You've Been Pooping All Wrong (And It's Affecting Your Brain) Transcript

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Opening on bowel movement myths

What is the one biggest myth that says it relates to bowel movements? That people should have one bowel movement a day. Like truly, that is that biggest man.

Our colon certainly is primed to have a bowel moment at least once in the morning. But that doesn't mean that's the only way to live and that the best way live.

Americans think that having about every third day or up to three times a could be normal. So you're not weird if you are going after every meal. Well, hey everybody, we're gonna get right back to the podcast, but I wanna share something with you that is very personal.

You know, for decades, I've been a practicing neurologist. I have been asking a single question, and what makes a good brain go bad? More importantly, obviously, what can we do about it?

And that question has led me to write my new book, which is called Brain Defenders. It's now available for pre-order.

Brain Defenders book promo

And in this book I'm going to take a hard look at where we are today, and offer up some challenges as to where we are today in terms of what we're being told.

You know, despite all the attention on targeting proteins, misfolded proteins like beta-amyloid for Alzheimer's, we still don't really have any meaningful treatments for diseases like Alzheimer and Parkinson's disease per se.

And we certainly can treat symptoms, but as it relates to treating the underlying issue, we're falling short. Many of these approaches manage the symptoms at best, but without really addressing what's driving the underlying process.

And this science is evolving. But what really exciting is the emerging research on what I've called the microglia. These are the brain's immune cells.

When they're balanced, they are protecting, their repairing. Well, when they were dysregulated, and we can talk about why that happens, we do talk that in the book, They can drive inflammation and lead to brain degeneration, often long before symptoms appear.

And here's the empowering part. These microglial cells are deeply influenced by your day-to-day lifestyle choices, your nutrition, you sleep, and your environment.

In the new book, Brain Defenders, I share both the science and provide a practical roadmap that will help you calm inflammation, support supportive microglia and really ultimately take control of your brain's destiny.

And if you pre-order your copy today at braindefenders.com, you can receive some special bonuses like a sneak peek at chapter one, the full glossary for the book, and a curated offers from my favorite brain health products, many of which I've discussed here on the podcast.

This is a new way of thinking about brainhealth and I truly believe that this book Hopefully, it's gonna change everything. I can't wait for you to read it, and I think you're gonna be as excited as I am about the information you are about to receive.

That said, let's get right back to our podcast. Well, hello everybody. Welcome back the Empower Neurologist. And I'm Dr. David Perlmutter, the host of this program.

Today's episode explores a topic that every single one of us experiences, hopefully daily, yet no one wants to talk about it openly. It's personal.

Introducing Dr. Tricia Pasricha and the gut-brain connection

but universal. And as it turns out, what I'm talking about is deeply connected to the brain. My guest is Dr. Tricia Pasricha. She's a gastroenterologist and author of a fascinating new book.

Here's the title. You've Been Pooping All Wrong. Now the titles is going to make you smile, but the science behind it is actually very serious and incredibly important.

Dr Pasritcha, let me tell you about her. she trained at Johns Hopkins. steeped in gastroenterology and represents a new wave. of physician scientists, as it were, that are working on the cutting edge, what we call neuro gastroenterology.

And that's the study of how the brain and the gut communicate. In her book, she dismantles some long-held myths about digestion, things like constipation and really what, we think we know about our bowels and our bowel movements.

But more importantly, She illustrates something that is profound. That is the, gut is not operating in isolation. It is exquisitely responsive to things like stress, our emotional state, or beliefs, and even deception.

It's really some fascinating information that she's uncovered. In fact, at one point in the book, she describes research that shows that students undergoing a stressful oral examination nearly experience double their intestinal permeability.

That's how powerful this gut brain connection or brain gut connection, however you want to call it, really is. It is bi-directional. This conversation is about more than digestion.

it's about basically removing stigma, removing shame and replacing myth and science and understanding how the nervous system and the immune system shape what happens basically where the sun doesn't shine.

I think you'll find this discussion both eye-opening and finally liberating. Let's get started with this podcast. Well, Dr. Pasricha, welcome to our program.

Thank you so much for having me. Glad to be here. As I said in the introduction, and as I think your book makes so clear, it's time. It is absolutely time, we gotta talk about this very important bodily function that we need to poop every day and why it matters and, why its so heavily stigmatized, but I you're gonna make that very clear to us that it is time that its not stigmataized anymore.

So that probably answers the first question I guess, which is why did you write this book? Yeah. I wrote this book after I completed my training in GI probably five, 10 years ago.

And probably the most profound thing I was struck by when I started seeing patients on my own was how many people would do that thing where they like linger at the door at end of the visit and they'd be like, you know what, I have just like one more question.

is this normal about me? And they'd like say, they asked something about their food. They're like, how many times am I supposed to go a day? Or is it normal if I have this color?

Like, and, I was like oh, this is so interesting. And I like was this just, you know, but I saw that pattern over and over again that so many people just didn't seem to have a good understanding of like what the absolute basics of

pooping look like.

Like they come in for some other reason, that then we kind of revealed that there was a big- This is great. This so important. Wow. Yeah. Yeah, I think we've all had that experience.

People just don't want to talk about it. And gosh, you made it clear in your book. It's so important. This function is so critically important, so then you decided to remove the veil.

Yeah. Well, you know, it's important one because there's this statistic that about one in three people, this came from the UK, one of three, people will avoid talking to their doctor about their bowel symptoms because they're so embarrassed.

And, question of our propriety, that's really a big problem when we're talking about early onset colorectal cancer, where we are not catching these younger people in these cases early enough.

It's a bit issue when were talking chronic GI conditions. And like you mentioned earlier, it's actually a lot of what I talk about in this book and I talked to my patients about it is not just limited to the gut.

A lot times we think about fiber and exercise and everything is being like just a gut health issue. It's really for your whole body. And I think the gut is this window and this gateway to your overall health.

Then if you put off those symptoms, you're so embarrassed to talk about those.

Why she wrote the book and stigma around poop

I mean, even the title of the book, which is You've Been Pooping All Wrong, the word poop, like, nobody, no two people agree on what the right word is for this, right?

Like when I write that word, often people will be like, you know what, should we be saying that? Should we not say bowel movement? Probably in medical training for you, in my medical trading, bowel movements was what we called this.

Right? And like when you say that to a patient, Defication, yes, a defecatory disorder. When you say that to some… A defocatory disordered, I've never heard that term before.

It's the textbook way of saying these things. We dance around the concept, but imagine telling a teenage kid who comes to your clinic, like, well, i'm concerned you may have a defectory disorder rather than saying like you've been pooping all wrong.

One is going to make them really stressed and concerned and the other one is gonna kind of clear the room and make it a safe space for them to share what's been going on.

And so we need to figure out what the right word is, and we should be comfortable with whatever word we decide on, but yeah, I mean I think I had a different background than a lot of people.

Like I'm the daughter of a gastroenterologist myself, so I grew up using every possible word there is to use for this, And we just talked about it all the time.

So I was really surprised when I realized not everybody grew up like me and like there are a lot of people who go to the bathroom, they don't look, They just flush and they move about their day and They don t really like think about it afterwards or what's more disturbing is they fall into that 40% of Americans whose bowel habits disrupt their daily lives.

That's a huge percentage for something that we just really don' t talk about out loud. You mentioned something sort of in passing a moment ago and I hadn't really thought that I would talk to you about this, but you mentioned

colorectal cancer in younger people.

I didn't really put this in the notes to talk to you about, but it is important. The JAMA study that came out in late 2025, that really made it very clear that this is a very big problem and increasing very, very rapidly over the past decade.

Why don't you unpack that for our viewers just for a moment? Yeah. I mean, this rise in cases, specifically young early onset cases has been troubling all doctors, but really gastroenterologists.

Chloroctal cancer is leading the way right now as of 2026 in terms of early-onset choral cancers and mortality for younger people when it comes to different kinds of cancers.

And what's in a way good news is that for older people, The complications, the death rates, those are actually declining. The rates are getting a little bit better as you're older, but they're not so much when you are for that younger group.

And one of the reasons I think that we have this problem is something is changing in our environment. And there are these risk factors that we can talk about that I think about very specifically for colorectal cancer that, I just think we're not on our radar as being risk-factors for cancer, like 20, 30 years ago, there's certainly risk factor today.

But the second half of this is suppose the cancer's there, it's brewing, we are late to catch it in younger people. We're catching them a little bit too late.

The earlier we catch these cases, of course, the better the prognosis is because we could intervene sooner. And part of the issue here is that people dismiss, especially when you're younger, you kind of dismiss your bowel habits.

Maybe it's because you are embarrassed. That's a third of people will defer talking to their doctor. A third if people… This was a study that came from the Colorectal Cancer Alliance.

…a third people would defer their whole colonoscopy because they're so embarrassed by the procedure. If we can break that stigma and also just raise people's awareness about, look, a change in your bowel habits, that's diarrhea, new constipation, maybe it's how thin your stool has suddenly become.

That's not no big deal. It might be, and the most likely scenario is that it, you know, what we hope will be is it is no It's not always the case and it's worth running by your doctor.

And even more importantly, it is worth knowing what your own normal looks like. If you're not somebody who's in the habit of looking and getting a sense of what are the things that influence your bowel habits and really knowing your body, you are not going to be so attuned to when there is a change.

I think this is a bit of a paradigm shift that maybe hopefully your book will help move along for primary care doctors dealing with younger people in their 20s, 30s and 40s that if that information is not forthcoming that there's been a change in bowel movements that they should query that.

moving forward, recognizing this incredible explosion of colorectal cancers, pancreatic cancers and other GI-related cancers in younger people. So we have our recommendations as to when we should start colonoscopy, either virtual colonoscope or true colonoscopy.

and even looking at stool for genetic markers and occult blood, etc. Do you think it's time that we revise those recommendations as it relates to the age at which they should begin?

I mean, that is the big conversation right now. It actually was somewhat recently within the last couple of years that we moved it from 50 as the starting age to now it is 45. So we've shifted it a little bit because of this rising number of cases in younger people.

And I think that that gets a good chunk of people, but you're absolutely right that it misses people who are even younger than that.

Rising colorectal cancer in younger adults

I would say the kind of disturbing bit of evidence for me is, even for those people who are that 45 to 49 year range who have been eligible for colorectal cancer screening for several years.

only about 20% of them are actually getting their colonoscopies. And so at some point we may even lower that age further, but I still actually think we're not meeting that gap even when we do.

For the younger people who are like, say they're less than 45 and they are worried about it, there actually are certain groups of people, who should be getting screened anyway and sometimes don't know it.

So people have a family history, Oftentimes we know, I see this in my clinic all the time, someone will say, yeah, my dad had some kind of cancer. I don't remember what it was, or I didn't know what age he was.

Maybe they're not in touch with that person. Or they certainly don t know like what their aunts had, what there uncles have. And two secondary relatives, that's aunt, uncle, grandparents, that'll buy you a colon cancer screening at a younger age, but you have to know the age.

You have know, the diagnosis. And again, I think this does come back to the fact that we just, in general, don't talk about our medical problems with our family members, much less our GI problems.

But it's really important that you know that because there actually is a big chunk of people that, we, a quarter of cases that were younger could have been caught earlier if they had just gotten age appropriate screening according to their own family risk.

So age-appropriate screening, would that include stool for blood in the 30s and 40s? Is that something that primary doctors should be doing? Yeah. So the blood test is more recent.

That data just came out within the last year or so. And it's on the market. I think everybody says whatever test that you're going to be able to get is the best test in that moment, meaning that for some people, We like to say the gold standard is colonoscopy and we say that because the colonoscopy, as you know, can truly prevent cancer because we're removing those polyps before they become a cancer.

But these other tests like the stool kits, like Coligard and the blood tests, they are very good at detecting cancer, we are obviously not removing polyp and things that we detect.

But some people just can't get the colonoscopy so easily. And it's like, you know, it can be hard that you have to take half a day off. You might get sedated.

Like, It's a big deal. I definitely think that if there's someone who, for whatever number of reasons, is not going to get a colonoscope, but should be screened, let's take an easier path.

Then often that stool kit is the easy path, the blood test is so easy. Let's do it. So is in younger populations, is there a insurance approval for COLA guard in people in their 30s and 40s, or do they have to have an indication like family history?

Exactly, there are certain criteria you'd have to meet if you're under 45. So once you hit 45, you get the screening that you want. But under that, if have a family history, it should be covered.

If you have things like inflammatory bowel disease, like these people need to be screened earlier. There are different groups of people, especially if we have known like genetic condition, for example, You'll get screen earlier, but someone with average risk and no symptoms, It wouldn't be cover by insurance.

but if You have symptoms and that would be things abdominal pain, a new change in your pattern of bowel habits, all of those things would be, should be covered by insurance.

And so we are seeing more and more people opting for total body MRI. I don't know how effective that is as a screen for colorectal cancer, but I bet it picks some of them up.

And the other thing is people are getting very obviously now getting their genome sequenced and are finding things out. Whether they've known about their uncles and aunts or parents, whatever, now they're seeing if they have genetic markers or risk factors rather, for risk here for colorectal cancer.

And I wonder if when they interpret those results, either from the company that did them or more appropriately with the ordering healthcare provider, if they can get into that and then nudge that individual to getting screened.

Yeah, I mean, you're right. I don't know that there's been good data about how well an MRI can pick up the polyps. The virtual colonoscopy is a special type of radiology protocol that's pretty good.

But I will say that sometimes, to your point, Sometimes knowing about that extra risk factor, getting that nudge is what motivates people to change. I mean, that's just human behavior and human biology.

If somebody is coming in, no family history, average risk, but then I find a polyp, for example, and I say, look, we have this early sign. It's not cancer yet, it's on that path that, you know, there's like a 10% conversion rate to cancer for these polyps.

There's few things more powerful for a lot of people to say like, wow, I should change my behavior. I shouldn't change some of the risk factors that I do have control over.

We don't have to control everything. we can't make that risk zero. But you it is empowering to know that we make those changes. And sometimes just knowing that is the trigger that i think we all can benefit from.

Hey everyone, we're going to get right back to the podcast, but I have an important message for you. If you're caring for somebody with Alzheimer's, any other form of dementia or even what we call mild cognitive impairment, or maybe you've received one of these diagnoses yourself, Or if you are focused on preventing cognitive decline, I want to speak directly to you for just a moment about some serious research that's going on, looking at what we call 40 Hz light and sound simulation.

We've been actually talking about that on the program. Here's the challenge. Not all 40Hz light devices are the same. Most use what's called stroboscopic light, and that is the type of light that flashes, then you can see the flashing.

And that can cause nausea, it can also cause headaches, and if you can't tolerate that, you won't use it. So there is a company called Optosudix, they've solved this problem with a patented technology that still gives you the 40Hz light flashing, but through light that looks and feels quite normal.

It's the device I actually have on my desk when I'm working. And that's why this company sees a 94% adherence rate and significant improvements across various metrics, including mood, energy, focus, sleep, and memory.

And the light is called the EV light, EVY. You can use it as I do when you're working on your computer, when your reading, watching TV, eating breakfast, whatever.

Screening options and colonoscopy vs stool tests

It becomes really part of your day, not just another burden, it's kind of passive in the background. So I recommend giving it a try for 90 days. And if you and your family don't see value in it, then you can return the device for a full refund.

They cover the shipping both ways. You can learn more about Optosudix at optosüdix.com forward slash Perlmutter. you Can use the code to get a $200 savings.

The code is Perllmuter, my last name 26. This is a device that really is risk-free in terms of getting involved with 40 Hertz stimulation. Important information, let's get right back to our podcast.

So in the world of alternatives to colonoscopy, I've always defaulted to the number one recommendation is a colonoscope A, because it is diagnostic, but B, it to some degree therapeutic in that you can biopsy, you remove the polyps, so you get the job done.

As opposed to seeing something on a virtual, then having to go ahead and do the the regular colonoscopy as a follow-up. I mean, my vote has always been just get her done.

Just do it on the first pass. And I think some people are concerned with risk. Is it totally risk-free? It is not. But I, think in good hands, and people doing colonoscopies all the time, you have an anesthetic, of course, as well, generally.

The risk benefit is really in favor of doing this with regularity. Yeah, I completely agree with you. Sometimes people ask me, what would you do if you were in my shoes?

What would tell your mother or sister to do? It's always colonoscopy. Unless there is some risk factor, maybe there's some reason you can't tolerate anesthesia and that's a specific situation.

But you're right that the stool kits, the way you put your stool in a box, email it to a company to send it back, those are actually great for detecting cancer.

They're less good at detecting polyps. And I think the point that a lot of people don't understand is that The bigger public health point of colonoscopies is not to detect the cancer.

We do that, and we're glad when we do, that but it's really to prevent the cancers by getting those polyps and removing them. And you can't do with any other test.

Yeah, and I would say full reliance upon Coligard is also, I think, somewhat inappropriate. I mean, what we see with Colagard, is a fair number of false positives that are very worrisome to people.

And that test comes back positive and they indicate, yes, you need to follow this up with a colonoscopy. During that period of time where they're told that and the colonoscope, these people are really concerned.

So there are a fair number of false positives, not saying that people shouldn't get it. I mean, it's an at-home, do-it-yourself kind of thing, and you get information.

In general, I think it is worthwhile. You grew up the daughter of a gastroenterologist. How did that influence you? Well, it's certainly the reason I became a gastroenterologist.

You know, my dad was a, and still is, he's a neuro-gastroentrologist. So he does what I do, which is we study the gut-brain connection. And that's, a term that, you know kind of came on the market like in the 1990s.

It's relatively new subspecialty as far as subspcialties go. But it was, I mean I think the 90s was really the birth of that field in some ways. and it, was an incredibly exciting time for him because he was talked about his research every day with me and my siblings.

And I've just never seen, I still haven't met anyone as passionate about their work as he is. So he really infected us with that excitement about Jay.

Of course, there was no stigma around talking about poop or talking I came to find out later that not everyone

talked about poop at the dinner table, but he would check in with us and just be like, hey, did you poop this morning?

A lot of dads would ask, how was your day at school? Did you do your homework? He would just check-in to make sure we had had a good bowel movement that day.

And then if we didn't, he'd be What's going on there? When I was a little kid would would tell us about a new neurological syndrome at dinner Every night and I remember him saying, you know You shouldn't drink wine when you get older because you'll get marsha fava bignami syndrome.

What in the heck is that? Well, actually it's That's how so I share your I show your experience. We'll leave it early for you Yeah. So, I have to admit, many years ago, after I wrote a book called Grain Brain, a wrote book call Brain Maker, and it focused on the influence of the microbiome mostly, but things going on in the gut as it related to the brain.

And I had to tell you, it was a very popular book, amongst my colleagues, there was lot of pushback that I was talking about, you know, how medications, especially antibiotics, quality of our water, stress, lack of sleep, et cetera, affected the microbiome and how that could translate into an issue related to the brain.

And that connection was just very, very I think challenging for many mainstream neurologists and other types of physicians to make. So here your dad becomes a neuro gastroenterologist early on.

And how was that early? Was this in a research kind of environment? Yeah. Yeah, I bet he had some similar experiences to you. I think we feel some of that today.

If you think about it, 50 years ago, nobody was talking about the microbiome at all. And now today, it's hard to imagine almost any disease without putting a little bit of that lens of how the micro-biome plays a role.

But in neuro-GI, The way this field, the way we've thought about the gut brain connection for really more than a hundred years, like dating back to 1890s, we thought that connection is being how the brain in our head influences thebrain inour gut.

I don't want to offend the neurologist here, but we talk about this as the brainin our gut, not the second brain, as some people say. But it's on equal footing, I would say, anyway.

You mean you're talking about brain-gut connection, Well, I go back and yeah, yeah. But you know, we thought and we know this to be true through several decades of physiological studies that when we're stressed, when were feeling anxiety, even depression, those things can have these changes in our motility, especially acute stress.

Those studies were done throughout the 1950s, 1960s where we had this experience that we've all are probably familiar with in real life, like where maybe you're caught telling a lie and you get the sinking feeling in the pit of your stomach or like I was a theater kid and like if I blew my lines on stage, like, I would suddenly feel so queasy.

Like I could even think about that time right now and I'll feel that same feeling. Well, what is that feeling, you know? You're doing great, by the way.

Keep going. Appreciate you. You haven't messed up your lines yet. I know.

Family history, insurance, and screening access

Somehow, people have figured out that just thinking, having these thoughts that felt stressful, evoked fear, or evoke anxiety, could cause both the stomach to slow down.

And this is something that I study. The stomach does slowdown and not contract at the regular rhythm that it should. But simultaneously, it caused the colon to speed up and rev up.

That's also why a lot of people, right before their turn at karaoke, have to go to the bathroom. It's a classic problem. But it wasn't until this field really grew and coalesced into neuro gastroenterology that people started to look at the other side of that connection.

And I think that's also around the time that the microbiome really entered the chat too, is like how is the gut, how are the trillions of bacteria living in the got influencing the brain?

And what I remember learning from him, and I saw this too when I entered my own residency training and that was like 2016, people were still thinking about a lot of chronic GI conditions, like IBS, for example.

I think this is still true today for a lotta people, as being largely all in someone's head. Like, you know, the problem in I. B. S. or the problems in a wanna these GI condition like functional dyspepsia, which is a vague term for chronic unexplained abdominal pain, is stress, it is anxiety.

And they were using that lens that we had used for several decades, more than 100 years, And they weren't applying a lot of the knowledge that we now have over several years of research that in disorders like IBS, the problem often starts in the gut.

And the problems start in a gut and actually can lead, and they've shown this in experimental models, it can leave to the anxiety, can to lead to depression and things in our brain and our heads.

But the tests that we do, like colonoscopies we were just talking about, those are very superficial tests. Like we're taking a look at the surface. We're looking at mucosa, which is the lining of the colon.

And when we get biopsies, we are just getting like a little bit of that lining off. Is there inflammation right then and there? What we aren't doing is getting to the deeper layers of muscle where the enteric nerve system lives.

That's the brain of gut. It has a network of millions of neurons that are living but it's buried in the muscle layer. Standard biopsies, standard clinical tests are not going to get any of those abnormalities, or we're not doing the right kinds of stains that we do in research settings.

So it is very simple for a lot of people to say like, well, look at all these people with long-term GI symptoms. All their tests aren't normal. It's probably all due to their stress.

Its probably due their depression. And so for long time, he was going against the grain, so to speak, and him and not just him. You can write a book about that.

Yeah, yeah. And saying like, you know, there are all of these abnormalities, if only we did the right tests for them. The field has changed. Where NeuroGi started in the 90s and when I joined it, There's thousands of us now, which is really wonderful.

It was really like the few, the proud back then. But even then I encounter residents, I encountered medical students who We'll say, oh, the hallmark of IBS and then I guess it's the quintessential example.

So I keep coming back to it. But the Hallmark have Ibs is there's nothing wrong with them. There's actually nothing. You know, and that's absolutely not the case.

We know that the nerves in the enteric nervous system will be triggered at a lower threshold that there'll be a higher concentration of trip V1 receptors in the colon, which is a receptor that that signals pain to the brain.

And there's all of these. Of course, there is microbiome changes. There's just like a myriad of changes and yet somehow the story that gets told still can be one of everything is normal.

This is brain problem and not really a gut problem. It's on your head. Yeah. And it's a hard thing to hear, especially because a lot of our conditions are predominantly affecting women.

There's this whole, of course, cultural piece to saying that and even viewing off into hysteria, which goes part and parcel with a You mentioned a study where students had to have an, I think it was an oral examination or an exam that it wasn't an examination in their mouth.

It was a oral exam. They had a response and how they were noted immediately to demonstrate increased bowel permeability. And the reason I want to bring it up is because The whole notion of bowel permeability, what is the colloquial term, is leaky bowel.

I think it's still not fully appreciated by mainstream gastroenterology, and yet I you're very facile with that term and appreciate what it means.

Gut-brain communication and intestinal permeability

So let's first talk about what does this mean, gut permeabilty? How is it measured and why it matters? And then I guess we should leave alone why the mainstream doesn't really pay attention to it.

Well, I can answer all of the above. I think that the reason… You'll meet two kinds of gastroenterologists. One, which are the neuro-gastroentrologists, who will be like, of course, increased intestinal permeability is real and we've been studying this and there's these studies that I'll tell you about.

But you'll also meet a lot of guest neurologists who are so wary of misinformation around the term leaky gut on social media that they're like leakey gut's not real.

This is not a real thing. And then I think, unfortunately, they may not be familiar with the data around increased intestinal permeability in those links.

And so they'll sort of just like, you know, shut the door to all of all the information. And so I can see why someone might be like, oh, that's not real.

But the truth is that increased intestinal permeability is very real, it plays an important role in our symptoms, a lot of the same symptoms that we ascribe to leaky gut, although not all.

And the study that you're talking about is a great example of how psychological stress can induce these changes almost instantaneously in our guts. And so there was a group of students who had to defend their college thesis in front of this panel of judges, and they measured their intestinal permeability in the moments leading up to having to give that oral exam and then afterwards.

They found, of course, that their levels of stress went up, their anxiety went, up their cortisol went. Then so too did their intestine permeabilty after the exam was over, suddenly that intestinal permeability, those cells and those junctions closed again.

And they felt a lot better and a a of relief. The problem is that I think we sometimes have people who come in and they say, I feel really bloated. I fell really ill or like lots of different foods give me all kinds of problems.

They'll see online, like I'm checking all the boxes for leaky gut and it's possible that intestinal permeability is playing a role in those symptoms. It certainly could be playing in pain.

We've seen that in studies. And for me, the bigger question is, let's not stop there at saying intestional permeabilty is our diagnosis per se. Let's ask ourselves, If that's what's going on, and I'll be honest, I'm sure you know this, we don't have a good way of testing for intestinal permeability in a standard clinic.

We have four different ways we can do this in the laboratory and that has been used in studies. But for me, the more important question is, let's assume you're having these increased rates of intestino permeabilty.

Let's ask ourselves why. What are the main things that we know that have been well studied that can cause it? And

let's take them out. Let just eliminate them from the picture and see if you feel better.

And for me, those things are stress, which, of course, is easier to talk about eliminating than actually eliminating. But certainly, psychological stress and physical stress can do that.

Ultra-processed foods have been studied to increase intestinal permeability, alcohol, poor sleep, all of the things that are actually quite boring. You've heard from your doctor a million times.

All of those things do modulate your permeabilty. And one thing I sometimes tell patients, because where I practice, I'm a tertiary center, so I am often the third or fourth opinion for people who have long-term symptoms that they can't explain, whether that's pain or bloating or difficulty with their bowels.

Sometimes I say, let's just do a full reset. And what I am trying to do is get at strengthening and fortifying their gut lining, where I stay for two months, we're not going to drink any alcohol.

We're going, to the extent possible, going eat whole foods. To the extend possible we are going avoid NSAIDs. However much possible I want you to exercise and reduce your stress.

two months of doing all those things at once, we rarely do opt, try to optimize all the things that once people say, yeah, my gut symptoms got 30, 40% better.

I'm not going to tell you like I always get people a hundred percent better, but I anecdotally, a lot of people get a better when they do that. And then for me, I say okay, there was something in what you were doing before we did this experiment that was probably triggering at least a good portion of these symptoms causing that intestinal permeability, which we know can lead to local and sometimes systemic inflammation.

Let's see how we can make this sustainable and make it a long-term pattern. Hey, we're going to get right back to the podcast, but I do have an important message.

You know, for decades we've been told that our genes are basically our destiny as it relates to health and that everything's locked in place, predicting even our future brain health.

But let's be clear, your DNA isn't a verdict, it's a roadmap. And I'm talking to you today about 3×4 genetics. I actually described them in the new book Brain Defenders.

And this is a committee that helps you understand your genetics, what you've inherited, and I think more importantly, how your daily choices can influence how those genes are actually expressed.

In other words, you can control your own genetic expression. And, you know, that matters for your health and it really matters your brain health, including things like memory and mood and cognitive resilience.

You may carry genetic markers associated with cognitive decline, like as we've talked about APOE4, but possession doesn't equal expression. your lifestyle, your nutrition and metabolic health, all the things that we talked about here on the podcast can powerfully influence which genes are turned on and which stay quiet.

The 3×4 genetics test looks at how your genes impact brain function at a cellular level and, which then through the 3X4 health journey, in which they provide you, guides you through a clear and a science-backed program focused on inflammation, methylation, oxidation, oxidative stress, things that we routinely discuss here on the podcast that are the key drivers of basically what makes a good brain go bad.

And we have spoken with the team at 3×4 Genetics and they were able to get a special offer for our podcast community. So head on over to 3X4Genetics.com and get that special offer and start really your personalized brain health journey today.

Let's get your genes working for you and let's go back to the podcast. You just said something I think that was

really important and I don't want it to be missed and that is that how this gut permeability relates to systemic inflammation.

And when we recognize that across the spectrum of chronic degenerative conditions that the World Health Organization now characterizes as the number one cause of death in adults on the planet, that inflammation is playing a central role.

So I think it's fair to say then that these are important dots to be connected between gut permeability and the mechanism that underlies the most common cause of death on the planet.

I this raises our understanding of the importance of identifying gut-permeability, and then dealing with it. We've been looking at research for an awful long time that has evaluated the levels of antibodies created against lipopolysaccharide, or LPS, which shouldn't really be present.

Lipopolyacchoride is, for the viewers, it's the covering over gram-negative organisms in the gut. And when it leeches its way through a permeable gut lining, which it shouldn't, then it can be measured and antibodies that our bodies produce against that can measured as well.

So when we see elevated levels of these antibodies and of LPS itself, it's an indication of permeability. These elevated level are seen to correlate with Parkinson's and Alzheimer's disease and certainly with multiple sclerosis.

You know, this notion of hyperpermeable or increased gut permeability, call it leaky belly if you must, but it's really fundamentally so important. So you're right in the epicenter right now of a much broader story of being related to chronic degenerative conditions through this permeabilty issue.

when you contextualize it like this, it really kind of makes you want to have these conversations with, you know, kind more mainstream, towing the line gastroenterologists who don't really appreciate how fundamentally important this is because, and I think this your interview and speaking too much, but the point I want make is that, okay, then ask yourself, what are all the issues that relate then to this increased permeability?

And diet is certainly on the top of the list. You mentioned sleep, you mentioned stress, You mention other environmental issues that are important. But you know, like Anne said, taking non-steroidal anti-inflammatory drugs.

and H2 blocking drugs as well, acid blocking drug. Changing the pH of the gut is not necessarily a good thing as it relates to the diversity and functionality of our microbes.

So that said, when we look at data recognizing a dramatic increased risk of dementia and stroke in individuals who chronically take either NSAIDs or these H-2-blocking drugs, we have to pay attention to what's going on in the that gets us to a preventive mode.

But how incredible that smart people like you are now making this information so available to everybody. So let's get back to the remove and replete and replenish what's been called the 4R program as it relates to gut.

And if you can, maybe reveal how one could assess gut permeability in a clinical setting. Yeah, there's a couple of different ways that we… Well, I'm sorry.

Let me rephrase. In a standard clinical setting, we don't actually have a great way of assessing intestinal permeability. There's actually not a standardized test.

A research setting there are a few tests that do and some involve us directly getting a biopsy and doing different stains and trying to look at those tight junctions.

Inflammation, LPS, and causes of leaky gut

And by tight junctions for anyone listening, what I mean is the gut is lined with cells throughout that usually are very closely opposed to each other.

And even they have little gates that have cells and molecules that hold them together. There are some tests, again, that are more in a research setting that can measure pieces of those gates floating in the blood, like zonulin, for example, is one.

And then there's also what they did in this study, looking at the students who are having this oral exam, they had them drink this non-absorbable sugar that in theory, you know, should not be something that gets excreted, and then you can measure the kind of the before and after in the urine.

None of these have made it and been fully validated in a clinical setting because we don't know quite yet how that correlates to a particular phenotype or a particularly disease state.

I think this is not because it means intestinal permeability isn't real and isn t valid. It's more like we've just gotten ahead of where the research has taken us yet and I hope and imagine actually it might be part of a clinical test that we're going to do in the next 10, 20 years once we hone it down because each of these tests is actually, they each have flaws and none of them are perfect.

But all of which is to say that for me in my clinic, when someone comes in worried about leaky gut, That's not the test. I worry less about the tests.

If you have these risk factors, we can assume you haven't. Leaky gut is actually, through the lens of intestinal permeability, you and I, right now, during our 24-hour day, are going to have increased intestino permeabilty based on all these different things.

Exactly. And if we just say, let's assume that you had it, because we know that, and let say we want to, figure out how much of that could be contributing to your symptoms.

Let's just take the steps that would reduce it. The reason I feel comfortable saying that is because the sets that, in theory, reduce your intestinal permeability are also things that are just good for you in general.

It's not like I'm telling someone to do something that I like outside the science or a waste of their time or money and so I find that people have good success with that and you're right too that you know while there is this physiological fluctuation our permeability throughout different things that happen during our day meals um certainly stress and like marathon runners are like really well described to have high amounts of intestinal permeabilty not always a good thing um a lot of different diseases can be linked back to what may or may not be entering us through our guts and through the integrity of our mucosal barrier.

And in fact, this is something I study in Parkinson's disease. But of course, probably in terms of you mentioned LPS, there's, I think, the most well-understood, in my opinion, understood model of how intestinal permeability can cause disease is liver disease, like your liver, everything that comes through your body.

through your gut is going to first pass through you liver. You know, it doesn't immediately enter your systemic circulation. It actually goes to your portal veins and it hits your liver…

Your liver over time, if it is continually exposed to toxins, It does a great job. Most of the time it does really well. But over a time if you keep having these hits, like you drink a lot of alcohol, that's the classic one.

it will develop so much inflammation that it just cannot handle the load anymore. And then you start to see this breakdown where more of those toxins, then get past the liver and they enter the systemic bloodstream.

And then the scar tissue starts to form and your liver less and less can do its job appropriately. So we know in several other disease states that you can link back the problem ultimately to intestinal permeability.

Then further, the triggers of that intestino permeabilty, which often can be alcohol, can go to processed foods, it can all these things in our environment.

Yeah, you get to be hard pressed these days to find an upside of alcohol. I mean, people talk about, well, it makes you more social. Where's the benefit of that?

I don't know. Getting back to the bowel permeability issue, though, I think clearly things that lead to dysbiosis or changes in the diversity and functionality of our gut bacteria plays a role in increasing permeability.

Loss of species like Lactobacillus plantarum, for example. That said, where I'm going with this is tell us what you feel the role would be for, let's start with probiotics, but I want to make sure we cover prebiotics as well.

How effective would a good probiotic be then in an individual with these type of issues? Yeah. That's a really good question. In fact, that's like a very common thing that people come to me with.

They'll want to try supplements and probiotics. And the data is not as good as I think we want it to be in GI. We wish, and I hope the field gets there in the next couple of decades, hopefully sooner.

But I wish I could say that personalized microbiota directed therapy is ready for prime time. And that means like, you know, it can be a range of things, but it could be taking a probiotic, especially when it's one that seemingly is targeted towards whatever abnormalities someone might've detected on your own individual microbiome through like a stool sample.

But we're just not quite there yet. is the rare case in my world, somebody would come to me and say like, I tried this probiotic and I feel really confident that it's helping me.

And I'd feel a lot better. I think that when that happens, i'm happy for them because pain is difficult to treat. Right. It's great for pain if it's affecting the pathways in your brain.

So I don't rip it from people's hands, but I will say the most common scenario for me in a tertiary center where people have tried and failed a lot of things is that either they will have try probiotics and they'll fail, or they're be on a probiotic and I'll say, look, did this help?

How much better do you think? And they say… Honestly, now that you're asking, I don't know that it's doing anything. I think if you don t know, then it s helpful to just look at the data, for everyone it is helpful, which is that formally the American Gastroenterological Association does not recommend probiotics for most indications.

We do for very specific things like pouchitis for example, and inflammatory bowel disease, but the date is not there. One area that is very close to my heart is what about probiotic or even something like fecal transplant for Parkinson's disease because Like with a lot of diseases, we know that there are these different…

Well, you got to slow down a little bit. You just mentioned fecal transplantation for Parkinson's disease, fecally microbial to FMT. And I think a of our viewers right now are going to raise their eyes and pay close attention to what this is all about.

Testing permeability and the 4R approach

Why would there be any justification for the consideration of a feical transplant from a healthy individual to one who has a Parkinson diagnosis? Yes.

Okay. So let's take a big step back. Fecal transplant is this idea. We've talked about probiotic supplements where you might take capsule, for example, that's the most common thing that is supposed to contain live bacteria.

The data is not great universally for most conditions. But fecal microbiota transplant is like taking this idea of changing your microbiome even further by saying, we're going to, in some form, and there's different ways to do it,

but we are going insert the microbiomes of another person who maybe has the condition that you want.

Maybe they're just a healthy person. And you have some disease state that we think could be improved if we change your micro biome like this. The way that we do this in the hospital is we'll take you for a colonoscopy.

This is going to sound so silly, but it's really as simple as we just spray the poop of somebody who's a healthy donor into you. And that works really well for conditions like C.

difficile infection, which is this bacteria that can cause a really horrible infection. FMT, fecal microbiota transfer works, really, well there. Because in certain conditions, metabolic disease, Parkinson's disease.

We've seen these associations where there seems to be a change in the kinds of species, the proportions of those species compared to healthy people who are maybe the same age, same gender.

there's often this idea that, okay, the microbiome has to play a role. And I think we all feel pretty confident that the microbe is playing a roll. We've done so many clinical trials, and we, I mean, people in this field, so, many, clinical, trials to try to treat irritable bowel syndrome with fecal transplant, to, try, treat Parkinson's disease with Fecal transplant.

The outcomes aren't great. People don't actually do much better. That doesn't mean that the microbiome isn't playing a big role. My whole lab is devoted to studying how the gut can influence Parkinson's disease.

But I think what it's telling us is that when I describe the micro biome, I about it as a garden and you have these flowers and weeds that grow. And I sometimes like, for example, in Parkinson, we might say there's too many weeds, but we want more flowers.

So let's sprinkle a bunch of flower seeds on it. That's what the FMT could do. Maybe that's probiotics do And I think the problem with all of these therapies is that The weeds may just be growing in response to something else in the environment that we're not fixing.

Like maybe it's because they're getting enough sunlight. Maybe it is because the pH of the soil is wrong. So just because we sprinkle the right seeds in there temporarily, maybe those seeds can't grow.

They just don't thrive. And I think that's the kind of inherent problem with the way we are approaching it now. Not to say that you shouldn't keep trying, but I just think we aren't there.

most robustly studied thing to do is to get to the prebiotics, which you mentioned. So pre biotics are what we are feeding those gut microbes. And so usually in this is true in anything from IBS to Parkinson's, I say, let's focus on the foods.

that we're eating, and let's focus on the environment that were creating for those microbes. And those things, we have the epidemiological evidence for a lot of them, at least, in a of the mechanistic evidence.

Those things we know are linked more strongly to the outcomes and the data is just better than what we right now for things like probiotics. Wow, so you are researching then the gastrointestinal relationship to Parkinson's.

That's, it seems like quite a leap, but you know, GI symptoms in Parkinson has been described for over a hundred years. In the original essay by James Parkinson, It wasn't really mentioned, But I think, you now, more recently it has, been and I, think you, know some really interesting things were discovered over the years, for example, the pretty significant reduction in risk of developing Parkinson's in individuals who've had their vagus nerve cut.

Years ago, in my day, my dad used to say that, now I'm saying it, back in day for ulcer treatment, it would be a vagotomy pyloroplasty. In other words, operating on the pilaris and cutting the vagous nerve, i.e., cutting what was thought to be the cause of the excess acid, before H.

pylori was identified. So there became this group of people who underwent vagotomy, had their vagus nerve cut. And when you follow them, they had a significant reduction in risk for developing Parkinson's.

What did that tell us? Well, the interpretation was one that said something is going up the vagis nerve and making its way into the brain. Maybe it's the precursor for this misfolded protein or alpha-synuclein.

But beyond that, the idea of a fecal microbial transplant as a way of helping a Parkinson's patient, I think targets the fire, not just the smoke as a treatment.

In other words, we have pretty good treatments for rigidity and for tremor and more constipation in the participation. They're very valuable. There's no one that would say otherwise, but we're not treating the underlying issue, which is the degeneration of those dopaminergic cells in this substantial Niagara until this year.

Uh, well, uh, calendar, and not this calendar year, of 2025 published in the New England Journal of Medicine was a powerful study, the first of its kind, that looked at treating Parkinson's patients, a group of 130 patients with a GLP-1 agonist ozempic-like drug.

they stop the disease dead in its tracks in terms of its progression. For me, that's game changer. What did it do? It targeted metabolism. And we know that there's pretty good research suggesting that metabolism is affected by the microbiome.

So it really lends itself or leads in very nicely to what you're researching, that the issues related to why a fecal microbial transplant might be helpful have to do perhaps with metabolism and the mitochondrial function within the brain in those cells in the substantia nigra.

So, gosh, I look forward to hearing more about what your doing there because I think this could be really very, very exciting. demonstrate metabolic improvement in these patients.

You know, if you're a type 2 diabetic, you have a 40% increased risk of becoming a Parkinson's patient. If you can demonstrate improvement and insulin functionality and glucose tolerance, I think that you are going to really be supplying one very big piece of this Parkinson puzzle.

We know that, you know, people watch the episode here with Dr.

Probiotics, prebiotics, and fecal transplant research

Ray Dorsey that environmental toxins which are threatening to the mitochondrial function of these cells playing a role. But again, I think underlying all this are metabolic issues throughout the body for which fecal microbial transplant might be really, really helpful.

We were, dare I say promoting, but at least investigating FMT in autism many years ago and then were I think gratified to see a study, collaborative study University of Arizona with Dr.

Alessio Fasano from Harvard, demonstrating significant improvement in these kids, at least in terms of their GI issues, which are rampant in autism spectrum disorder.

Very interesting. Let's go back to your book. how is it that people, forgive me, I haven't even got to any of the questions I had written down for you so far.

And we're now 53 minutes into our time together. But you mentioned that, people can be constipated and there can a lot of different reasons. So let's just flesh out a couple of common reasons that can have difficulty with their bowel movements and they are infrequent.

Yeah. So I think constipation sounds like it's like one condition, one thing, and it actually could describe a lot of different problems going on. When I'm trying to explain consti-patient to my patients, I describe it like trying get

toothpaste out of a toothpaste tube.

Sometimes the issue is things that are causing us to not… I know, picture it. Stick with me. I am there. Go ahead. So sometimes the issue is you're not squeezing hard enough and there's an issue with the propulsion.

And maybe it's something that we need to do to augment the muscles of your colon to produce those contractions. Maybe it related to your Valsalva maneuver that all do.

Um, maybe its an issues with softness of the toothpaste. I call that the pliability and maybe that's again like are we eating enough fiber? Are we drinking enough water?

Is there something like the tooth paste itself is too hard, too pebbly, it is not coming out? But a very underappreciated part of the story is the pelvic floor.

And that is what I liken to saying, you squeezing as hard as you can, but you've not taken the cap off the toothpaste tube. In about one in three people who have what we would call constipation, they've tried different laxatives, failed to get better with it, the issue is pelvic floors.

And what happens in a lot of people over time is that, for example, maybe at some point in your life, you had constipation for another reason. Your gut was moving slowly.

You were eating a lots of ultra-processed foods. So you didn't get enough fiber. And so you trained your body over a time that you have to strain a much harder to have a bowel movement.

Over time, as you strained and straining, the muscles in the pelvic floor started to reshape a little bit and the sphincters got a bit more toned. Eventually, they work against you.

even when later on in life you start to eat more fiber like you discover legumes and beans and you go vegan but suddenly now you have this closed door and the caps not coming off and so it's very common that people who have been on two or three different laxatives once we treat the pelvic floor then somehow you know like often they actually don't need that many laxes anymore maybe they just need one or none And the issue is not that the whole time.

So those are the three things that I tell people that we need to investigate, think about, and see which one is the problem. And often, you know, it's like not just one.

It may be of two, maybe of all three. But until you think of it a little bit more holistically, You might not understand why your friend can take Miralax and they do great, but you can like six Mirallax doses in a day and nothing happens for you.

That's because you probably don't have the same thing going on. What does it mean then we treat the pelvic floor? What do you do? Yeah, so the kind of good thing, I actually frame it this way.

When somebody comes to me and we make a diagnosis of pelvic floor, we call it pelvic disinertia. It's a fancy word to say that the muscles are either paradoxically contracting or they're not generating the right amount of pressure.

I should tell them this is kind good news because we just treat it with pelvic-floor physical therapy. We treat with a special kind physical theory called biofeedback.

But that's been shown in studies to be about 80% effective after about two to three months of physical therapy. So in the scheme of your life, you go to this physical, therapy, yes, it's a little weird.

Yes, It's little awkward, but it is two or three month of life for the next several years of not having to take a medication. It is actually kind of like a big win and it actually very treatable.

Even in my Parkinson's patients, we see this and we really good success rates with it. You discuss in your book the short chain fatty acids, and we've talked about short-chain fatty acid as a very important product of the gut bacteria that has effects throughout the body.

But you also talk about it in terms of anorectal sensitivity. Yeah. And how does that relate? That's news, I think, to a lot of people. I mean, we're trying to boost our short-chain fatty acids by taking a lotta prebiotic fiber, but is this a potential downside?

No, this is an upside. So I think that the beneficial short chain fatty acids like butyrate have been studied as improving in some ways the capacity. There's two different aspects to this, but improving our capacity to sense and respond to stool that's sitting there in the rectum.

And that a big problem for the about 7% of Americans who deal with fecal incontinence. That's a lot of us. And they've done these studies where they found that actually just fiber supplements like psyllium can help improve that sensitivity so those episodes don't happen as often.

We think that they're being mediated by the short chain fatty acids which improve the sensitivity of those nerves. There's a different type of sensitivity that we sometimes talk about, which is not what we think happens with short-chain fatty acids like butyrate or others.

Which is that if the nerve cells that sense pain and send pain signals up to the brain become more sensitized, that would be a bit of a problem.

Constipation, pelvic floor dysfunction, and bowel frequency myths

But we actually think that the short chain fatty acid have anti-inflammatory effects and don't do that. There are other things that can make that pain signaling worse, but the message here is eat more fiber.

So what is the one biggest myth that you see in your practice as it relates to bowel movements? Well, you mentioned this at the very beginning. It is that people should have one bowel movement a day.

Like truly, that is biggest. And I think I know why that myth took flight initially, which is at our colon certainly is primed to have a bowel movement at least once in the morning.

Every morning, a lot of factors come together that are optimized for a good bowel move. And that is that your colon actually operates very, very strongly on a circadian rhythm.

So unlike a lots of other organs in your body, it almost goes completely quiescent at night. There's very little activity. In those first one or two hours upon waking, the nerve cells in gut have this circadian entrainment it wakes up and naturally produces very strong contractions that you very rarely are gonna get the rest of your day.

You're gonna a little bit of it when you eat a meal, you're going to get a bit a it if you exercise, a you drink coffee. And often, we're doing all of those things in the morning.

We're taking the dog for a walk, having our first cup of coffee, and now we've woken up, so it's a perfect time to have a bowel movement. But that doesn't mean that's the only way to live and that is the best way.

Because what I often tell people, and I'm sure a lot of listeners could relate to this, once you start meeting your fiber goals, you're going to poop more than once a day.

Unless you are working against it, because it's just a softer… You're gonna have softer stool, which is a really healthy and good thing. So some people will say, I've started eating a little more fiber and now I have to go to the bathroom three times a I would actually say that's normal.

This is like very healthy. And as long as it's not bothering you, like great. Three times a day would be considered

within the range of normal Americans think that having a bowel movement every third day or up to three times today could be normal, so you're not weird if you are going after every meal.

That's actually like your own body. It's called a gastro ball reflex. You can still be weird for other reasons. you can have lots of reasons, but it is not going to be that.

How can someone improve their bowel movements immediately? Stop taking your smartphone to the bathroom, guys. Not good for you. It can increase your risk of hemorrhoids.

I know that's a hard message to hear, OK? OK, here's the next question. If listeners want to have one important message about the gut-brain connection, what would it be?

It would be to start treating your gut like a brain. And that means showing it the same respect you show the brain in the head and thinking really carefully about all the junk that you put inside your body because it's hitting not just this plumbing system, but it is really hitting the Dr.

Patrice, thank you for spending time with us today and congratulations on your book. Somebody had to write this book and you did it. I appreciate you.

No, you really did. And I can only imagine what it's like to be, well, I don't have to imagine. When I wrote Grain Brain, it got a lot of pushback. But thank for doing this and I think all of our viewers are grateful for the time you spent with this today.

This was a delight. Thank you having me. All right, hope to see you soon. Dr. Pasricha, thank you for breaking the long held silence about a topic that affects really every human being yet is so rarely discussed with the clarity and compassion that you brought to our podcast today.

You know, your work reminds us that gut related symptoms are not all in our heads, but neither are they separate from the brain. fully integrated. You know, this gut-brain connection is actually very, very real.

And understanding that integration may be one of the most powerful tools that we have for improving not just brain health and gut health, but overall health as well.

For everyone listening, I highly encourage you to read the book, You've Been Pooping All Wrong. Maybe you have, maybe you haven't, but it's still worth reading.

This is a science-based, practical, and surprisingly liberating read. Thank you for joining us today on The Empowered Neurologist. I'm Dr. David Perlmutter,