey, let's just go on a low calcium diet.

Why vitamin D? Number one, vitamin D is essential to their stem cells that are in the lining of our gut. And the lining of our gut has some of the fastest turnover of any cells in our body.

And so we have this incredible stem cells just waiting to be activated to plug gaps. And so we're always creating gaps and we need stem cells to plug those gaps and that would be a normal part of the process.

Unfortunately, you have to have a high level of vitamin D to literally tell these guys wake up, differentiate and become an endothelial lining cell in the gut.

And long before, We had leaky gut tests. I actually used vitamin D to figure out how much leaky gut people have because I had to give them huge amounts of vitamin D.

And then as their leaky, what I assumed their leaky gut was going away is we could lower and lower the dose of vitamin D and get the same serum level.

So that's number one. Number two, Vitamin D is essential for getting a diverse microbiome. And the higher your vitamin D, the more diverse your microbiome is, which is pretty cool.

And then I wrote in the longevity paradox that people with the highest vitamin D levels actually live the longest. So I learned that from two patients 22 years ago now.

I was seeing a husband and wife for the first time in my office in Palm Springs. And they were in their late seventies and I had their blood work and both of them had vitamin D levels of like 276 nanograms per milliliter.

And I'm incredulous. I'm looking at them and they appear to be perfectly normal. And I was taught that above 80 nanograms per milliliter is toxic for vitamin D levels.

I have most physicians still taught that, including most oncologists. So I'm going, gosh, you guys take a lot of IND, don't you? And they said, oh, yeah, it's a longevity hormone.

And I'm going, yeah, right, sure. And I'm looking at their kidney function, it's normal. And I'm looking at their calcium levels, and it's normal. And I'm going, you ever had any kidney stones?

Because that supposedly can happen. And they said, no. I said, you got any numb fingers and toes, which in theory could happen? They said, no. They said, why are you asking all these questions about vitamin D?

I said, well, quite frankly, from what I've been taught, you ought to be dead. The gentleman said, you don't know much about vitamin D, do you, sonny?

I go, well, just what I've been taught. They said, well, why don't you start reading? I did. They were absolutely right. One thing I love about you, Dr.

Gundry, you said this in podcasts, you said you've learned so much from your patients. I love that. That's such a humble and scientific way to go about practicing medicine that we're missing in mainstream medicine that for some reason most medical doctors I've talked to haven't.

They don't seem to learn post medical school and you're learning from your patients. I love that. Well, a number of years ago there was, um, I was a pediatrician in Boston, and you've noticed that practicing pediatricians were 20 years behind current scientific knowledge in their field.

And Dale Bredesen and I were talking about this because, so he got a group together called the Institute for Healthcare Improvement. And he took a bunch of us in various fields.

I came in from cardiology and cardiac surgery, and we had endocrinology, we had internal medicine.

Probiotics, Prebiotics, and Fermented Foods

And sure enough, we would go into prestigious institutions and also community medical center. And sure enough, the standard of practice was consistently 20 years behind current knowledge.

And so they set up this institute where we'd go in and we'd work with everybody on every three months. And we'd kind of see where we could raise the level of learning.

It was amazing that everything was 20 years behind common knowledge. So in a way, do we stop learning after medical school? We're not supposed to because we're supposed to get continuing medical education credits every year.

The sad thing is, at least for MDs, almost all continuing medical education is funded by drug companies. Duh. It's so frustrating, but I think conversations like this are really, again, empowering, right?

Giving people the tools and the information that they need to optimize their function, particularly as we age and it gets a little bit harder. So I'm surprised, Dr.

Gundry, I was expecting you to talk about aloe and glutamine, some of the herbs out there, degluternated licorice is another one that comes out. as supportive for healing leaky gut.

And certainly in my clinical experience, I've seen those be very helpful. But you didn't list them, so I'm just curious. Do you feel like those would be something someone should consider?

And also probiotics. What do you think of probiotics? One of my biggest selling products at Gundry MD is called Total Restore, which has deglycerized licorice and glutamine and about 20 other things that have been shown to work.

So yeah, my point to my patients, and I have a product called BioComplete 3, which is probiotics, prebiotics, and postbiotics in terms of nanoencapsulated butyrate.

And it's my biggest selling product. In fact, we sold over 10 million jars of biocomplete tree. So I can heal leaky gut. But the reason I came down on lectin so bad is that.

Sure, I can heal your leaky gut, but if you keep swallowing razor blades, which are lectins and other things, you're going to tear it right back open, and I see it all of the time.

Let's talk about probiotics. I like to use the example. I have offices in Palm Springs and in Santa Barbara, and I still see patients six days a week, and we'll get into that in a minute why.

But let's suppose, let's call probiotics grass seed and let's call prebiotics fertilizer. I can sell my patients some grass seed in Palm Springs and they'll come back three months later and they say, you sell me bad grass seed, it didn't grow.

And I go, well, what did you do with it? And they said, well, you know, I took it out in the sand and spread it around. It didn't grow. I said, well, did you fertilize it?

No, you didn't tell me to. Well, did you water it? No, you didn't tell me to. I said, well, what did you expect was going to happen? And this is what the Sonnenbergs, I thought, was so useful.

They took a bunch of healthy people and they looked at their markers of biodiversity, tropical rainforest in the gut, and they looked at markers of inflammation.

And then they gave them a bunch of prebiotic fiber. They gave them inulin. and they all ate the inulin and looked again, their gut microbiome diversity didn't change and their markers of inflammation didn't change a bit.

And they go, well, what the heck, you know, we gave them a bunch of fertilizer. And they said, well, we must be missing something. I tell you what, let's do the same thing, but this time let's give these guys some probiotics, post-biotics and fermented foods, primarily yogurts and keifers.

and we give them the same inulin. This time, finally, they got more diverse microbiome and their inflammatory markers went down. And this is what I wrote about in gut check.

What we now know is that there's this incredible assembly line of bacteria. And you may need, let's just make it easy, five different bacterial strains.

Strain one eats something and he poops out something that strain two needs to eat. Strain two eats that thing and poops out something that strain three needs to eat.

And if one of those guys is missing, then the assembly line falls apart. And this is exactly what, you know, is the problem. It's so much more complex than any of us, leave me, could have imagined the complexity, you know, how this evolved over time to make it what a wonderfully functioning system.

And then we went and screwed it all up. You gotta get probiotics, but you gotta know which ones. You can't just willy-nilly throw them in there. You gotta know, we'll eventually, with stool testing, know exactly who's missing, how many of who we need to give, what we have to start.

For instance, almost all of my patients have absolutely no butyrate producing bacteria in their gut. And one of the things that's been startling to me, now I'm a big fan of acromonsia mucinophila, but remarkably, a number of my patients who are taking, well, just give a shout out to Pendulum, good company, they're taking live acromonsia.

They don't have any acromonsia growing in their gut and they've been taking it for a year. And you go, well, what the heck? And then you go, oh, look, These guys don't have any acetate and the acetic acid.

And these guys, these butyrate producing bacteria, many of them have to have acetic acid as a starting point to make butyrate. And where's the acetic acid?

Fermented foods, vinegars.

Butyrate, Ketosis, and Brain Protection

And you go, aha, that's how all these really ancient people who fermented everything, because that was the only

storage system, did so well. So again, coming back to dementia and Alzheimer's, what is the connection between imbalances, leaky gut, in the gut, and our brain?

We know that there's the vagus nerve directly connecting them. But what are the other nuances? You've talked about inflammation. I feel like there are, again, you mentioned the complexity of this.

I have such a reverence. Like, do we fully understand it or are we just beginning to? And what can we do about what we know that connects the gut to the brain?

We're learning more and more. I mean, it was as a surgeon who used to cut the vagus nerve to treat ulcers. Imagine, I guess my surprise when you look at people who've had what's called a vagotomy for ulcer disease way in the past, and they have a 50% less chance of developing Parkinson's than somebody who has his vagus nerve intact.

And you go, Well what's with that parkinson's is a disease of the brain it has nothing to do with the goddess we know it has everything to do with the god so that's just one of the tip off but the biggest nervous just one way that information is sent to the brain from the god.

And I like, you know, Dale has wonderful ways of describing things. And we were talking about amyloid plaque and tau proteins. And I've found a way of telling people about this.

So let's suppose we have leaky gut, just everyone listening, humor me, you have it. Get over it. And we have our forward facing troops lining in the gut and 80% of all of our white blood cells are lining the gut.

What are they doing down there? You know, it's something, something's pretty doggone important to station, you know, at 8% of all your soldiers down at the gut level.

Well, they're there to handle these terrorists coming across the border, and they can usually snuff it out. But if the terrorists are coming every day, these guys are getting overrun.

And just like forward outposts, you would send information to all the rest of the army. You would go to threat level five and you would send information up to the glial cells, the microglial cells and the astrocytes going, holy cow, we're getting over run down here.

The terrorists are coming. They're coming for you. You're the most important guys of all time. The neurons are the key. Get ready, because they're coming.

So I use the example, after 9-11, all of a sudden, if we had a federal building or an airport, we started erecting concrete barriers. And rows and rows of concrete barriers, because the last thing we wanted was a terrorist with bombs and a truck heading into a federal building.

And so when I deal with my patients with cognitive impairment and they bring in their PET scan or whatever and look at all this, they said those are concrete barriers that have been erected to slow down the terrorists and they're trying to protect those neurons.

The problem is they've done such a good job that they've pulled up all the drawbridge and now no information can be exchanged at all. And that That's helpful to them.

And I think Dale liked that example too. You know, we've now wasted $40 billion trying to tear down the concrete barriers in the brain, and it didn't work.

Of course not, because that wasn't the problem. That was a response to we're being overwhelmed from our gut. So the amyloid plaque is the concrete barriers our brain put up to protect itself from the terrorists.

Got it. For anyone who's listening, who wants to protect their brain, who maybe knows that they have a risk of

developing a neurodegenerative disease as they age, whether it's MS or Parkinson's or Alzheimer's or dementia, one of the many types of dementia we're learning more about.

What can they do? What can they start doing today? Should they go get a test to look at their gut? Should they just start taking probiotics? Should they just start eating more fermented foods?

What about a ketogenic diet? You keep mentioning butyrate. I'm wondering how do all of these pieces play a role in reducing our risk of neurodegenerative disease as we age?

Well, I think that's one of the things that Dale and I have found through the years that has been useful. in that butyrate is probably the most important short chain fatty acid for mitochondrial health, for neuron health, for preventing cancer.

I mean, it's such an amazing anti-cancer agent, but that's another story. And one of the things that's lacking in almost all of my patients when they walk through the door is they don't produce any butyrate and they don't have the precursors for producing butyrate.

They don't have the bacteria. And so I think one of the ways is a ketogenic diet. And, you know, Dale and I, when we started long ago, we were, for instance, very afraid of fats, particularly for our APOE4 patients.

And through the years, we've all kind of come to embrace certain very good fats or a mild ketogenic diet to start making these butyric acid compounds.

That's become standard for you, Heather, and me, and Dale, and we've seen the results. I started giving some of my patients important cheeses like, for instance, parmesan cheese or goat and sheep cheese.

Heaven forbid if I had done that 20 years ago because So afraid for my apple E4 is of giving them saturated fats. I think we've talked about that before.

So there's a lot of ways that people can take care of their brain.

Sugar Cravings, Sweeteners, and Coffee

And certainly with mild cognitive impairment, that's one of the steps that I think most of us have seen people improve. Can I ask, my uncle was recently diagnosed with cancer and he's having a meeting with his oncologist soon.

I wanted to ask, what can someone who's either been diagnosed with cancer or is concerned about that, how can they best use butyrate to be of help? Is it to go on a keto diet?

Is it to take an MCT oil supplement? Or is there a specific type of food that they want to eat to get the most butyrate? What can they do? Well, the nice thing about MCT oils, particularly C8 and a bit of C10, is that it's taken directly to the liver.

medium chain triglycerides absorb totally differently than any other fat. All other fat has to be transported by chylomic rounds into the lymph system.

MCT is taken directly into the portal vein and then it goes to the liver where the liver basically has no choice except to convert it into ketone bodies.

And so you could eat, I used to joke, you could eat this giant fresh fruit salad that has more sugar and carbohydrates and have a couple of tablespoons of MCT oil, you'll get into ketosis.

And that's really the beauty of MCT oil. Why I really like goat and sheep cheeses and goat and sheep yogurts is that 30% of the fat in goat and sheep milk is actually MCTs.

unlike cow's milk. So why not? And then ferment it. So that's why I'm a big fan of goat and sheep cheeses. You mentioned fruit and fruit sugar, fructose, glucose, olive, high fructose, corn syrup.

These things are ubiquitous in an American diet. And many people who struggle to go in the direction of ketosis, it's because they have such intense sugar cravings.

Oh, yeah. harken back to the gut microbiome, right? It's not even us craving it. You talked about toxoplasmosis affecting behavior. Yeasts and bacteria craving glucose and sugars can have a huge impact on our behavior and what we choose to eat.

I know I have what I call my donut days. That first 24 hours or so when I am restricting carbohydrates, I haven't eaten a donut in 15 years, but it's all I can think about all day.

And so this is a big struggle. And what I'm wondering from you is what are your favorite sugar alternatives? What do you suggest to people who have those sweet cravings as they try to reduce that?

Are diet sodas an option? What about xylitol and erythritol, allulose, monk? Allulose. Yes. Okay. You know, allylose. Allylose for the win. Yeah, I mean, it's actually, number one, it's a true sugar.

It was first discovered in figs, but it's actually a prebiotic. The FDA has declared it is actually a prebiotic. And it's got some really cool, you know, little lower blood sugar.

I put it in my black coffee just to blunt the, you know, coffee's effect on raising my blood sugar. And there's been a couple of cool human studies showing that it does produce weight loss.

I like it so much, Gundry MD makes our own Allulose and sells it. So, no, I'm a huge fan of Allulose. And I think it really does help get away these sugar cravings.

But let's not kid ourselves, when your brain can only use glucose as fuel and needs huge amounts of it to drive these poor mitochondrial function, which are basically dead anyhow.

Your brain is going, where's all the sugar? I need sugar, go find it. Shame on you. Couple that with now we know that because of our processed food diet, There are bacteria who are really good at kind of moving up the food chain and grabbing simple sugars and taking that and then saying, yeah, that's exactly what we like.

Go find some more. It's just like it's an addiction that I talk about. These bacteria will control your cravings. The sad thing is 100 years ago, our great, great grandparents ate whole food.

And they ate it whole. And we tend to forget that. I mean, no offense to anybody, but a, you know, a collagen protein smoothie, that's not a whole food.

When we ate these whole things, there was a lot leftover that we couldn't digest. And that filtered down primarily into our colon where all these good guys were waiting.

And they say, oh yeah, oh yeah, that's that. That's what we were waiting for. Thanks so much. We got what we need now. They hear us chewing and they hear us swallowing and none of that stuff is in anything we eat, but they know we're eating and nothing comes.

And so they're going, what the heck? Where's our stuff? Go find some more food. And that process keeps going. So it's, boy, we done a bad job. Dr. Gundry, you mentioned coffee.

What is the impact of coffee and alcohol on the gut? Coffee has some really good polyphenols, and one of the real, I think, revelations over the last 20 years is that polyphenols are not really good antioxidants, get over it, but they're really good prebiotics for gut microbiome.

And so anytime you can get polyphenols into your diet, that's a great thing. Now, alcohol, it depends. For instance, there is an interesting human trial that I like to cite where they took human volunteers and they gave them equivalent calorie amounts of red wine, red grape juice, and gin.

And looking at intestinal permeability and gut microbiome diversity, only the red wine was capable of improving gut microbiome diversity and helping the gut wall.

The grape juice was a wash probably because of most of the fructose in there. And the gin was horrible. It really hampered the gut microbiome and really hurt the gut wall.

And one of the sad things I see at our local Costco's is a lot of our senior citizens pushing out these half gallon of vodkas and gins and whatever.

Alcohol, Olive Oil, and Healthy Aging

And that seems to be their drink of choice. So, uh, I really try to wean my. alcohol drinkers over to red wine. There are two papers out of France looking at women's mental and vascular health that champagne is very effective and my wife reminds me of that frequently.

Speaking of drinks of choice, so if I have a glass of wine, I'll be up in the middle of the night with sweating. And I have always thought it's because of the sugar.

Maybe I'm super toxic and don't realize it, but it just doesn't agree with me. You're sweating because you uncoupled your mitochondria. Ah, okay. So there's an explanation for this.

I just avoid it because it doesn't feel good. Yeah, that's fine. You'll get a kick out of this. So last time I saw you, you sent me home with some high polyphenol olive oil and a girlfriend of mine who I grew up with, we went through our teens and twenties together.

So we used to take shots of alcohol. Now we take shots of your olive oil. Excellent. I've started craving it, and that peppery flavor, it's just so funny and kind of comical to me that we're putting it into shot glasses.

So instead of drinking alcohol, really, it can be fun and social to taste test olive oil and to taste things that are really good for us. Oh yeah, it's great fun.

Yeah, you know, the Greeks consume 26 liters of olive oil per capita per year. Now, think about that. So, you know, a two-month-old baby is having 26. No, so most Greeks, most adult Greeks have a liter of olive oil per week.

And that was actually the basis of the predimed study that I get a lot of grief in. So in the predimed study, people were prescribed a liter of olive oil per week for prevention of heart disease.

And also, turns out, actually improved cognition over a five-year period from 65 to 70, either nuts or olive oil. But they were prescribed a liter per week and they had to pick it up at the clinic and bring it home empty and bring it back empty.

Not all olive oil is created equal. Looking for good olive oil. What are some of the considerations? My olive oil is the highest polyphenol-tested olive oil that has been tested.

It's 30 times more polyphenols than any other test. But there's some really good olive oils out there. If you go to Costco, they have usually a tall square bottle, and it's got a Toscana label on the top.

that I've been to that bottling plant, it's in Tuscany, and that's a really good reputable place to get olive oil. There's a really good company out of California called Beriani.

If you ever see Nuvo olive oil, which is the first youngest olive that has more polyphenol content, in general, more

bitter, more better. If it makes you cough, usually the polyphenol content is quite high.

And is it important to get it in glass versus plastic? Yes. Please don't go to Costco and buy the giant plastic jug. The other trick is, olive oil, once you open the bottle, it starts to go rancid fairly quickly.

It'll oxidize quite quickly. So you want to buy olive oil in small bottles and use it up quickly. Don't take the gallon jug home. Get through that liter a week.

Yeah, and don't put it in your windowsill. I've seen that in some folks. I love that quote that you have, Dr. Gundry, that the purpose of food is to bring olive oil to your mouth.

I learned that from two elderly gentlemen at the top of a white road in a trattoria in Italy. My wife and I would just drive up white roads to see what people did.

And so they were having their courses and there's always a bottle of olive oil. on every table. When they finish the course, they take the olive oil and they dump it in the bowl.

And then they tear a piece of bread, smash it in the olive oil. I go, what do you guys do that for? They look at it. The purpose of bread is to get olive oil in your mouth.

I'll remember that. So that's where that came from. The only purpose of food is to get olive oil in your mouth. Dr. Gundry, I want to ask you something that's a little bit contentious in the scientific literature, depending on who you talk to.

It's about these artificial sweeteners. Some studies show that artificial sweeteners don't spike blood sugar and don't create insulin resistance. These are usually short-term studies or laboratory studies.

Then you have longitudinal studies, like there's one out of France of a hundred thousand people looking at people over nine years, and they found that artificial sweeteners, and they looked at multiple of them, Exposure to those basically increases the risk of type two diabetes by 69% in this longitudinal study.

So in the real world, it looks bad in some clinical trials, some short-term studies, it doesn't look so bad. Can you explain what artificial sweeteners are doing to our gut bacteria and how that might be influencing the risk of insulin resistance type two diabetes?

Well, there are. Several studies showing that a lot of these artificial sweeteners, particularly sucralose and aspartame, really do impact the gut microbiome in a negative way.

But I think the simplest way to think about it, as a former diet coke addict, I drank eight diet cokes a day and I was 70 pounds overweight, running 30 miles a week, eating a healthy, low-fat diet.

We have no sugar receptors in our tongue. We have no sugar receptors in our gut, but we have sweet receptors. And they're there because the only time we would have ever had sugar was when fruit was ripe or occasionally honey, but that's it.

So your brain would sense that sugar was coming, because that was the only thing, call down the pancreas, make some insulin so we can handle this. And now when it tastes sugar, it says, okay, sugar's coming, pancreas, go kick up some insulin.

pancreas says yeah I guess it's coming so the insulin goes up and then blood sugar falls and the brain goes what the heck you didn't get any sugar you go back and get some more I'm starving to death up here literally if they could have sterilized a diet coke I would have done surgery with it in my hand So I was constantly craving more food because my brain was going, you've been cheated again.

You've been cheated again. I just, you know, you drank 12 gallons of sugar and it didn't show up.

Purpose, Practice, and Closing Remarks

And I think that's where this long-term effect comes from. I think it just, your brain just keeps craving it because you're clearly drinking sugar as far as the brain can tell.

You have this breadth of experience and wisdom. You have been a cardiothoracic surgeon, a general surgeon. You have tried the healthy diets of the 80s and 90s, the low fat diets, the running, the diet coke, right?

Everything that they told you was healthy. And yet your experience now is showing you that we had it wrong for a long time. As you're getting older, what are some of the big takeaways about aging with grace and enjoying it?

Well, number one, I've always told my patients, never retire. It is a death trap for almost everybody. Just never retire. The other thing is, like any of the blue zones, and let's not go there, but Live in a hilly community.

For nothing else, work against gravity. Going uphill, going downhill. If you go into a building, that's fine. Take the elevator up and walk the stairs down.

You'll still get a huge amount of benefit, but never retire. It's just so bad. What brings you joy as you get older? I'm going to turn 75 in a month. And again, I still see patients six days a week, a newer patient says, what the heck?

You know, you're about to be 75. You don't have to do this anymore. And I said, well, actually I do because the only reason I get up is because if I don't see a miracle happen today, something I would have called a miracle 30 years ago.

And if I don't see one a day, it's a bad day. So why wouldn't I get up to see a miracle that what I would have thought it was a miracle? So that's why I get up.

It sounds like your work brings you a lot of purpose and meaning. Yeah, I just signed a lease, a 10-year lease on my new office in Montecito. Well, congratulations and have a great day.

All right. Do what you love and love what you do. To all of our listeners, you can guarantee to see Dr. Gundry for the next 10 years, the patient, if you can get to Montecito.

That's right. I'm probably Palm Springs too. I still have my office there. Dr. Gundry, this is just fabulous. You're a true inspiration. First of all, I love your books.

Your books are great. How are you able to crank out so many books? I don't know. It's really impressive. Well, I usually write my books when I'm on vacation or on holiday in the south of France or Tuscany because it's really hard to write when you're seeing patients six days a week.

On the seventh day, I'm at Gundry MD. Most people go on vacation to rest. You go on vacation to write New York Times bestselling books. That's what I try to do, yeah.

That's fantastic. The Gut Brain Paradox is available now. Where can people find your books and find out more about you? Because I've had a number of New York Times bestsellers.

They're usually in most bookstores, even the independent bookstores. And please help the independent booksellers out. COVID was really bad for them. But you can find them at Barnes & Noble, Amazon, et cetera, et cetera, wherever.

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