Introduction and Background

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that's kind of a slight I always call that the sliding scale of autoimmunity, because the folks that have that as children often manifest an autoimmune condition as an adult if they haven't addressed, you know, kind of all the root causes.

we know to manifest at least the auto immune condition, you're going to have to have, you know, the, you know, the environmental conditions, you know, the genetics and that leaky gut.

We're talking about the leaky gut, Maliki brain, you know, that that in and of itself, kind of sets the stage for all of that to arise. But there definitely is a subset of genetics, you know, from on the other immune side, you've got like the HLA genes, you've got the, you know, even and this the interleukin genes and the TNF alpha genes, those can relate just to any general information.

Hello. Hello, doctor Davis, how are you? I'm great. Thanks for having me. Oh, thank you so much for for doing this interview. I'm. I'm just so impressed with your resumé, and I can't wait to get into this whole gut health.

But before we start to introduce yourselves so our listeners can get a little idea of who you are. My name is Doctor Stephanie Davis, and I've been practicing functional medicine for 16 or 17 years now.

It's been a long time anyway. But before that I was I was a microbiologist so very much my wheelhouse is, you know, and the gut, the immune system, you know, inflammation things, things of that nature.

And so that's, you know, where I tend to focus, I practice and I do see a lot I see adults, but I also see a lot of kids. About 60% of my practice is is kids.

Now just because, you know, unfortunately with the way the world is now, we you know, a lot of our kids are starting to get sick earlier and earlier. So that is, you know, that's my my life in a nutshell.

And that is your life in a nutshell. So growing up, my parents used to always say, oh, you know, you are only as healthy as your colon. And more so that has be become true unmasked.

So and you are in your practice. You have also seen the importance of a healthy gut. Now what would you say is connection between gut and brain health?

So it's really interesting because I don't think a lot of people think about, you know, kind of the gut and the brain as related. But they very, very much are.

I think, you know, you remember and in school you learn about membranes and, and barriers, and the gut has a, you know, protective barrier. The brain has the protective blood brain barrier, and so does the skin, interestingly.

And all of these are to protect us from the outside environment. And these can become compromised, you know, from inflammatory conditions. You know, also just, you know, even stress stress can can be a part of it, you know, pathological conditions, you know, if you come across, you know, just like for instance, salmonella, that could be something that compromise is usually starts off in the gut gut barrier where it becomes compromised.

But then, you know, it allows, you know, things that shouldn't be in the bloodstream in there. So certain types of chemicals and proteins, you know, you'll often hear them referred to as antigens.

And you'll also, you know, organisms such as bacteria, they get into the bloodstream.

Gut-Brain Axis and Barrier Dysfunction

You know, they they incite an inflammatory response and that, you know, can lead to anything from, you know, just systemic inflammatory symptoms like, you know, just general aches and pains all the way to autoimmunity.

But the important thing here is, you know, the vagus nerve, the the vagus nerve connects, you know, the brain, the central nervous system to the gut with its enteric nervous system.

And, you know, you've got your immune chemicals and hormones and neurotransmitters that travel back and forth and that, you know, it's your gut brain axis and that, you know, you can have symptoms, you know, in the gut and, you know, not necessarily in the brain or vice versa.

You can have, you know, something like brain fog or lack of balance. And really it's telling you that there's an issue in the brain and in the gut. So, you know, it's a very connected system that's very kind of intimately, you know, connected and, and people, you know, people very much.

I don't think, think about that. But, you know, and in essence, you know, gut get health and brain health are very tied together. Right, right, right.

You you mentioned the gut brain axis. It's this function. What would you say are some of the common causes of this dysfunction? You know, it's it's interesting because I find anymore that the causes are becoming more numerous as compared to when I first started practicing, you know, and in adults, I think it manifests differently.

And adults, you know, stress by far is probably the most common cause trauma, you know, past traumas, current traumas, those are a huge factor in it. Poor diet, toxins of all kinds are becoming a major, major player.

I've done a lot of training and, you know, kind of environmental medicine. And the more recent years just because I've had to come up to speed on, you know, all of the various toxins, you know, in the world now, you know, it's not just, you know, what you're eating, it's what you're breathing, it's what you're bathing, and it's the chemicals you're putting on your body.

When you put on personal care products, you know, it's the whole world of environmental medicine is is huge in this realm, but also just kind of a big entity and in and of itself.

Whereas, you know, the kids are a little more, you know, kind of narrow in and why they're, you know, manifesting this stuff. It's it's generally definitely gut related issues, you know, whether the a lot of them had, you know, that the moms had infections while they were, you know, pregnant.

And, you know, that usually ends up as either a C-section or a child that's born, you know, inflamed with an inflammatory situation. Diet is also kind of plays into that whole realm to, you know, gluten in casein are are two proteins that seem to kind of incite this inflammatory response.

But truthfully dietary. I see a lot of different kind of food sensitivities. And these kiddos, you know, and also for them, I don't think parents think about stress or trauma, especially in babies.

But that's a big factor as well. What I what I see is the mamas who tend to be more stressed out or anxious. They tend to, you know, their kiddos tend to take a little bit longer to heal as we work on both of them.

You know, I, I see a lot of mamas and little ones. So, you know, we're working on on both of them. And as the mamas, you know, anxiety and, you know, stress decreases.

The same happens with the baby. They're very receptive to what's going on in their environment. Right, right. So I, I agree what would what would some of the symptoms be if okay this blood being a barrier has been compromised.

So again it's like adults and kids kind of have a different scenario I would say number one symptom in adults brain fog, you know, lack of mental clarity and just lack of mental agility.

The the ability to go from one fat to another fat to another thought or make decisions. And you can also headaches can be a part of that. I see adults who have balance issues, you know, they'll be walking around and they might hit their shoulder on a wall or they, you know, are working out and they just notice that then when they try to do thing on something on one leg, they don't have the same balance anymore.

Also a big piece of that is like, you know, mood related issues like anxiety and depression. Those are also pieces that will manifest and ness. But for the kids, it's a little bit different, you know, that I would say the symptoms are not quite as profound and broad.

It's more, you know, lack of focus. They might be labeled ADHD or ADHD. They also might have some anxiety there. Also, with kiddos, a lot of skin related issues.

There's going to be like rashes and eczema or other kind of random, you know, kind of skin manifestations. And also one big thing that I also hear a lot is they say the ones who can talk say my stomach hurts, and often it's because they can't say, you know, and describe exactly what's happening to them.

So they often, you know, it's a catch all for anything that's happening inside of their bodies. So that's, you know, kind of the, the difference. And what I see between kids and adults and, you know, in both groups you can have sleep disturbances as well.

And I would say sleep is sleep disturbances are usually more profound in adults. That is very interesting because in my practice I see adults as well as kids.

And I have a lot of times mothers bring the kids in the mirror like, I don't know what is going on. The the hair is falling out. There's the exam and bathroom schedule is off, and it's interesting that it might just be a situation of this, this, this, this gut and, and brain barrier because then it's neurological as well as a symptomatically stomachache.

And the skin would this now and certain certain people with the patients that come in I generally see different generations of the kids. And I find that in certain families that that, that the kids and maybe 3 or 4 of them actually have these, these symptoms.

Is there some genetic predisposition, you think? Oh, absolutely. You know, we know whether it's, you know, we're just talking about that blood brain barrier.

And, you know, the the gut brain axis, very definitely genetic components there. And one thing that I will say about this, this group of people in general, a lot of them do have underlying autoimmunity.

And or, you know, they have family history of the, you know, the allergic triad, which is allergies, asthma, eczema. And, you know, that's kind of a slight I always call that the sliding scale of autoimmunity, because the folks that have that as children often manifest an autoimmune condition as an adult if they haven't addressed, you know, kind of all the root causes.

So, absolutely, we know to manifest at least the auto immune condition, you're going to have to have, you know, the, you know, the environmental conditions, you know, the genetics and that leaky gut.

Causes of Gut-Brain Dysfunction

We're talking about the leaky gut, Maliki brain, you know, that that in and of itself, kind of sets the stage for all of that to arise. But there definitely is a subset of genetics, you know, from on the other immune side, you've got like the HLA genes, you've got the, you know, even and this the interleukin genes and the TNF alpha genes, those can relate just to any general information.

So when you have, you know, 1 or 2 copies of certain types of those genes, you definitely have the the stage set for developing, you know, any anything from, you know, just general inflammatory conditions to autoimmunity.

So pretty much what I'm hearing is there is a connection between this leaky gut and auto immunity. Tell us a little bit more about that. And how would one be able to identify that this might be what's.

All right. So when I'm when I see a patient who comes in and I suspect autoimmunity, one of the first things I do is go in and check the family history.

Like I mentioned before, you know, do you have family members with autoimmunity or allergies, asthma, eczema? A lot of these patients I do run genetics on.

I do look at the HLA genes that's not necessarily set in stone. A lot of the people who do have copies of the interleukin genes or the TNF alpha genes, even some of the, you know, kind of nutrient related genes, too, you know, you've got your omega fatty acids.

That's huge for inflammatory modulation, vitamin D, vitamin A, all of that. You know, the collective methylation SNPs, not just MT, SR, but, you know, mTOR and TR, CBS, all of those, you know, there's there's a lot that that goes into into this.

And I would also say, you know, you've got your general inflammatory genes also like like C-reactive protein, you know, it is something you can measure in the blood, but it's also a gene that you can look at.

You know, there's there's a lot that I look at when I'm, you know, kind of looking at this, this big picture. And then another big component is the environmental factor, because we know in order to manifest that autoimmune condition, you have the, you know, the genetics, you have the leaky gut.

And then the environment is typically, they say, pulls the trigger. You know, that's something that's become, well, well known now. And so that's what I'm looking at.

What are the environmental factors contributing. You know quite frequently there is kind of like the stress chemicals, you know, in the body you've got hormone imbalances often GI related stuff.

I'd say that's often one of the biggest pieces of the puzzle because, you know, we eat so frequently throughout the day. And so your body has the, you know, many opportunities to respond to those food related antigens or proteins and then, you know, again, toxins, you know, that's that.

I from what I've seen in the last five years of my practice, there's been a big shift to that being a significant, you know, environmental root cause.

Right, right. So for for parents who are concerned that the, the child may possibly have this, what what kind of things are they looking for? So again, you know, kiddos who might struggle with focus once they might be anxious.

Another piece that I often see is they will say, you know, my my my kid was fine one day and then the next day, you know, they started having, you know, some aggressions or irritability, you know, things of that nature, the scan, you know, anything happening on the scan, usually, you know, kiddos seem particularly susceptible to, you know, things arising on the scan and also just kind of that allergic type of symptoms, you know, either with like, you know, a runny nose, runny, watery eyes, that type of stuff, and sleep related issues.

A lot of times the kids don't have overt GI symptoms. And I would say this is true of a lot of, you know, a lot of the population. But kiddos often don't have GI related symptoms.

You know, there's no you know, there's I would say infrequent things like gas and bloating and, you know, stools tend to be pretty normal. And most of these kids, if anything, that might tend towards constipation, not diarrhea.

But yeah, the GI symptoms are not quite as as prevalent. And these kiddos that is that it's actually very interesting that there is such a difference between the adult population and the kids that seem absolutely so.

So what are some of the the biggest differences that you would do if you had to pull about 3 or 4 things? What would you say the biggest differences between the manifestation of this in adults versus children?

The adults most definitely have decent johns, and I usually chalk that up to life history and especially the role that, you know, stress and cortisol and that whole, you know, aspect plays.

And my health, you know, I think, you know, adulting is hard. So yes, it is. You know, we've got a lot of balls in there and it's often hard to juggle.

And that a lot of what I see in my practice is women and children and, you know, women we have we have an extra job. If you have kids, you've got an extra job.

You know, you run your household, you manage your children and you, you know, a lot of women are working. You know, you're managing life. So there's there's a lot there.

So I would say that is, you know, that that stress factor and GI symptoms are probably much more significant in the, you know, adult realm as opposed to the the children.

Another factor that may be, you know, more, I would say adults is that that sleep disturbance. And again, I think this also ties into their, you know, kind of stress factor.

And what happens, you know, with cortisol levels. And you know what? You know what how it affects, you know, serotonin and melatonin and all the other hormones.

You know, I think that that is a huge piece of the puzzle, too.

Symptoms in Adults and Children

And, you know, if you're not sleeping, you're not healing and you're not your body is not regenerating. So I would say those are probably the three most distinct.

So now we know what to look for. Some of the causes. What would you say would be some of the solution So I would say first and foremost, I think working with a practitioner to identify the root causes is, is huge, because a lot of people that I see have tinkered with their diet and also tried some, you know, therapies that they read about online.

And lots of times they do make some headway. But working with the practitioner, doing the right, you know, kind of testing and identifying of the, the root causes.

And, and I think testing, you know, the biochemical and physiological testing is important. But also I think analyzing the stress and analyzing the traumas are really, really significant.

The more the longer I practice, the more I see where the past traumas are incredibly significant to, especially this patient population. You know, we we tend to hold traumas in our body.

And if they aren't dealt with, they, you know, they just kind of manifest and perpetuate. So it's a, you know, that's a that's a big piece of the puzzle.

And then also, you know, if you're just looking for things to try to get the ball rolling, I really, really love, you know, things such as, you know, if I like red light therapy, things that are going to stimulate mitochondrial function, because that's something that I do find on the testing.

And then just listening to people symptomatically, their mitochondria are very challenged. So their energy levels are challenge. You know, that's where that that brain fog and the fatigue and you know, muscle aches and pains come in.

So using that red light therapy and that PMS can really, really help get that stuff going in the right direction. Also just I always tell people simple lifestyle factors, you know, get yourself outside in the sun, especially early in the morning, to help set that circadian rhythm.

Get your hands in the dirt, get out in nature. All of that stuff is really, really, really going to help, you know, give yourself a good bedtime, you know, and and make sure you set the stage for sleep, dietary, just, you know, without even getting into the nuances of all the diets out there, eat a whole foods diet.

I mean, whole foods diet, you know, organic when possible. I know not everybody can do that, but, you know, lots of fruits and vegetables, whole foods.

That's going to help get you going in the right direction. There are lots of little things you can do to help, you know, get the ball rolling in the healing process.

I, I, I find that very interesting because I think, I think people have a certain understanding about each piece of those. But I learned an expression today and I I'm going to use and I love it is the layers, the onion.

So it's not just one solution but it's layers, it's libraries. And and the problem sort of started, I guess, the same way because it's layers of different ways from what I'm hearing is not one thing caused that, but many things caused that.

And then I guess different solution and PMS is, is is amazing because one of the biggest reasons people use it is for inflammation. And a lot of this is inflammation.

And if you can reduce the inflammation, then the body's able to sort of heal itself and settle down. So what is your personal experience with with this leaky gut brain fog?

What is your own personal experience. So I myself interestingly have had I would say I probably have had a leaky gut for a very long time. But you know, as practitioners, we try we tend to ignore things.

Genetics, Autoimmunity, and Leaky Gut

I would say my first experience actually identifying it was I went through right after the birth of my son, who's actually going to be nine next week, they probably six months after his birth.

I went through a very, very stressful experience with work and some other, you know, life related issues. And it was kind of interesting because I was also living in a moldy house, and it did not dawn on me that, you know, the mold was playing a factor, but I started getting some weird, you know, neurological symptoms.

Like, I, I felt like I couldn't think, you know, word recall was hard. You know, I was not able to, like, I was talking about having that mental agility moving from, like, one thought, you know, in a, in a category to another thought in a different category was really hard.

I noticed I was sensitive to EMS, so when I would go into a place that had lots of EMF, I literally my brain would almost shut down. It was very interesting.

And then I had horrible eczema and interestingly, not a lot of GI symptoms. You know, GI was pretty normal. You know, I would have the occasional, you know, kind of gas or bloating, but nothing profound.

It was not not a daily occurrence. And I did my own testing then. And it was, you know, literally I and Vicky got the signs of leaky gut were all over.

Actually, at that point, I was still measuring things like, Daniel and I don't do that in my practice anymore just because I don't. You know, you can tell when somebody has leaky gut and is it worth it to add that extra $50 on to a test?

More than likely not. So, you know, unless somebody really wants to see it. I don't test for that, but I did at that point. It was, you know, a newer and newer test on the scene.

I had the leaky gut, I had tons I had rampant dysbiosis with lots of opportunistic infections. You know, I had, you know, things like pseudomonas and stuff and klebsiella.

Lots of the bad guys I did in my testing did not show for Candida, but I am I actually treated myself for Candida because I knew I was I, you know, kind of living in that moldy environment.

You know, I, I knew that I had an issue there and then I also tested myself for Epstein-Barr virus at the time because of the neurological symptoms, not necessarily at that moment in time, putting the connection, you know, to, you know, the blood brain barrier and the gut and, you know, the vagus nerve and all that.

So that was kind of my first foray into all of this. And I treated all of that over time, and I was in a really good place until I moved into moved out of the the moldy place was good for several years and then ended up a couple years back moving into another moldy house, which of course you you can only do so much when you do the inspection for a house, right?

And we house looked great. We even had a mold inspector come in and he did not really find much of anything. He had remnant water damage, but he, you know, he did some testing and did not see anything but ended up that we ended up having mold in that house.

And for me, mold is a major trigger and the mycotoxins. So I ended up going through this all again. And then Covid hit. So that kind of played a role in it for me as well.

So I've I would say and probably 90% at this point, you know, having had Covid, you know, kind of triggered some things. But again, you know, for me it's not a lot of gazumped and my I'll do GI testing and I will come back looking not great.

And then you know, it's really it's really interesting how all of this happens that we a lot of my, my colleagues and I who are kind of in this space training these types of patients kind of have this little joke.

And it's about celiac from the standpoint of we kid around saying it should have been, you know, basically identified by a neurologist or a dermatologist and not a gastroenterologist, because, you know, statistically in the research, more people manifest symptoms outside of the gut than inside of the gut.

And it's usually the brain in the scan. So it's, you know, and I feel like that speaks volumes to what we're talking about. You know, a lot of these symptoms are not necessarily GI symptoms.

Right, right. And and I, I agree I have a patient who developed vitiligo like see some hands and nobody can figure out what was going on. And I actually was diagnosed as leaky gut which leaky gut the layperson listening would think is something with your gut.

And it's going to be a GI thing. And you're right, it's absolutely it's this other manifestation. Yeah, skin in the skin in the brain are often where his these GI issues are, you know, happening.

Right, right. So if, if you had to give some advice to just for the moms and just the general population, but more so your passion seems to be children are children can't tell us when something is wrong.

Testing and Root-Cause Evaluation

If you actually had to give some advice to moms in regards to children, how to safeguard them and what to do, I would say try to make your household and your environment as clean as possible.

You know, if you want, you know there's a lot of things you can do air filtration in your house, you can buy, you know, just air filtration units. You can do whole house air filtration, similar with water filtration.

You know, you can do like a sink unit or a just, you know, a little, you know, kind of countertop unit. You can also do whole, you know, kind of whole house units and, you know, clean products, you know, personal care products like lotions and shampoos and, you know, try to buy the cleanest versions.

You can also cleaning products similarly, you know, buy the cleaner versions of those. Diet is a huge, huge piece. And you know, by like I said before, kind of buy organic or better when you can, you know, grass fed and, you know, pasture raised meats, that type of stuff always do that when you can and stick to Whole Foods.

You know, I think it's it's hard to strike that balance with diet. You know I my kids are great example. It's like they they came out they kind of had this, you know, kind of paleo.

I made all of their baby food. It was very, you know, they had a super healthy diet. And then they go to school. They're exposed to the rest of the world.

So for me, I'm at a point I'm not super, you know, over-the-top restrictive on certain things because I know that can lead to, you know, eating disorders or orthorexia or things of that nature.

So I, you know, I try to strike a balance. I, you know, my kids don't eat gluten and they're very limited on dairy. So when I kid at school has a birthday, I give them, like, you know, a different kind of treat, like there's, there these muffins that you can get at Costco that are they're zucchini, they're chocolate zucchini muffins and they're organic.

So so I give them one of those, you know, I, I try to find swaps when possible, you know, on holidays where there's a lot of candy or sugar. We do, you know, Halloween, we do the switch, which we, we swap out the candy for, like a toy or, you know, an event that they want to do.

Or I even told them on on Valentine's Day, they're the candy. The school that they go to right now does candy. And I'm not a super huge fan of that. But I said, if you bring me home the candy, I will, you know, I'll get you a little something.

So they were both very excited, excited and on board with that because I just, you know, the more I can keep them away from, you know, sugar and processed foods, the better, you know, because, you know, sugar is so inflammatory, but so are all the additives and chemicals and preservatives.

So, you know, those are just lifestyle things for your kiddos, you know? And obviously, I think this one's kind of a a given, but show them lots of love and affection and have, you know, family time because that is a huge, huge piece.

You know, a lot of the adults I see, they didn't have that as kids, you know, they didn't feel seen or heard or secure.

Healing Strategies and Lifestyle Support

So, you know, just, you know, all of that, you know, is kind of what I would say, kind of the, the manual for, you know, you know, kind of, you know, lifestyle keeping as clean as possible and lots of love.

Well, what are your thoughts on supplements? You know, I obviously I use a lot of supplements and practice and the supplements, I try to use them, especially in kids, judiciously because they they have an amazing capacity and resilience to heal when they start getting, you know, but the right things going in, you know, small, small amounts in the right direction.

A lot of what I start off with is are things that are, you know, kind of general inflammatory, decreasing or immune modulating before I get, you know, testing.

So things like if I, if I, if they don't take vitamin D or if they're vitamin deficient because I actually do do vitamin D testing on kids and most of them are deficient.

So I do, you know, vitamin D often with, you know, k and sometimes A and E, you know, the fat soluble vitamins together because those, you know immune standpoint very helpful also helpful for leaky gut.

So that's something that I can give a child right off the bat. I use some of like the immunoglobulin. So the IgG products a lot of times those can help get the kiddos, you know, going in that in the right directions with regard to an inflammatory standpoint.

And also addressing kind of leaky gut, Maliki brain. And I also use a lot of like the fish oils specifically like this or the PRM fish oils, because those are not and, you know, liquid form.

I have the parents had off the top of the capsule and put it in a smoothie or applesauce or something like that. So they, you know, those are, you know, specifically concentrated fish oils that address very much kind of inflammatory they inflammatory process.

And, you know, also in the realm of autoimmunity too, right. Work. Absolutely. The field that you're in. And the topic is just so much needed, especially now with Covid and kids who were homeschooled for such a long time.

And all environments may not necessarily be the the best environment. But this is very interesting and I and and thank you so much for, for doing this and doing this interview.

If people wanted to reach you, do you do any sort of like telehealth? I do. You can go to my my website is Doctor Stephanie davis.com. Super easy super easy to remember.

And you can find out all of the information there. There's also, you know tools and and things of that nature that they can find there as well that can kind of help them figure out, you know, what direction to go in, you know, with regard to, you know, treatment or things that they might want to do, like it's like a little self-assessment tool.

So that, that that is fantastic. Well, thank you so much, Doctor Davis for doing this.

Practical Advice for Families and Supplements

And I would make sure that my patients also reach out to you because I'm sitting here thinking at least five of, wow, at least five, that I have somebody that drives all the way from Pennsylvania, two hours to come here because the the kid is a year and a half and goes to the bathroom every ten days, but bad skin bad, yet the hair loss.

So that is going to be the first person that is going to be reaching out to you. Thank you. So much I appreciate that. Yeah, I love I love working with the kids because they're just they're amazing, amazing little people.

And, you know, they have such a capacity to heal and it's nice also when you work with the kids, because a lot of what we do translates to the whole family.

It really does. It really does. So thank you so much, doctor Davis. And you enjoy the rest of your day. I know you said mornings work well, and I'm so glad we were able to get this in the morning when you had energy.

Right? Right. Exactly. Well, thank you so much for having me. This was this was great. And I also have to say I use that that onion analogy with my patients a lot because I think it's it's a great visual tool.

You know, you can imagine it is my favorite. My new favorite analogy. But it's a great point. Thank you so much, Doctor Davis. Thank you.