Opening on microbiomes and colon cancer

You know, the connection between the gastrointestinal microbiome and other microbiomes, by the way. So as you know, we now know that, for instance, the vagina, the urinary bladder, the mouth, all these places have their own unique microbiomes that in many cases has also been disrupted.

But let's take the case of, say, colon cancer. And of course, I know you've dealt a lot with this. So we know now with pretty good science, That over-proliferation of Fusibacterium nucleotum in the people you encounter with gingivitis and periodontitis are just bleeding gums.

That microbe enters the bloodstream and colonizes the colon, where the evidence is pretty strong. It's a major driver of colon cancer. So think about that, of course.

Colon cancer starts in the mouth. Yeah, it does. It really does. So, you know, I cringe when I hear people say things like they're going to have a colonoscopy to detect early cancer.

Well, if the gastroenterologist was really serious about preventing cancer, they would also do an oral microbiome test and do something about the fusibacterium.

This is Doctor Talks. Welcome to Vitality Made Simple. This is the podcast that equips you to feel better, look better, and to enjoy better relationships.

Well, guess who's on today? You know him, you love him. Today, our guest is Dr. William Davis, creator of the Weet Belly series, Supergut. If you've been in my office, you've gotten a copy of Supergut.

Welcome, Dr. Davis. Well, thanks, Dr. Osment. Glad to be back. Oh, great to have you. It's just always a joy. I respect you so highly. You know, Dr. Davis is a cardiologist, but something happened back in his world that made him change trajectories.

And I would like for you to tell our listeners about maybe some sort of aha moment, personal story that you said, I think I'm not going to be doing heart surgery anymore.

I want to try something else. What happened? You know, it's embarrassing to tell you that I learned most of my most important lessons by blundering and tragedy.

So the first lesson to me was, so I had just moved to Milwaukee, Wisconsin, where they brought me in to do some of the new technologies. This is the early to mid 1990s.

So, gee, almost 30, yeah, about 30 years ago. Like angioplasty, laser atherectomy, all these devices you use to open arteries. Well, just months into my move, getting started, I get this call that my mom had died of sudden cardiac death, just months after her successful coronary angioplasty.

Dr. Davisu2019s cardiac wake-up call

And here, that's what I was doing. I was doing angioplasty, all those other procedures, and it struck me. Here I am, working day till night, opening people's arteries in a cath lab in hospitals.

And it struck me how inadequate that was. It really was not a good solution. People die at home, like my mom. They die en route to the hospital. And you're taking care of it in an urgent setting at the last moment.

What if I could have told my mom, say, a year, two years, five years ahead of time, and taken action to have

prevented it? Of course, back then, this remains true now.

If you ask John Q. Primary Care, what can I do to identify risk for heart disease and avert it, reduce it? They say, well, reduce your cholesterol with statin cholesterol drug or something similar, which is pet nonsense.

It's ridiculous. But the reason why that idea prevails is because it made literally a trillion dollars for the pharmaceutical industry, even though it does almost nothing.

So this was true 30 years ago. It remains true today that your primary care doc really only has limited tools at his or her disposal because of the brainwashing of the pharmaceutical industry.

I mean, sorry, I wish it wasn't true, Deb, but that's how it is. that your doctor will say things like, well, you have an LDL-bad cholesterol of 172 milligrams.

We're going to put you on Lipitor. Well, I ask this quick. So as you know, if you had a high cholesterol value, does that mean you didn't have a heart attack on Tuesday?

Next week? Next month? Next year? 10 years? Never? You can't tell. It's useless. It's completely useless. So 30 years ago, the only method to identify risk for a heart attack, death, sudden cardiac death, et cetera, was a CT heart scan that generates a coronary calcium score.

And the reason why we measured calcium is my friend Dr. John Rumberger, who was at the time at Mayo Clinic, he did a study that showed that of all atherosclerotic plaque, that's the stuff that causes heart attacks, 20% of the volume is occupied by calcium, something we can see and measure readily in living people, not in dead people, living people.

And so that became this kind of dipstick or measurement of total plaque. People say, well, that's just hard plaque. No, it's not. It's a measure of total plaque in all its elements, fibrous elements, yes, calcium elements, soft, rupture-prone elements, all the stuff that grows in plaque, you can measure indirectly with this Carnot calcium score.

Well, I put together the funding. We opened something called Milwaukee Heart Scan at the time, one of the first scanners in the Midwest, the only one in Wisconsin.

And we scanned thousands and thousands of people. And Deb, when you look for heart disease, you find it everywhere. People like you and me, going to work, riding your bike, going for walks.

These are not people in the emergency room having chest pain or having a heart attack. These are people just going about their business every day. Yet they have a high score.

Normal score is zero. Anything above zero is abnormal. Let's say somebody has a score of 400, which is as high. And we know that person's at risk for heart attack, dying, et cetera.

Well, what if we did nothing? We help publish these data. What happens to that person with a score of 400 and you do nothing? Well, it goes up 25% per year.

It's horrifying how fast it grows. So a year later, 500. Another year later, 625, et cetera. And with each increase, you're closer to dying, sudden cardiac death, and all that nasty stuff.

What if we put you on a baby aspirin and 40 milligrams of Lipitor or other high-dose statin cholesterol drug? Have you reduced saturated fat, total fat in your diet, exercise, a beta blocker like Metoprolol, all the stuff that conventional docs do?

How fast will that score rise? 25% per year. It has no impact at all. To this day, my colleagues still call that optimal medical therapy. It's wishful thinking.

It does not work. What do I do, though, on the ground, dealing with thousands of people freaking out on me because they're seeing their scores rise? Sadly, many of my colleagues practice unscrupulous, dishonest medicine.

It's rampant in cardiology because it pays so much money. So they say things like, well, your score now, six, that's a serious score. Let's do the real test, a heart catheterization to see if you need stents or bypass surgery.

We're talking about people like you and me going about our business feeling fine. We know with good evidence that procedures like that in people with no symptoms do not provide any benefit at all, but they pay really well, thousands and thousands, sometimes hundreds of thousands of dollars.

So it's too much temptation. So it's done all the time, all the time, every day in every hospital. unnecessary procedures. Not to say all procedures are unnecessary, but a great number, a great proportion of them are.

Well, what do I do for people to say, I need to stop this? Well, it took some zigzagging, trial and error, looking at the signs different ways, some of our own original signs.

It became clear, and it is something you have absolutely ready control over. For instance, when I added vitamin D many years ago, In a northern climate, I was in Milwaukee at the time, and of course we have winter, essentially six months a year, and so no one's getting sun.

When you go outside, you're wearing an overcoat and a hat and all that, so you're getting no sun exposure. So vitamin D deficiency in northern climates, as well as southern climates too, but much worse in northern climates, is rampant.

When I put people on vitamin D, a dose sufficient to raise their 25-hydroxy vitamin D blood level to 60 to 70 nanograms, It was the first time I saw their calcium scores drop.

A score of, say, 700 a year later would be 438, something like that. But it also led to other lessons, the therapeutic dose of omega-3 fatty acids, that we now know not just reduce cardiovascular events, but also facilitates regression of plaque.

There are two very important studies. Three now. One is the HARX trial, one is the EVAPORATE trial, and these were using CT coronary angiography. The same CT heart scan device, but this time with intravenous, died.

And I tried doing this about 18 years ago, but the software back then was inadequate, but now it has advanced. And they're able to quantify all the components of platinum, not just calcium, but fibrous elements, soft elements.

It's the soft elements that rupture and cause heart attack and death. So it quantified all those things. And it became clear that people on statin drugs and all these tries ever was on statin, does not stop the progression of the disease, but the omega-3 fatty acids did.

It regressed plaque, but especially the soft components. So after 20, 30 years of debate over the value of omega-3 fatty acids, it's finally crystal clear.

Omega-3 fatty acids, particularly above doses of 3,300 milligrams EPA-DHA per day, not only reduce cardiovascular events but achieve regression of plaque.

So vitamin D, omega-3s, this also led me down the path of elimination of wheat and grains because the amylopectin A, carbohydrate unique to wheat and grains, is a flagrant trigger for small LDL particles.

The real cause for heart disease, not LDL cholesterol, that indirect crude marker that was meant to be indexed to guesstimate LDL particles. So we measure small LDL And so some would come in at the start, say, let's say a heart scan score of 400, small LDL.

We used NMR, nuclear magnetic resonance, lipoprotein test. Very easy, very easy. Some would start, say, with a small LDL number, say 2,400 nanomoles per liter, particle count per volume.

and they would go wheat and grain free and it would be zero or some other low number.

From heart scans to diet and plaque regression

In other words, it wasn't a little bit better. It was eradicated. Small LDL, by the way, is oddly persistent. Large, normal LDL particles persist in the bloodstream for about 24 hours.

Small LDL lasts about a week. They're very prone to oxidation, glycation. They're smaller. They're better able to infiltrate the walls of arteries. They're much more inflammatory.

In other words, they're perfect little bastards, perfectly prepared to cause coronary disease, and they're caused by dietary guidelines. Any diet that says cut your fat, eat more healthy whole grains is a diet that causes heart disease as well as high blood glucose because that amylopectin A is also a flagrant trigger for high blood glucose as is sugar.

So in the diet we went wheat, grain, and sugar free, watched small LDL drop from those high numbers to zero, But that's also when people said things like, you know, I didn't know I was going to lose 47 pounds.

I didn't know that my skin rashes would get better, that my triglycerides would drop from 350 to 47. In other words, I saw all kinds of other improvements in health, even though I started doing this.

for the purpose of both reducing small LVL particles and for getting control over their carnal calcium score and their carnal atherosclerosis. So that was the etiology of your wheat belly series, which is worldwide, those books.

That was the first time I became acquainted with you. And then you wrote Supergut. And in Supergut, you sort of introduced the idea of diversity in the gut microbiome, correct, Dr.

Davis? Expound on Supergut because now that for our listeners that's leading to a new book that's just going to be incredible coming out in a couple of months called Superbody.

So tell us about Supergut. That's totally changed our life. It's actually changed lots of lives in Oklahoma. I jokingly say that we are, because of people having better bowel movements, we've started a movement here with Dr.

Davis's, I call it super gut yogurt, and then other variations of that. So a long-winded way to say, tell us about super gut and how that's leading to even more good information.

So all the things we were doing for the purposes of controlling the progression of carnal calcium scores and carnal atherosclerosis, that is the diet, no wheat grain sugars, supplements to compensate for the lack of certain nutrients in modern diets, I'm sorry, in modern life, like vitamin D, we're not getting sun exposure, magnesium, because we have to filter our drinking water, we have to, it's filthy if you got it from a river or stream.

Iodine because we're inland in Oklahoma, Illinois, Wisconsin. These are inland states, regions that don't have access to iodine in food. So we add iodine and those basic things stopped progression of cardiac calcium in the majority, but there were still people who had progression and sometimes had residual health problems.

So I asked, what are we not doing? So we started to manipulate the gastrointestinal microbiome, high dose probiotics, probiotic fibers, fermented foods, that seemed to help, but there still seemed to be something lacking.

So I started paying attention to the microbes that were missing. So we know with good confidence that if someone takes an antibiotic, let's say Amoxicillin or Chlorithromycin, we know that the number of species they have near gastrointestinal microbiomes drops.

by hundreds. So one recent study, for instance, five days of clarithromycin, about 400 species at the start, which is low, by the way, so we start with an impaired microbiome, but 400 drops about 100. And then it gradually recovers, but doesn't fully recover.

And we know that people who take antibiotics gain weight, they have greater risk for dementia, Parkinson's disease, autoimmune diseases, other neurodegenerative.

In other words, antibiotics were in many instances a godsend, but they also have so many unintended consequences. And among that is disruption of the gastrointestinal microbiome.

And we've lost numerous important species. One of the most important species lost is Lactobacillus roteri. So roteri is ubiquitous in mammals. So if we were to grab a wild raccoon from the forest or a giraffe, or a moose, they all have rhodorite.

If we went to Tanzania or the highlands of New Guinea or the Brazilian rainforest, all those hunter-gatherer humans unexposed to antibiotics, they all have rhodorite.

If we took modern people in Oklahoma City and LA and New York, almost nobody has rhodorite. So I thought, let's see what happens when we restore it. Because the preliminary evidence in mice suggested spectacular benefits.

But the problem was the microbe we got came as a commercial product created for infants. So the dose was absurdly low. So I thought, how do we increase?

Well, you could take 100 tablets, that's dumb, right? Or we could ferment it and increase the microbial count. So I fermented it as something that looks and smells like yogurt.

You know, I kind of regret calling it yogurt because people think, oh, I can just go to the store and buy yogurt. No, no, no, no, no, no, no. As you know, it's something entirely different.

I've been calling it progert, you know, to, okay. I mean, that's a little bit better, but you're right. It's not the same thing. It's, it's medicinal food.

It looks and smells kind of like yogurt, but we're fermenting human microbes. When you buy yogurt in the store, those aren't human microbes. Those are microbes from other places.

We're going to ferment human microbes, but specifically we started with lactobacillus roteri. And I tweaked the whole process. I used prolonged fermentation.

Roteri doubles. That's how what microbes do. They don't have sex. There's no male and female microbes. They just double themselves. So, rhodorite doubles every three hours or so at human body temperature.

And so, I let it ferment and thereby double 12 times over 36 hours. When we count the microbes, there's a method called flow cytometry. We've done dozens of these methods, these measurements.

Can we get something like 300 billion? microbes per half cup or 120 milliliters serving. So we get these huge counts, and when people consume it, we saw all these spectacular effects.

And that became part of the program. But it also became clear that about half the people also had a peculiar situation in which fecal microbes had been allowed to over-proliferate due to antibiotics and other factors.

Fecal microbes in the colon where they belong were allowed to over-proliferate and then ascend into the 24 feet of small intestine. And you know what, to be honest, I poo-pooed that.

I thought, nah, that's rare. Until a consumer device came out called AIRE, A-I-R-E, made by the Food Marble Company. and it was a way to measure hydrogen gas on the breath.

Humans can't produce hydrogen gas, but microbes can, so we can use it as a method to map where microbes are living in the GI tract. Well, I started doing this when I started talking about this a number of years ago.

And it became clear that about half the population or more have this problem. There's a way to do this. It's a protocol of follow. It's in my Supercut book to see if microbes are living in the small intestine.

Lo and behold, it's everywhere. And so I tweaked the recipe for Rotari and added two more microbes, Lactobacillus gaseri, And initially, I added bacillus coagulans.

I have since replaced it with bacillus subtilis. But these are microbes I chose for very specific characteristics. One, they're lacking in modern people.

Two, they survive stomach acid at high numbers. They're very vigorous. Three, they adhere to the lining of the small intestine, which is unusual. And then four, they produce bacteriocids.

These are natural antibiotics that kill fecal microbes. So I called it SIBO yogurt. We co-ferment those three, get those high numbers, and so far it's been unexpectedly, wonderfully effective in normalizing breath hydrogen gas and bringing with it great health benefits when you eradicate or correct SIBO.

Benefits like reduction of triglycerides, reduction of small LDL particles, reduction of blood pressure, reduction of symptoms of irritable bowel syndrome like bloating and diarrhea, reduction of joint pain, reduction of skin rashes.

So I stumbled onto something that was unexpectedly extremely powerful in this thing that I call SIBO yogurt. Well, one of the extraordinary pieces is that like the bacillus ruderi.

Now, Dr. Davis, tell our listeners why all it does. I mean, it has far reaching effects. And of course, I like to talk about relationships a lot, but it really helps improve relationships.

So explain all of that. So if we believe the mouse evidence from MIT, that was the initial set of studies that inspired all this, they saw a three-fold rise in blood levels of the hormone oxytocin, which most of your listeners I'm sure know as a hormone of love and empathy, but it's actually a lot more than that.

But it does amplify feelings of affection, of closeness to others, et cetera. Well, we're seeing that play out in humans.

Building Super Gut and restoring the microbiome

We've been trying to reproduce that in mice and humans and have some difficulty with them. It's a very tough thing to measure. But we're seeing, I believe, seeing it play out in real life, and that is people say things like, you know, my relationship is better.

I'm closer to my partner. I'm more tolerant of the behavior of other people. I'm more generous. I'm more tolerant of the opinions of other people, even if I disagree.

So I believe we're seeing a transformation that sounds like an oxytocin effect. So of all the things we achieve with rotary and other microbes, I think the biggest thing we do is achieve improvement in social and emotional behavior.

Well, that is absolutely something that I hear about anecdotally among people. They talk about better sleep. Of course, we also know that it's improved muscle tone.

But people always mention always that I just have more stamina for people. I'm not as exhausted by my day at work or conflict. So I think that is just huge.

I mean, that's one of the biggest problems going on these days. One of the things, so my audience is largely female. And unlike you, they say things like, well, I don't really care much about that stuff.

I just want better skin. So I performed a small human clinical trial. to document the changes, and we did see improvements in skin, reduction in wrinkles, etc.

This was a small, non-randomized, no-placebo arm. We're not pharma. We don't have billions of dollars. We don't grip people off for billions of dollars, so we had limited budgets for studies, but it did confirm that there's important skin changes.

But, unexpectedly, I also saw a dramatic reduction in waist circumference, dramatic reduction in waist circumference, but no weight loss. So, I believe what we're seeing, consistent with the animal evidence, consistent with what we're seeing on a large scale anecdotally in humans, is a restoration of youthful muscle.

So, we're doing another trial to document that formally, but I believe what we're seeing is selective reduction of abdominal fat and a return of youthful muscle.

So they got me thinking about, you know, have we stumbled on a way to affect what I call shape and body composition? Because as you know, as we age, we lose a lot of muscle.

about a third or more of our youthful muscle we had in our 20s is gone in your 60s and 70s. You can see it in people, right? Yeah. You say goodbye and I say hello.

You know, that's what I'd say. It's like, guys, what happened? And of course, this becomes the light because of the GLP-1 agonist nonsense. So people are told, yep, people are told to take drugs like Wegovi, Menjar, et cetera.

And they do work. They lose a lot of weight. So somebody pays, for instance, $12,000 or so for a year's worth of one of those drugs. They lose, say, 40 pounds.

Of that 40 pounds, 30 is fat, 10 is muscle, sometimes more. They stop the drug because most people can't afford that indefinitely. They stop the drug.

They regain more fat than they started with, typically 32 to 34 pounds in the first year or so. Don't regain much muscle at all. Loss of muscle is critical because when you lose muscle, it means you're going to accelerate the path to falls, fractures, frailty, and earlier death.

We know from large database collections of people who lost weight by reducing calories, as these drugs do. like the NHANES database or the EPIC-NORFAL database.

About 50,000 people tracked over years. We know that people who cut calories, whether it's a GLP-1 agonist, bariatric procedure, or a weight loss program that cuts calories, you're going to die several years earlier.

as likely due to the loss of muscle. And those last few years of your life are going to be filled with false fractal frailty and loss of independence.

But it highlights the critical importance of muscle. And I believe we may have, we need to prove this conclusively. But I'm seeing it play out. Personally, for instance, I regained 13 pounds of muscle.

This is a number of years ago when I first started doing this. I regained 13 pounds of muscle and my strength increased by 50% in three weeks, which is supposed to be impossible.

But at first I thought, what the heck happened here? I'm going to the gym and I'm handling weight I haven't handled since my 20s, in my 60s. Yeah, it's so exciting.

But also, Bill, I think this has a relationship component that we're not talking about because with your program, people get to keep enjoying food. And that's a big part of your daily life.

I've had so many people who are on these GLP-1 agonist drugs that are like, Like Dr. Debbie, I'm just not enjoying

eating anymore, but I'm so afraid to get off.

I mean, that's a big deal long-term. So people have a tough choice. They can stop the drug and see their health collapse and die several years younger, or they can stay on the drug forever, endure the loss of interest in food, the nausea, vomiting, risk for thyroid cancer, and all the other side effects that are appearing the longer people take these drugs.

Yet, the drug industry walks away with literally billions and billions of dollars, and sadly, many of our colleagues are hailing these drugs, despite all this, as breakthroughs, as wonderful, not recognizing the long-term effects.

What should have been done is the FDA should have insisted on long-term outcome data. It's expensive and difficult. Sorry, if people are going to die, you better know about that.

So they've created this huge disaster. We're only starting to see hints of it now because it hasn't been long enough, but I think in a few years we're going to see the disastrous health effects and the class action lawsuits.

But I think we have this maybe the path to a better solution is this microbial solution and other things that people can do to maintain. So the bottom line here is we need to maintain you full muscle.

Well, exactly. And people want to maintain a pleasant shape. I mean, so many people who've lost all this weight so rapidly just look emaciated. You know, and of course that's the muscle loss, but it's also how their pants fit.

It's how, you know, it's, it's keeping their pants up. You know what I'm saying? I mean, it like, that's what's so, so nice about your upcoming book, Superbody.

So it's not, you know, it's not just about one thing. It's about feeling great, having energy. So tell us about what we're going to learn in Superbody.

It's about all the things that we can do to increase muscle, restore youth. The ladies often say, well, I don't want to look like Arnold Schwarzenegger.

Don't worry, you're not going to. All we're talking about is trying to restore the kind of musculature you had in your 20s or 30s. So that kind of more roundness.

So we want people to fill out their, we want the waist to shrink. We want a restoration of youthful muscle and thereby maintaining vigor and flexibility and all the good things that come with maintenance of muscle.

Rotari is part of that solution. Collagen is another part of it. You know, collagen is something that your great grandma was getting plenty of. because she would eat heart and stomach and brain and all the organs.

She would make stews and broths out of the remnants of an animal. I mean, if you killed, if you raised and killed an animal, you don't just throw things away.

You use every last part of it. And that was a way to get lots and lots of collagen in hyaluronic acid, two factors, absinthe and modern diet. Because most people say, I'm not going to eat brain or heart or stomach anymore.

So we do resort to supplements because most people won't return to it. And one thing I tell people don't do, is use bone broth because the evidence is quite clear now that bone broth, because bones concentrate the heavy metal lead, bone broth, because of the prolonged boiling and the addition of vinegar to extract minerals, also extracts large quantities of lead.

And it's a source of lead exposure. So I tell people, instead of making bone broth, to make the very unappetizing sounding carcass broth. In other words, I really want to thank you for correcting me on that because I've always cooked the whole chicken, but then I also boiled, you know, sort of made two batches of broth, you know, boiled the bones with vinegar to extract more.

So now it's all carcass broth and it's all more delicious. It sounds awful, but it's delicious, right? It's delicious. Right. So collagen, hyaluronic acid are two factors that impact shape and body composition, things absent from the modern diet.

Likewise, we're also back to some of the basics. Vitamin D, omega-3 fatty acids, these are things. So what we're really doing is not giving you things that are foreign.

We're restoring things that you should have been getting all along, that your great-grandma more or less got. And when that happens in modern people, all these wonderful things happen.

Restoration, youthful muscle, loss of abdominal fat. And a lot of the modern phenomenon, like high triglycerides, high blood glucose, high blood pressure, a lot of things recede.

They get better just by restoring the things.

SIBO yogurt, oxytocin, and body composition

So what in many ways we're doing is restoring things that your body is expecting to get before dietary guidelines and processed foods, ultra-processed foods, a predatory food industry, misinformed doctors got in the way.

So all we're doing, that's all we're returning to the way things should have been. Yes, and I appreciate that you're not about a bunch of pills. People are sick of taking pills.

People are sick of pills, whether they're pharmaceuticals or whether they're supplements. You know, we want food. We want lifestyle. We don't want these recurring monthly giant bills that, you know, the secret berry from the Amazon that's supposed to solve everything.

I mean, you make it very clear there's nothing like that. It has to be a lifestyle factor. Well, Bill, many people are concerned about cancer these days.

You know, cancer is on the rise. What are you seeing in your research and just among the community you've created in terms of cancer? Let's see. What are you seeing in terms of the interaction between the gut microbiome and cancer risk?

You know, the connection between the gastrointestinal microbiome and other microbiomes, by the way. So as you know, we now know that, for instance, the vagina, the urinary bladder, the mouth, all these places have their own unique microbiomes that in many cases has also been disrupted.

But let's take the case of, say, colon cancer. And of course, I know you've dealt a lot with this. So we know now with pretty good science, that over-proliferation of Fusibacterium nucleotum in the people you encounter with gingivitis and periodontitis, or just bleeding gums, that microbe enters the bloodstream and colonizes the colon, where the evidence is pretty strong.

It's a major driver of colon cancer. So think about that, of course. Colon cancer starts in the mouth. Yeah, it does. It really does. So I cringe when I hear people say things like they're going to have a colonoscopy to detect early cancer.

Well, if the gastroenterologist was really serious about preventing cancer, they would also do an oral microbiome test. and do something about the fusibacteria.

So that's one cause. It's also quite clear that colonic dysbiosis is a major driver of colon cancer, not just fusibacteria, but other. So especially overproliferation, what are called proteobacteria, those are the fecal microbes.

species like E. coli, Klebsiella. This is very, very common. So dysbiosis of the colon. But even more so, it's becoming very clear that when those fecal microbes over-proliferate and then ascend into the small intestine.

Small intestine is an innocent bystander here. It's normally very permeable because that's where we absorb nutrients like vitamins and minerals and fatty acids.

But when fecal microbes invade the 24 feet of small intestine, it inflames the small intestine enough to increase its permeability even more. And that allows bacterial breakdown products, but specifically endotoxic, from those fecal microbes, to enter the bloodstream.

And we now know that endotoxemia, the entry of those bacterial breakdown products in the bloodstream, is a major driver of cancer. breast cancer, prostate cancer, other forms of cancer, as well as higher blood glucose, weight gain in the abdomen, emotional effects like depression and anxiety, skin rashes like rosacea and psoriasis.

muscle and joint problems like fibromyalgia. In other words, and there's a lot of talk about longevity, people taking things like nicotinamide mononucleotide or lipoic acid or coenzyme Q10.

Well, here's the thing to know. By the way, a lot of that data is fraudulent. It's not even true. But one thing not factored in is endotoxinia is a major driver of mitochondrial dysfunction, of impaired mitochondrial energy synthesis of ATP, impaired mitophagy In other words, take all the NMN you want, but if you haven't addressed endotoxemia, you're beating up your poor mitochondria.

They're dying. They're dysfunctional. In other words, so I think of those things like NMN and all that as if Dr. Osmit says to me, hey, I want my car to go faster and have more horsepower.

What should I do? And I say, well, top up the gas tank. You say, that's stupid. That doesn't do it. But that's what they're doing. They're topping up the gas tank.

They're feeding substrate into the mitochondria to increase ATP production and other effects. But not paying attention to the thing that's disrupting the function of mitochondria in the first place.

That is endotoxinia. And that, by the way, is science that goes back half a century. This is not neat. This has been going on for half a century. Evidence that endotoxinia is a major disruptor of mitochondrial function, structure and function, is well established.

You know, that's the crazy thing, Bill. So much of this has been in the good literature for years. Even if you look at, you know, I've been out of dental school 40 years and in the early 80s we were talking about these oral pathogens that impact heart disease, increased stroke and heart attack risk.

Well, you know, why in the heck was that not on the news? you know, 40 years ago. It's so big. You know, we dentists are sort of trained as carpenters.

So, you know, much like, you know, a cardiologist doing surgeries, you know, we do a lot of crowns and fillings and root canals and all that without really looking at root cause.

you know, what is causing and, you know, if gums are bleeding, then that's affecting everything that's increasing, you know, the endotoxemia is increasing, blood glucose, we know that we've known that for years, but yet those very simple things are overlooked.

That's one of the spectacular things about your book Supergut. It looks at the very basic things that I want our listeners to understand that whole doubling effect of 12 times.

When I was a kid, my dad would say, Debbie, would you rather have a million dollars or a penny that doubled every day for 30 days for a month? And I would say, oh, a billion dollars.

No, no, you want that doubling effect. And so that's what you're getting with this fermented yogurt that you're teaching everybody to do and then now I'm teaching everybody to do.

It's just spectacular. It is root cause and those microbes are put there. by God to produce neurotransmitters, hormones, just everything that we need.

So often in medicine, as you've said already, we're just adding that stuff instead of letting our body produce it. You know, that's why what you're doing is so important.

The, as you know, the oral microbiome is understudied. It needs far more research because we now know where if you're a modus gingivalis, for instance, it colonizes the brain and you find abundant numbers of that microbe in the brains of people with Alzheimer's.

Now there's a cause that's worse and nobody knows yet. Hard study to perform. But it's clear that the oral microbiome is a huge player, not just in oral health, but in overall health.

I see more and more people with hypochlorhydria, that is impaired stomach acid production. It could be due to those PPIs, the proton pump inhibitor drugs like Protonix, Asifax, et cetera.

It could be due to autoimmune gastritis initiated by the gliadin protein of wheat, a major initiator of autoimmune diseases. It could be due to unaddressed H.

pylori, the microbe that infests the stomach and impairs and inflames it. But I'm seeing more and more people. And when you lose stomach acid, as you know, it's an open door to oral microbes to be swallowed and then colonized, the esophagus, stomach, duodenum, jejunum, et cetera.

And it's disastrous. It leads to very difficult to control SIBO, small intestinal bacterial overdose. And of course, loss of stomach acid also is an invitation for fecal microbes to ascend also from the colon and colonize unrestrained in the small intestine.

But the hypochlorhydria of the stomach highlights the importance of the oral microbiome. It is a big player and one that is not fully appreciated until recently.

Well, thank you for bringing out hypochloridia, because I don't think I talk about that enough. Bill, in fact, I'm preparing for a lecture here in a few minutes, and I found a new research paper, I just reached for it as you were talking, called Linking Periodontitis with 20 Cancers.

20 cancers, very linked pancreatic cancer now. And so, but I think I'm missing emphasizing the low stomach acid piece of that. You know, with pancreatic cancer, I think about this a lot because, you know, with DNA, one of the problems, one of the reasons why the whole conversation, the microbiome, of course, is changing is we're getting away from culture methods.

Right. That is, of course, taking sputum or feces or urine or whatever, and then culturing on a petri dish, essentially. Well, most microbes that cause human disease don't grow.

lot of petri dish. And so it's only with the availability of DNA sequencing methods that it's clear that we have not identified the vast majority of microbes that cause problems for us.

If you took a sample of pancreatic cancer that has been taken out of somebody and you DNA sequence it, you find that it's filled with fecal microbes and oral microbes.

In other words, pancreatic cancer appears to be, it's hard to prove cause effect because doing that study, if I said we take normal volunteers and put fecal microbes in their pancreas, it's not an easy thing to prove.

But it suggests that pancreatic cancer is largely a disease of the microbiome, probably both fecal microbes from the colon and probably oral microbes from the mouth, which is a completely different conversation than radiating, resecting, chemotherapy when you have a well-established tumor.

What about paying attention to the oral microbiome? and the gastrointestinal microbiome as a broad means of reducing cancer versus concluding pancreatic cancer.

I think that makes more sense. It really does, and it's the easy area. If anybody has bleeding, they have a neural microbiome problem. If somebody's bloating and not pooping or pooping too much, there are these signs that you don't need a doctor for.

You can You can kind of figure it out on your own and, you know, with the help of research like yours, your book, books, you know, there's a lot of simple things to do.

And Bill, I think we're worrying too much about causation. I see this all the time. I mean, causation is important. But what about all the areas that are correlated that we can easily start controlling today?

Microbiome links to cancer and endotoxemia

You know what I'm saying? We focus on causation too much. And there's not usually one central cause. If you have tuberculosis, that might be one central cause.

But even then, it's that terrain that was susceptible and weak that allows someone to get the specific microbe. You know, as wonderful as the discovery of antibiotics was, as you recall, Alexander Fleming, the Scottish doctor in 1928, who surreptitiously identified penicillin, took some years to commercialize it, make it available.

But since then, of course, there are dozens, perhaps hundreds of antibiotics and wonderful things. All those disease, cholera, dysentery, tuberculosis, gangrene, all these things are largely things of the past.

And most modern people have forgotten how devastating those conditions were prior to antibiotics. But it also caused our colleagues to think, to apply that antibiotic model, germ antibiotic, to diseases like diabetes.

or obesity, or autoimmune disease. That's why we have this ridiculous paradigm of if you have diabetes, give you a drug to reduce blood glucose. If you have a neurodegenerative disorder, give you something that increases the neurotransmit like dopamine in Parkinson's disease or acetylcholine in Alzheimer's dementia.

or an inflammation-mediating factor like TNF-alpha or IL-1-beta or IL-6 in autoimmune diseases. In other words, never ask how this person get these conditions in the first place.

What's disrupted in this person's body to allow this to emerge? We have this kind of antibiotic-type paradigm still being applied. So as wonderful as antibiotics have been, They've also, I tell people it's like the law of unintended consequences.

It's like plastics. So in the 1960s, Dustin Hoffman was in The Graduate. And you may remember the scene where the dad comes by and says, son? There's one word I want you to remember, plastics.

Plastics are going to be the wonder of the future, and they were. Now look what they've done. Now we have a world filled with plastics, killing animals.

We now find plastics in coronary plaque. So we went from wonderful breakthrough to disaster. Same thing has happened in antibiotics. Wonderful breakthrough, no more TB and all that.

Now we have a disaster of huge proportions, experiences, diabetes, obesity, autoimmune diseases, colon cancer, other forms of cancer. And yet we're still, not you and me, but our colleagues are still applying the antibiotic paradigm.

If you have a cancer, kill it, not asking how to get started in the first place. And what can we do earlier in someone's life to have prevented in the first place?

Yeah. And I cringe at how many people I wrote antibiotic prescriptions for, say, the first 20 years of my practice, even succumbing to someone demanding an antibiotic.

You know, I wish I could undo that. So, you know, that's sort of part of the motivation of telling the world about, you know, SIBO yogurt and microbiome diversity and just helping people rebuild.

And I agree, there's good times for antibiotics. I still prescribe antibiotics occasionally. But boy, we really were taught to overuse them. You know, that all said, I wish I could tell you we have the perfect formula for rebuilding a broken microbiome, oral, gastrointestinal, vaginal, urinary blood.

We don't. We're getting there, I think. We're working on it. We're in the right direction. You know, at least we're driving the right direction. How would you say emotions impact the microbiome?

Huge, huge effects, and a two-way path. That is, your emotions affects the microbiome, the microbiome affects your emotions. So, it's both ways. We're seeing this, of course, with our favorite microbe, lactobacillus, rotary.

We're seeing all the effects, presumptively, of oxytocin, love and affection, reduction of social anxiety, acceptance of other people's opinions. It's also clear that SIBO, via endotoxemia, is a major driver of all kinds of emotional problems.

There's a German group who's done some very bold things. They took endotoxin and injected it into people without depression and saw that within three hours they were clinically depressed.

And when they did MRI scans of their brain that had all the hallmarks of depression, really essentially clinching a cause effect that endotoxemia, especially in SIBO, when you have permeability of a small intestine, is a driver of depression.

and associated anxiety also. And you'll see this play out. People with SIBO, for instance, who then correct their SIBO. And we can't measure endotoxemia yet.

It remains a research tool. It's not clinically available yet. I think it should be, but it's not. That is lipopolysaccharide endotoxin. But if we were, it's measured in studies, you'll see a reduction in LPS endotoxin.

And so we know that endotoxin, it drives panic, anxiety, depression, dementia, Parkinson's disease, Lou Gehrig's disease, sleeplessness, insomnia, nightmares, violence, hatred.

In other words, we're not talking about just being a little happier. or talk about phenomena with huge social implications. So I often think that, yeah, it's great to have better skin.

It's great to have beautiful musculature. I think the biggest thing we accomplish is the improvement in the social fabric and the emotional health of a lot of people.

I agree, Bill. I think relationships are the point. If you feel great, but nobody wants to be around you, that's a terrible life. You have had such a far-reaching impact on so many people.

I had a new patient come in who's become a friend. Her name is Junco. So you can imagine she's Japanese. She was raised in Japan. And she is one of your raving fans, one of your many raving fans.

And so I reached out to her and said, I was going to be talking to you and said, is there any question you want to ask Dr. Davis? So here's her question.

She said, how does casein impact leaky gut? I don't know. It probably is not the best thing. Dairy has problems, as you know. And yet we're using dairy to ferment.

So one of the primary reasons we use prolonged fermentation is to increase microbial counts. But there are other

benefits to the methods we're using. That is prolonged fermentation.

And one of the effects is the maximum conversion of the lactose to lactic acid, thereby people who are lactose intolerant almost always have no problem with the yogurt.

The accumulation of lactic acid, that's why it's so tart, caused the pH to drop to about 3.5, which is tenfold more acidic than conventional yogurt. So it's much more acidic.

Well, that level of acidity also denatures or breaks down the casein, the casein beta A1 that is the most prevalent in North America. We don't know if it's non-immunogenic, that has immune and maybe permeability issues in the small intestine, but it's been much reduced because it's fragmented now.

So, I can't say that our methods eradicate all the problems with dairy, but it kind of minimizes them. So, what's the effect of non-fermented dairy? Non-fermented dairy has some issues.

It really does, whether it's casein or some of the hormones. After all, milk is made for a growing calf.

Practical fermentation, dairy, and closing resources

So ways around it, use A2 dairy. So as you know, when a human breastfeeds a child, it's the A2 form of casein that differs from the A1 by one amino acid.

And so you can mimic that effect by getting A2 dairy or using goat, sheep, or camel if you have such things available. We have donkey milk here, Dr. Davis.

And it's helping a lot of people. So that's the human form. So that's a little safer. Most people are just fine with the casein A1 using its prolonged fermentation.

But if anybody's concerned, you always use the A2. Or for that matter, you always use non-dairy fermentation. We don't talk enough about that because it's a bit of a hassle to do non-dairy like coconut milk.

But you can do it and get a very nice result. Or for that matter, Fermenting hummus, or pica de gallo, or salsa. You can ferment all kinds of things. The only drawback to that kind of fermentation is we don't want to confuse fermentation of microbes like rotary.

that prefers human body temperature with fermented foods like kimchi, sauerkraut, et cetera, which prefers room temperature. So if you're going to use rotary, for instance, or the SIBO yogurt collection of microbes, you still have to heat it to human body temperature.

That sometimes changes the consistency of your food, but people need to bear that in mind, too. Well, your book, Super Gut, has a lot of that information in it.

A lot of my patients are using coconut milk successfully to make the yogurt. Well, we look forward to your Super Body book. When are you expecting it to come out?

Around mid-December. Mid-December for my birthday. Thank you. The thing is, you may be listening to this podcast when it's already out. So check it out.

You're going to find so much good information, so much basic information that you can start incorporating today. And Dr. Davis, it's just such a joy to see you.

I want to reach out and give you a hug through Riverside. Thanks for your time. I know you're super busy with Super Good and Super Body. You're super busy and you have a vibrant online community.

So in closing, tell our listeners about your meetup. Oh, so if people are interested in engaging in more of this,

there's, of course, a super gut book, super body book coming in December.

I have thousands of blog posts on my WilliamDavesMD.com, but I also have a two-way Zoom typically every week for A couple hours. I'm trying to keep it down to two hours.

But we talk about these kinds of things, you know, why are we doing this, what the effects are, I had a bad batch of yogurt. I mean, it's not just about yogurts, but other things too.

But because the yogurts and the purposeful manipulation of the gastrointestinal and other microbiomes, we haven't even had a chance to talk about the vaginal microbes.

So important. Yeah. which came to attention for me recently because of my grandchildren. And I saw their mom not being given any information whatsoever, despite there being a flood of great information on the vaginal microbiome to reduce miscarriage, premature labor, urinary tract infections.

I mean, great stuff coming out. So lots of things to learn, lots of things to talk about. And one of the things I do is discuss this in two-way Zoom interactions.

Typically every Wednesday night, and that's in my innercircle.drdavisinfinitehealth.com. And you have an online course that's really great. Right. I forgot about that.

Yeah, I have a microbiome master class. Enough to put you to sleep. It's exhausting. It dives into anybody who really wants a full understanding. Given what we know now, in 10 years, it's going to be obsolete, right?

But right now, it's the best we have, I think, a compilation of all the things that we know about the microbiome. and what you can do about it, but with deep dive into the science.

Well, you're curious, Dr. Davis, you didn't go to medical school and say, okay, now I know everything and if I don't know it, it can't be right. You know, I had literally had a patient recently who has chronic diarrhea from 6.30 AM to 10.30 AM every morning.

Can't go anywhere until then. Of course, I'm, you know, getting her on your protocol, but told her it's all in her head. I mean, you know, I made some jokes about that.

Uh, you know, all in her head. Are you kidding me? What the audacity of telling somebody, you know, because we don't know what to do. Then you're imagining it.

I mean, so no folks, no, there are answers. There are easy answers that you don't have to, you know, spend your retirement or your children's trust fund to find those answers.

And it's because of curious people like you, Dr. Davis. Thank you. Thank you. Thank you. Always a pleasure, Dr. Usman. Keep on doing what you're doing.

Thank you. And thank you, listeners. Share this with anybody who can benefit. You have a constipated friend, they need this. If you have a friend who's running to the bathroom, they need this.

If you have a friend who's bloated, they need this. Probably everybody needs this. So share it, subscribe, and just thank you so much for being such a vibrant community.

Join me on Instagram, Facebook, and look at my YouTube channel. There's a yogurt video on there to show you how to make this. So check it out. Blessings until next time.

Thank you for tuning into Dr. Talks. We hope today's episode has enlightened and inspired you on your path to optimal health. Each day is a new opportunity to make choices that empower your well-being.

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