



Practical Tips for Optimal Digestive Health

Guest: David Brady

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Dr. Mark Menolascino: Thank you for joining us for this installment of the Women's Heart Health Summit. I'm honored to introduce you to my friend and colleague, Dr. David Brady. Thank you for joining us, David.

Dr. David Brady: Hey, Mark, it's good to be with you. We've been good friends for a long time, so this is just like having a regular phone conversation. So it's great.

Dr. Mark Menolascino: And you just returned from an international lecture tour, is that correct?

Dr. David Brady: Yeah, I was lecturing over in Dublin, Ireland, and also in London. There's a lot of interest, particularly from the health care providers over there, in the whole functional medicine model because obviously their internationalized health care system, which, like our health care system, is really good at certain things and not so good at other things, particularly complex, chronic disease. So they're really taking keen interest in the whole functional medicine movement that is really, I guess, grounded here in the United States but is really traveling very rapidly internationally.

Dr. Mark Menolascino: Well that's one thing I've always respected about your work, David, is you take really complex clinical problems and break them down into an individualized approach. And the reason I really wanted to have

you join us is I do feel that a lot of the work that you do in those approaches has a lot to do with the outcomes of heart health. So I'm looking forward to our time today.

Dr. David Brady: Yeah, absolutely. I'd love to be able to give you any of my experience in kind of dealing with patients and their journey towards optimal health. I have a lot of patients who see me just for that purpose. But then again, like you, I have a lot of patients that are coming in with really debilitating, chronic, very complex medical conditions, have been to a lot of other providers, all kinds of different specialists and even many other functional medicine providers. And they come eventually and see docs like us. So we see kind of the most difficult cases, I think, which is a challenge and a privilege. But it is never dull.

Dr. Mark Menolascino: That's correct. And it seems that our next generation of clients is hopefully going to be people that don't want to end up sick like that or end up with heart disease or heart health problems.

So let me do an introduction for you, David. Dr. David Brady has over 26 years of experience as an integrative practitioner and as an academic. He's a licensed naturopathic medical physician in Connecticut and Vermont and is board certified in functional medicine and clinical nutrition. Dr. Brady's a prolific author of medical papers and research articles on fibromyalgia and has dedicated a large part of his professional career to helping people recover from this mysterious disorder.

He currently serves as the Vice President for Health Sciences, Director of the Human Nutrition Institute, and Associate Professor of Clinical Sciences at the University of Bridgeport in Connecticut. He maintains a private practice called Whole Body Medicine in Fairfield, Connecticut, is the chief medical officer for Designs for Health, one of the leading supplement manufacturers, as well as Diagnostic Solutions Labs, a leading laboratory analysis company. He's an internationally sought after presenter, as you mentioned, on nutrition, functional medicine, integrative medicine, has appeared on the speaking panel of the largest and most prestigious conferences in the field.

Dr. Brady's a highly dedicated champion and advocate for patients suffering with a fibromyalgia diagnosis. He's the author of the book *The Fibro Fix*, which I have two copies on my shelf, one signed by you, thank you. One's actually on loan to a patient right now. And he's hosted the extremely popular informative online Fibro Fix Summit. And you can learn more at drdavidbrady.com, also at fibroix.com and thefibrofixsummit.com. So again, David, an impressive

biography, an impressive background. And it's just always an honor for me to hear you speak and the way that you tie all these seemingly disparate ideas of individual's health into a common thread.

Dr. David Brady: Yeah, well thank you, Mark. It's interesting. I do a lot of speaking and presenting and have for a long, long time. And a lot of people ask me how I developed my style in doing that. And I think it's a weird amalgam. It's a little bit of being a functional medicine doctor and nutritionist, a little bit being an engineer and trying to make complicated things simple, and make them work, and a little bit being an old touring musician, rock and roll musician. So you throw that all together, and that's what you get, I guess.

Dr. Mark Menolascino: Well we talk here at our clinic about the symphony and the harmony, how a woman needs to have balance of the pituitary, thyroid, adrenal, hormone, gut access to allow her symphony to come into harmony. Where do you start when a client comes to see you with a seemingly complex problem or if you want to try to dig in and provide a cardiac benefit? What's kind of your overall approach with someone like that?

Dr. David Brady: Well it's a good question. Like you, and like pretty much every ambulatory care provider in the United States, the vast majority of the patients we see are women, right, because women are much more likely to seek help for trying to improve their health, whether they have a significant problem already or whether they're trying to be proactively healthy. It's much more common for a woman to do that than a man. Usually a man is coming in because there's a woman in his life dragging him by a nostril, or there's something involving a power tool accident in the garage, or something related to their genitalia. Otherwise they're not coming in.

So we see mostly women. And women are frankly more complicated than men. They have much more complicated hormonal systems. They have much more complicated immune systems. And we'll talk about that a little bit, hopefully, a little later. So even though we have to sometimes get over our maleness and our male bias and how we approach women patients because I do think that the medical establishment, by and large, over its development in the 20th century, has been all too dismissive of women as patients, women as study subjects.

And luckily, or I guess thankfully, that's all changing. There are many, many, many more women physicians than there were 30 years ago. And I think that's a good thing. But here we are struggling to try to help a lot of women get better. And I think, like any other condition, particularly complex chronic

conditions, it all starts with their story, right. You really have to spend time. I mean one of the problems with the current standard medical system is the data shows you've got about six minutes with that provider.

And what are they going to do? If you have a complex chronic condition, they're not going to hear your whole story. They're not going to hear all the elements of your daily life that are contributing to your health condition. They've got six minutes with you. They're going to hear a couple of things, a couple of magic words. They're likely going to engage in one of the most efficient forms of communicatus interruptus known to humanity, which is the prescription pad, right. They're going to pull it out, write down one or two things, and hand it to you.

And now they've done something. They have permission to leave the room, right, to go to the next patient and do the same thing. And it's not that these providers are bad people. They're trying to do the best they can. They're really smart people. They're just kind of locked in a system.

So to do the kind of model of medicine that you and I do, it takes a lot more time. And you have to get to know people a lot better. And to do that you almost, unfortunately, have to jump outside the system. You have to take a leap of faith and blow it all up and do a whole other practice model. And that's what we do in the form of functional medicine.

So we follow something called the functional medicine matrix, right. It's sort of a way we've come up with to evaluate complex patients and to look at the totality of their existence, right. So a lot of it comes down to what was their upbringing like? What kind of stress were they under? What are their past experiences that have shaped their current state? How does that contribute to their health or lack of health? Detailed history on what did they eat, when did they eat? What kind of social support network do they have? What are the different things that are bothering them?

So they're concerned about heart health, as they should be. Why? Do they have certain biomarkers or certain things that have been detected by other providers before? Do they have a family history? And if so, what is that family history? So there's a lot that goes into it. But I think in medical school, in the first day, I think they tell you that proper diagnosis is half the cure and that the most important element in the diagnosis is the history, is sitting and talking to someone. If you talk to somebody and you're really a good listener and you don't just do all the talking yourself, I think 90% of the job gets done right there. Before you get the fancy diagnostics and imaging and lab tests

and all of that, you can pretty much, particularly practitioners with a lot of experience, like we have, you pretty much know.

Dr. Mark Menolascino: You're right. You're right. The story really does tell the story. And we were taught in medical school that half of what we learn in the next four years will be proven wrong. We had to figure out which half. We were also taught how to see a patient every seven minutes for eight hours straight. And that connection is where you don't hear the story because the story is the story. And when you do hear that story, you really do get a deeper insight. One of the classes that I'm most interested in is autoimmune disease. And one of your expertise is in working with those clients as there's such a huge preponderance with women with autoimmune diseases. It's something like 11 times more common in women.

Dr. David Brady: Yeah, it depends on the autoimmune disorder what the ratio is. But with very few exceptions, it's strongly slanted toward females, yes.

Dr. Mark Menolascino: And our current therapies are not very good, not that effective, and are potentially dangerous, so looking at a different model that incorporates lifestyle medicine. The other issue is the autoimmune link and cardiac disease. There's a much, much higher risk of cardiac disease, particularly in women, particularly with autoimmune disease. How do you see some of this cross relationship of the inflammation of autoimmune disease and the inflammation of the heart kind of tying hand in hand with lifestyle medicine particularly?

Dr. David Brady: Yeah, well I mean you just hit it. I mean the core of a lot of these chronic complex diseases and metabolic states is a chronic state of inflammation. And we know the majority of cardiovascular disease is driven fundamentally... underlying the pathology is a state of inflammation. And it was sold as oh, it's cholesterol. It's the number. It's really not. It's having maybe risky type of lipo particles, risky LDLs with certain characteristics, but bathed in an environment of inflammation.

Then you're setting the stage for atherosclerotic disease and coronary artery obstruction and cardiovascular events: heart attacks, strokes, and so forth. But you really have to have that inflammatory component there. And if you have an autoimmune disease, by definition you have a systemic inflammatory situation going on. So you might look at cardiovascular disease, which is not thought of as an inherently autoimmune disorder per se, but it's an inflammatory disorder. If you have an autoimmune disease that's driving inflammation, you're setting the perfect stage for cardiovascular complications

related to that autoimmunity. And I'm not convinced that cardiovascular disease doesn't have any autoimmune elements because I think, in certain circumstances, it certainly can.

But women are way more, as you said, afflicted by autoimmune disorders. And autoimmune disorders in general are rising at epidemic proportions in the western industrialized countries, not so much in the underdeveloped world, moderately in the developing world as they take on western diets, western practices of hygiene, and other elements of our existence and lifestyle.

But the woman's immune system is a lot more complicated than the male's, by necessity, because women have to maintain a very robust immune response to stay healthy. But they also have to have a higher degree of immunotolerance than men because they, at times in their life, may be carrying a foreign entity inside them known as a fetus. So men's immune system would not deal with the fetus. It would freak out, right.

So women, just like their hormonal system, are a lot more complicated. Their immune system is a lot more complicated. And at least theoretically that is what makes women sometimes more susceptible to certain autoimmune conditions. For instance, we know that estrogen plays a role. 17 beta estradiol, a fraction of estrogen, is known to actually activate T cells of the immune system. And it can activate certain T cells that can produce inflammatory cytokines like IL-17, which can be very instrumental in driving autoimmunity.

So we don't know all the answers on why females are more affected by autoimmunity. But we absolutely know they are. And in general, autoimmune diseases - I'll give you an example. Inflammatory bowel disease, a classic autoimmune disorder of the intestines which can cause things like ulcerative colitis, Crohn's is in that category, and so forth, at the turn of the 20th century, a little over 100 years ago, in the western industrialized countries or the countries that were industrializing at that time, the incidence level as far as we can determine it for inflammatory bowel disease was about one in 10,000 people. Today it's one in 250 people.

So that's an amazing difference. And you see the same kind of meteoric rise in the epidemiology of autoimmune diseases across all autoimmune diseases. It could be diabetes. It could be lupus. It could be MS. It could be autoimmune thyroiditis, like Hashimoto's. It could be celiac disease. Whichever it is, it's rising at incredible proportions.

And it's not just genes. It's not just genetics. I mean today we want to blame everything on genes, right. But genes don't change that fast. Our genes are not all that different than they were 100 years ago. But the incidence of autoimmune disease is orders of magnitude different. So there's something dancing with our genes in a different way that's creating the problem. So it's clearly an environmental issue. Something's changed about the environment we bathe our genes in. And there are a lot of hypotheses about that.

When you look at the rising incidents of autoimmunity, it's so rampant that most epidemiologists would look at the graphs - they're going to like this - and they would think uh oh, there's an infectious outbreak going on, because that's the only thing that rises that fast. And indeed, as science has progressed, we're understanding autoimmune diseases, in many cases, as an infectious disease because our immune system is reacting to external or environmental microbes, be they bacteria, viruses, fungi. It's reacting to the lack of certain microbes, like parasites, like helminths.

So we can talk about some of those relationships and why the landscape has changed. But it's really, really an interesting thing to follow. And now, with the emergence of understanding to a greater level the human microbiome and particularly the gut microbiota, all those bugs that live in us on us and around us and how they interact with our physiology, it is actually unlocking some of the mysteries behind why some of these things are occurring.

Dr. Mark Menolascino: You bring up so many great points. And you're talking about autoimmune disease and cardiovascular and is heart disease really an autoimmune disease, in a way, attacking the inner lining of the blood vessel. They're now developing the same drugs they use for autoimmune disease, called monoclonal antibody inhibitors, to combat high cholesterol levels. It's about a \$25,000 a year therapy. But it's interesting how you were seeing a lot of these crossovers. And there does seem to be an epidemic of heart disease and an epidemic of autoimmune disease. And the crossover may be the toxic environment that we live in.

You were mentioning this genetic drive. And one of the most powerful things for our listeners is this idea that you're not doomed to be your parents, that you're not doomed to be the genes that you carry. You have the ability to turn on some good ones and turn off some bad ones. And that's this concept of epigenetics. How do you use genetics in your clinical practice? And how do you describe it with your clients that helps them really want to jump in and make the lifestyles changes necessary to keep the bathing of the genes clean?

Dr. David Brady: Oh, man, that's an interesting question. As practitioners these days we all have patients who come in with their 23andMe raw data, right, and slap it on our desk. And it's that thick. And hey, can you look at this. This is my genetic testing. And I don't sit there and go page by page through a 23andMe. Now we'll take that data, import it into a really sophisticated artificial intelligence curation program known as Opus23 that can really curate and pull the meaningful data out of that.

But in the end, the genes are important because the genes are analogous to the hand of cards that you get dealt in poker, right. But you have to play the cards. And how you play the cards is what determines the outcome. Now it is true that you can get dealt a better hand initially or a poor hand initially. But you still have somewhat control of the outcome in how you play those cards. And if you play them right, you can still get a good outcome. If you play them wrong, particularly if you're dealt a bad hand to begin with, you're probably not going to have a great outcome.

So no, you're not doomed to be your parents or to have your family history. But you probably are given a higher predilection toward different problems. So your genes are what is more likely to happen, what you have more susceptibility to have happen. But except in fairly rare instances, it's not determinate, ultimately, on what you will have.

So we look at genes. And we try to harvest the power of understanding risk profiles and where we have to triage or emphasize what's important to a person and how we change their lifestyle and their diet or what drugs we might use or what botanical medicines or nutrients we might use in their supplement program to play the hand better. But in the end, the genes aren't what's happening.

The genes are what might happen if Venus aligns with Mars and you eat broccoli on Tuesday and you're under stress on Thursday. What we use a lot in addition to the genetic information is microbiome information, right, what's going on with those organisms we live with, particularly as it pertains to autoimmunity and inflammation. There's a lot of information there that we can leverage. But I think one of the most powerful things are the metabolome, the proteome, the inflamazone. These are all things we look at as well because they are more telling you what's happening now, what is really going on, not what might happen, what is actually happening.

So there are various metabolites we can measure, such as organic acids. There are different proteins we can measure known as the proteome. There's

different cytokines we can look at to determine are you inflammatory or not and what is your balance of these pro and anti-inflammatory cytokines. So that's the inflamazone. So we can look at all of these things. And we're getting to the point where we can take snapshots of these different things: genomics, microbiomics, proteomics, metabolomics, and mash them up with these curation informatics platforms, like the one I mentioned, Opus23, and Utopia. We use a lot of that. And it can really compare your data to the worldwide medical literature and to all of what are called the meta data sets that are publicly available and held by the government.

So there are major data sets on the genome, on the microbiome, on the metabolome. And you can harvest connections and interactions between all of that data on a unique individual and use that to basically prioritize or triage what are the most impactful things you can do on this specific person, what kind of dietary strategy might they use, what kind of exercise strategy might be best for them, because it's not the same for everybody.

And then what's really powerful, is what kind of supplement program, nutrients, botanical medicines would be most impactful for them, and what kind of medications, if you need to use them, would offer the best outcomes for them, and which kind of medications would they be non responders to, or even which medications they're likely to have significant or serious side effects if they use.

Dr. Mark Menolascino: Well I would encourage all of our listeners to pause, rewind the last five minutes, and replay to your doctor what Dr. Brady just said, because you just heard the future of medicine. David, you really talked about this incredibly personalized approach to someone's health, looking at their metabolome, the proteome, their microbiome, looking at their genetics in a unique, personalized way that's actionable, figuring out drugs that'll actually work better or ones they should avoid. These are not what we were taught in our training. But this is what functional medicine doctors are bringing to the tables to their patients. And that's one thing I hope that the summit and the book really do for our listeners, is to really get them to demand this personalized level of investigation.

Dr. David Brady: Well, Mark, I'd even interject that I think there are a lot of providers out there that are not doing sort of the standard orthodox way of doing it, but in my opinion are doing a disservice to many people. And I'll give you an example. I know that there are practitioners of various types that are, for instance, taking 23andMe data or genomic information - what we call SNPs, single nucleotide polymorphisms - and based on SNP by SNP giving very

specific clinical information to patients to do different things. And I think it's the wrong way to go. It's very myopic. It's the antithesis of functional medicine because it's like, I don't know, giving patients specific things to do. There are certain circumstances where this makes sense. But in large part, looking at one SNP and telling somebody what to do, is like taking the book *War and Peace* and reading one word out of one sentence or maybe three letters out of one word in one sentence in this colossal book and trying to write a book report on what the book said, so what the book's about.

Dr. Mark Menolascino: Great analogy.

Dr. David Brady: It's so rabbit hole myopic. It's really not the way to go. Now there's a lot of power in those SNPs when they're collectively looked at and there's pattern analysis and you look at it. But it's a much more complicated play than just going SNP by SNP and making these broad stroke recommendations. And you really, in my opinion, have to marry the genomic or the SNP data with the proteomics, metabolomics, and microbiomics to really get at a place where we can make powerful, evidence-based, meaningful recommendations to patients on what they change about their life.

Dr. Mark Menolascino: Well you're really talking about this personalized systems-based medicine, looking at the entire base of the patient with their genetics, with all of the other parts of their body and parts of their ecosystem that are all going to interact. And I tell a lot of my clients that we know just enough about genetics to be dangerous.

And you're right. A lot of practitioners will do a test and match the supplement to that individual test. All of a sudden people are taking 40 pills. I love this concept of let food be your medicine, let kitchen be your pharmacy, let lifestyle be your physician. And what you're really suggesting is that we now have the tools to know what foods you should eat, what lifestyle factors are best for you, what you should put in your kitchen, and what you should not have in your kitchen or in your medicine cabinet.

And I think this personalization is really not just to help the chronically sick patients that we sometimes see in functional medicine or someone with really bad fibromyalgia, but it's also the way that you're not going to develop a heart attack, not develop a stroke, not develop Alzheimer's disease, not develop diabetes.

Dr. David Brady: That's where the real power is, right. The earlier you intervene, the easier it is and the better your outcomes are. So unfortunately

we're still in the state, culturally, where the majority of patients that come see docs like us are crashed and burned. And they've been left without good options by the more traditional way or conventional way, I should say, of doing things. But more and more I see it turning, where people are being very proactive about looking at these kinds of things. And the whole sort of medical or health biohacking movement that came out of Silicon Valley with sort of biomonitoring and trying to optimize your things, I think sometimes that's taken to a bit of a silly extreme as well.

Dr. Mark Menolascino: I agree, yeah.

Dr. David Brady: But I think the concept is a good one. And it's where we're going. And we're by no means perfect at this. I mean in ten years we'll look at what we're doing today and kind of laugh and chuckle. But we're way more down the pike than many people would think. And even though a lot of this stuff is happening at the highest level of medical research, there's a massive disconnect.

There's at least a 15 year disconnect and a lot of financial stuff in the way creating discord and disconnect between western medical research, which I think is incredibly outstanding, and the conventional practice of western medicine, which leaves a little to be desired, I think we can both agree, particularly when it comes to chronic complex disorders. They're great at acute stuff and trauma. I mean they're just miraculous, right, in surgical procedures and things like that.

So I'm not down on medicine in general. I'm glad we have the drugs we have. I'm glad we have all of the high tech stuff we have. But for the vast majority of problems that the vast majority of people have, they are pathetically inept at dealing with them.

Dr. Mark Menolascino: Well you bring up such a good point with really what this summit is all about, is that you do good medicine when you do good medicine. And when you have acute problems, the medical system works really well at dealing with acute problems. But typically heart disease is this chronic problem, like diabetes is, like dementia is, like obesity is. These are all chronic illnesses that there's not one single medication intervention that's going to change the entire world.

You mentioned the biohacking. And I love it when people come in with their Fitbits, they have all this data and they've been online and looked up all this information, they have their 23andMe, they have all this information, because

these are empowered patients. And our first question is tell us your story. And as you said earlier, most people have never heard their story told. And they don't have a practitioner that can put all the pieces of the puzzle from all that information to the story that's unique to them.

Dr. David Brady: Yeah, because the data is great, but it has to be contextualized. The story's not going away. You have to understand what all that data means and what it's bathed in. We've seen the same kind of data on two different patients. And they have a totally different outcome or existence, right.

Dr. Mark Menolascino: Well that's right. We see that with stress as well. We had a huge snowstorm last year. We had snowed four feet, and snow was everywhere. The first person come in and said, "I love it when it snows like this. The trees are beautiful. The snow's so beautiful. I'm going to have a great day." The very next person walks in, says, "I hate it when it snows like this. I'm going to slip and break my neck." So the same two not just natural supplements, medications but experiences, this internalization of the stress, may change how you experience the activation of a medicine or a natural product.

And you were talking about these chronic illnesses. And you mentioned toxicity just a little bit. We're now tying toxicity to obesity, to diabetes, to dementia, to heart disease. How do you, in your practice, assess someone's exposure to toxicity, their total body burden of toxicity? How do you engage in client with this whole nebulous concept, or scary one, of toxicity?

Dr. David Brady: Yeah, it's a difficult one. But in the story we try to find out what kind of exposures may they have experienced, right. Did they have an occupational exposure? Do they have a living environment that may be full of mold or an old house that they're restoring, lead paint? I mean that's all easy, low hanging fruit. But also, in a good exam, looking in their mouth: is their mouth full of old mercury laden metal amalgams that are full of transitional metals that we know can drive autoimmunity and inflammation? And then in addition to the standard medical tests, blood work that we would do, like any doctor would do, to rule out systemic disease and look at organ function and so forth.

One of the tests we do a lot is organic acid testing. And there's a whole element on there because that kind of test doesn't tell you everything about anything. But it tells you a decent amount about a bunch of different foundational things. And one of the things it can tell you is not which toxins

are there or not, but how is your biochemistry of detoxification working. Is your ability to clear things hindered in some way? And it's looking at some of the major routes or biochemical pathways of detoxification.

So if that stuff looks like it's struggling, then someone is likely to have a higher body burden of a whole host of different toxins because our detoxification mechanisms are by and large not specific to each chemical or toxin. There's a multitude of them. And you use whichever one seems to work for that particular toxin.

But it's sort of a conserved system, where you can test a few things and get a pretty good idea is this a robust detoxifier or is this someone who's struggling in detox. And if they're someone who is struggling in some of those pathways... and some of that struggle may be because of a genetic sort of susceptibility. Maybe you don't make as much of the enzymes that do that as the average person. Or as you're getting older, you're making those enzymes structurally a little bit wrong. We call them [worked] enzymes. They're just not performing well.

So if you have a detoxification machinery, if you will, or biochemistry, for whatever reason, may not be as up to snuff as the average person and you have a higher level of exposure, then you're one of those people who really may be inflamed by toxins. So then, based on that information, we may do specific testing on different kinds of organic solvents or pesticides. Or we may look at heavy metal challenges. It really depends on the circumstance in the patient. But we do quite a bit of that testing.

And I'm lucky in that in my practice, Whole Body Medicine - it's a group integrative practice - and within our same facility - it's sort of divided down the middle - we have the medical side, and then we have the dental side. And we're Whole Body Medicine. And we have one of the world's preeminent biological dentists and his practice right there.

So if we need to get amalgams out, if we need to do some greater testing on the whole dental side, and just... dental health, oral health, is of paramount importance to cardiovascular disease, obviously. If you have the wrong kind of microbes in your mouth, in your oral cavity, we know that that can drive systemic inflammation. And that is associated, lock down statistically shown - the actuary data is there - if you have bad oral health, you will have higher chance of cardiovascular disease, cardiovascular incidents, strokes, and MIs. You will also have higher incidents of various autoimmune disorders. I'll give you an example. The bacterium most likely to cause periodontal disease or

gum infection is *P gingivalis*. And *P gingivalis* actually produces an enzyme called PAD4, which alters proteins in your own body. And it's called citrullination, right. It adds a citrulline onto structures like collagen and vimentin and fibrinogen, mainly these tissues or proteins that make up your joint structure, kind of the glue that holds your body together. And it can actually alter those proteins, making your immune system no longer recognize them as you, which is a phenomenon called haptin. And then your immune system attacks your own joints.

So we know, for instance, that *P gingivalis* overgrowth in the oral cavity is not only associated with but causally linked to the genesis of rheumatoid arthritis. Now it's not the cause of all rheumatoid arthritis. It's one of the possible causes of rheumatoid arthritis. And the average physician or rheumatologist trying to diagnose rheumatoid arthritis will often do a rheumatoid panel, which has something called rheumatoid factor on it and c-reactive protein looking for inflammation.

But a test that's often on it, it's called an ACCP or a CCP, an antic cyclic citrullinated peptide is actually a biomarker for this very phenomenon of citrullination that can occur due to these microbes that we may have growing at greater abundance in us that are deleterious. They're doing the test to confirm a diagnosis, but when you ask them why they do that test and what that test means, they don't know. They just were told to do it in medical school. So it's kind of interesting.

Dr. Mark Menolascino: You bring up the why question. And I think what we do in functional medicine is we ask a lot of whys.

Dr. David Brady: Yeah.

Dr. Mark Menolascino: Because really anyone can test for rheumatoid factor and the CCP antibody you mentioned, but why is the rheumatoid factor elevated, why is the CCP present, and digging deeper to look for where it is.

You mentioned the oral microbiome and autoimmune disease. They've found the bacteria from the mouth in the plaques that have caused sudden death in people. When they dissect the artery inside the plaque, they find the DNA from these bugs. They're now linking the same bugs in the oral microbiome to dementia. And then the gut bugs, like *Klebsiella*, link to ankylosing spondylitis. So looking at the mouth, looking at the gut, these are not things that happen in rheumatology offices.

Dr. David Brady: No, I mean when you look at autoimmune disease and rheumatology - let's go right down the middle - and rheumatoid arthritis, ankylosing spondylitis, psoriatic arthritis, you see overgrowth in the intestines at a much higher level in those subjects of Klebsiella, like you mentioned, citrobacter prevotella, proteus, E. coli in general. And then ask yourself how many people who go to rheumatology service get a stool analysis to look for these bugs?

Dr. Mark Menolascino: None, unless it's a functional practice.

Dr. David Brady: No, they don't do it. Oh, well the gastroenterologists do that. But they don't do it either. If they do a stool analysis, they're looking for a very small narrow thing of organisms that cause acute diarrhea. Otherwise you might get scoped this way and this way if they don't find anything, a lesion that can be addressed with a procedure. Then you get the purple pill and sent on your way. And that's not what the functional medicine gastroenterology work up is, that's for sure.

Dr. Mark Menolascino: We had a client that came back from a leading rheumatology center and was told that diet has nothing to do with her autoimmune disease. And I was just shocked that that was a comment that could come out of a leading area let alone really any rheumatology office.

And you talk about the gut health. We've always talked about leaky gut, intestinal permeability, all these different bugs. One of your companies specializes in looking at these advanced panels. And really anyone I think with heart disease, diabetes, autoimmune disease, dementia needs to have their gut looked at, their oral microbiome looked at like this, because if those two aren't balanced, I mean there are ten times more bacterial cells in your gut than human cells in your body. And that ecosystem of the microbiome with the good ones and bad ones has a huge balance of what's going to happen in your inflammatory processes.

Dr. David Brady: Yeah, not only do those bugs outnumber us ten to one, at least, but their genome, the genetic material from them, outnumbers ours by orders of magnitude. It's a crazy difference. And now we're showing there's lateral gene transfer or horizontal gene transfer across different microbes. And even with our own genome, it's a very complicated business we're just starting to understand.

But you've been sort of chipping around the edges of the foundational elements here. And it doesn't really matter to a functional medicine doc, at

least a good one, in my opinion, what the patient's problem is, from cardiovascular disease to autoimmune disease to whatever. We know that there are certain tenets or foundational elements that you have to get optimized in an individual to give them the greatest chance of being healthy. And two of the things that our mentor Dr. Jeff Bland has been talking about for decades is, does someone have a robust ability to detoxify what's deleterious to them that they're either exposed to exogenously from the outside or all of those toxins that we all make inside endogenously, right.

Even if we're totally healthy, we're making toxins all the time, metabolites. We have to clear hormones. We have oxidative stress just by making energy in the mitochondria. So you have to support good, healthy, robust detoxification, number one. And if there are obvious toxins there, mercury, I mean whatever it may be, you should try to clear that as much as possible and lower the body burden.

But parallel to that, there's probably nothing more important than testing, optimizing, the gastrointestinal environment, not only the bugs, the microbes that live there, the GI microbiota, but also the health of the GI intestinal lining. And that's where the whole concept of leaky gut and hyperpermeability come in. If you're leaky, it's like a sieve. It's as if the sewage drains in your house had holes in them, and it was just allowing it to come back in the house. I mean it's not a good situation

Dr. Mark Menolascino: That's an interesting analogy.

Dr. David Brady: It's very, very common for that to be with the use of all the medications, non steroidal antiinflammatories, antibiotics, lots of alcohol, highly processed foods, and stress. We can go on and on and on. The American, or I should say the western industrialized, existence is one that's deleterious to the gut health. And if you go back to even some of the great thinkers 100 years ago, Metchnikoff, right, who's the father of modern day probiotics, who coined this term we use now called dysbiosis, he understood very early, by studying what we now call blue zones, right, these pockets where people live really long and really well, right, he found one in Bulgaria, right in the mountains of Bulgaria, as you know.

And it was this pocket of people who live well over 100 years of age, which at the time was unheard of. And they were active. They were vibrant all the way until the day that they finally took their last breath. And he looked at what they do different. And it was all the classic stuff of the blue zones, right. They were really highly valued as elderly in their tribe, right. They weren't shoved

aside. They were sought out for great wisdom. They were valued. They kept working. They did what they did. They didn't retire and sit around the house. They were out tending to the animals in the fields. They had a tight social network, right. They stayed together. But the big difference he saw in their dietary input was that they had these wonderful cows or animals that fed on these pristine pastures.

And they would take the raw milk, not pasteurized milk, raw milk, and then they would make these cultured products out of it like yogurts, kefirs, things like that. And they consumed a massive amount of this stuff. And he thought it was something in that. And it turns out that they were full of probiotic organisms. And that's how still, if you look at a lot of probiotic supplements, you may see on it *Lactobacillus bulgaricus*. It was from this Bulgarian experience.

So it's amazing how back then probiotics got a lot of attention and publicity in standard orthodox medicine. But then with the advent of antibiotics and other types of things, and real chemical pharma based financial model in medicine, a lot of that wisdom just melted away. But it's back. It's back because the data and the objective science is telling us it needs to be back.

Dr. Mark Menolascino: Well you make such good points about how our gut really is under attack from so many things, the stress of our culture, the stress of our lifestyle, the food that we eat, the lack of nutrients, the content of toxicity, the lack of the good bugs, the preponderance of the bad bugs. And when we talk about the diet with the blue zones, we've talked a little bit in the past about the Mediterranean Diet and how much of it is the food versus how much of it is the social gathering of the meal and the support of the meal and the support of the family.

I want to ask you just a couple questions for our listeners. If someone asks you, "Dr. Brady, what do I eat? I can't afford tests. I don't want to do any tests. Tell me what to eat. What diet should I go on?" We don't like the word diet because the first three letters are die. But how do you help someone get started making a nutritional shift in their health?

Dr. David Brady: Well I wish there was an easy answer to that. And a lot of people are agenda based in their diet. And they'll give you that oh, paleo, or keto now or Mediterranean or whatever will be. What the blue zones have showed us and what different cultures around the world have shown us is that there are many different ways of eating that can be very healthy for humans. But you hit on it. It's not just the macronutrient composition or the

name of the diet of the week that you're eating. It's how you contextualize the food. But I think there are some common foundational sort of elements to it. You should eat real food not science food. I mean that's really simple, right. If you're picking up a box or a can and it's got 20 things listed in ingredients, you can't pronounce half of them, don't eat it, man. One of my nutrition mentors way back taught me a very simple test for myself but for patients. But he said, "Look at the plate when you're about to eat and ask yourself one question. Could you have got the food that you're eating in the form that it's in on your plate 100 years ago?"

Dr. Mark Menolascino: Great point. That's great.

Dr. David Brady: And if the answer is no, don't eat it, right. So different dietary constructs from a macronutrient standpoint can work for different people. Some people do great on a high protein, lower carb diet, whether it's a paleo diet or a higher fat diet like a keto diet, particularly if they have certain medical challenges, if they have epilepsy, if they have bipolar, whatever it may be. I think by and large if I didn't know anything about anybody and was trying to find out what I think would probably be the most rational way to eat would be a Mediterranean diet.

It's got healthy fats. It's got tons of phytonutrients. It's got quality proteins. It doesn't have a lot of junk carbohydrates in it. It's got carbohydrates that are real with lots of fiber. The macronutrient balance is great. There are lots of things like olive oil and nuts and seeds. And it's got a lot going for it. And you mentioned those cultures have a good relationship with food. They don't overeat. And food is sacred. Food is not to be monkeyed with. It's got to be real. And there's a social element. They're all gathering and eating together. And I think there's incredible value in that.

And we have all these incredible nutritional scientists around the world. And the popular media will often say well none of these cats can get along, right. They can't agree. And I don't think that's true. I think the predominant nutritional scientists around the world do generally agree with what I just said, which is there are different dietary styles that may work for different individuals. But there are these commonalities. There's the acorn in the middle, right, where all these diets overlap.

And where they overlap when they're healthy is real, fresh foods, not science foods, not foods created by the food industry, and that you have that good relationship with food. And it's not totally extreme one way or the other. But I think probably someone who encapsulated it best is not a nutritional scientist

at all but an investigative author in Michael Pollen, right. What was it, Mark? You can help me with this. But he said...

Dr. Mark Menolascino: Eat food, real food, mostly vegetables.

Dr. David Brady: Yeah, eat food, not too much, mostly plants, right, and something like that.

Dr. Mark Menolascino: He also said eat your lunch at a table. And your desk is not a table. That's one of my mantras.

Dr. David Brady: Right. But one of my good friends at Yale, David Katz, also talks about the whole thing of fingers, forks, and feet, right, fingers, forks, and feet. So to stay healthy, use your fingers in a good way, which is not like this, right. Make sure what's on your fork is good. And use your feet. Keep moving. Keep moving, don't smoke, eat good, real foods, and you'll be fine.

Dr. Mark Menolascino: Well a lot of these ideas and these pearls from our world's expert, Dr. David Brady here, are things that you can do every day. And that's what I like, is when we take a deep, deep dive into the science but then also bring it down to just the basic things that people can do on a daily basis. It's about clean food, clean air, clean water. It's about using your feet, recognizing how you use your hands, and eating whole food. And really a lot what we're doing of heart prevention is what we're doing for all of the chronic illness prevention, because I think you and I...

Dr. David Brady: Absolutely, because it's a chronic inflammatory disease. And ironically enough, I know the current medical model is to statin everybody to extremely low cholesterol levels, which I have a major problem with. I think they're overused, overprescribed. When they are used, they're used at too high of a dose. They cause a massive amount of myalgia, fatigue.

And a lot of women come in to me with the diagnosis of fibromyalgia, and they're over statined, basically. And I'm not totally against statins. I think the data on them for secondary prevention, once you have a heart attack, is pretty good. I think the data on them for primary prevention, to be used with the general public with people who've not had a heart attack, is woeful. It doesn't support the way they're being used. I think the number to treat to avoid an event is in the hundreds, several hundreds.

Dr. Mark Menolascino: It is.

Dr. David Brady: But I think where statins do work, particularly in secondary prevention, ironically enough, is not lowering that number of your cholesterol, but they have inherent pleomorphic effects, which means they're deep tissue antiinflammatories. They are getting at the inflammation, similar to how vitamin D works, similar to how low dose naltrexone is being used now in autoimmunity.

But I think statins have effects that are not based on the mechanism of action that they were approved on that imparts some of the benefit. But we can get that lowering of inflammatory benefit without using those kinds of agents if we just live a lifestyle that makes more sense, we eat real food, we have good social support networks, we keep moving our feet, we're not full of toxins, and we have good healthy GI microbiomes. I mean it can bring you a long, long way.

Dr. Mark Menolascino: And I know you see this in your practice, where I'll have a woman come in that wants to prevent heart disease. And we'll go through the anti-inflammatory program and personalize her care. And when she comes for a follow up, she'll say, "Well I like what I'm doing because I'm sleeping better, and my knee doesn't hurt anymore, and my skin cleared up."

Dr. David Brady: They're all related.

Dr. Mark Menolascino: "My sexual desire is higher. And I'm just happier." And so all of that is all related.

And I think for those of you listening, I hope you got as much out of listening to Dr. Brady as I did. It's always a pleasure talking with you David. Your patients are very fortunate to see you. You bring so much to the clinic for them. And if people want to learn more about you, how would they find you, David?

Dr. David Brady: Oh, probably the best way is just my main website, drdavidbrady.com, as you said. And if you struggle with chronic pain, think you may have or have been told you have fibromyalgia, another great resource would be my website more specific to that condition, which is fibrofix.com. And of course I have a book by that name as well. So if you're in that situation, that might give you some great resources.

And I would just advocate you really find someone, a really good practitioner to work with, that you resonate with that you just know is the right person. So find a good functional medicine trained provider. If you can go see Dr. Mark,

certainly do that. But if not, find a functional medicine provider who's certified by the Institute for Functional Medicine on their website. You can just Google Institute for Functional Medicine. They have a find a practitioner tool where you can find a certified provider.

Dr. Mark Menolascino: Well, that's great. And David, thank you as always. Your insights are amazing. And thank you very much for being here. And until the next time, of the Women's Heart Health Summit, look forward to seeing you again.