The Hidden Drivers of Autism: Inflammation, Toxins & Early Development Transcript

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Opening Nutrition Advice and Show Introduction

I touched on this earlier, but I'll say it again, diet, so I remove inflammatory things if you can't pronounce it, if there's a ton of sugar. The thing is with the gluten in the dairy being addictive, you don't want to get in a gluten-free crap trap like walking down the Gluten-Free Isle and it's got a lot of corn and stuff in it.

Start with real food, fruits, vegetables, meat, pork, poultry. If you can pick it, if you kill it. You can dig it up. Those are the things you want to give your kids.

Welcome to the Functional Edge. I'm Dr. Julia Ward and this is where science meets real-world strategies for living healthier, sharper, and stronger. From uncovering hidden environmental toxins to unlocking peak performance and mental clarity, we cover it all.

Ready to take control of your health and thrive? Let's dive in. Hello and welcome to the Functional Edge podcast. I'm your host, Dr. Julia Ward, medical director and founder of Balanced Body Function Medicine.

Today, we're honored to welcome Dr Paula Kruppstadt to our show. In this episode, Doctor Paula will be sharing insights on nutrigenomics, early childhood development and the root cause approach to developmental delays in autism, helping parents better understand how genetics, environment and nutrition shape a child's brain and long-term health.

Stay tuned for an engaging conversation that promises to empower and inspire your path to wellness. Welcome, Dr.

Dr. Paula Kruppstadt's Path to Functional Medicine

Paula. Thank you so much for being here. Thanks for having me, Julia. This is going to be fun. Yeah. Awesome. OK. Well, what led you from conventional pediatrics into this route caused in functional medicine?

Yeah, you know, that's a great story. I had functioned as a pediatrician for many years, worked at Baylor College of Medicine here in Houston, and then been a pediatrist for a local large children's hospital.

And I have been watching all of these children get sicker and sickier and more sick, including my own children. Then I took the conventional model, hook, line and sinker, But I ended up with three children with autoimmunity, one with severe juvenile idiopathic arthritis on a biologic.

And never once did they ask me, what are they eating? So my own health failed. My weight ballooned up to almost 300 pounds, and I would lose weight, gain it.

In my head, I knew what to do, but I couldn't translate that to my heart. I just started looking outside the box and found nutrigenomics. Part of my story too is that I had been clinically depressed and taken 11 to 13 different antidepressants off and on over 27 years, and I was finally able to wean off of those.

My own story, I think that's how so many people moved into it, but then how many children were getting sicker and we knew something was wrong and it had to change.

Yeah. What patterns are you seeing in children that made you realize something deeper was being missed? Well, you know, the most common chronic childhood illness is asthma.

It's one in 12. But some newer studies have shown that there's another illness that is even more common. Uh, it's 1 in 8. You know about 24, 25% of the population has an inability to turn off inflammation when they're exposed to biological toxins.

So you can get that when you live in a water damage building or you get Lyme disease because that makes a toxin. And so the patterns are increasing epidemics of inflammatory conditions and the rise of autoimmunity.

We all know about autism. The genes haven't changed, but the toxicity of our world has. Yeah, yeah, absolutely. So when you say get to the root, what are the most common root causes you now identify in kids?

Well, you know, our bodies are like a symphony. And when you're struggling with an illness, that's inflammation. A kid can't unzip their brain and go, look, Mommy and Daddy, my brain is hot, red, swollen, and painful.

Do something about it. How do they show up?

Inflammation, Toxins, and Root Causes in Children

They show with temper tantrums or pushing their abdomen against things or banging their head or acting out, being defiant, being emotionally dysregulated.

So when we look at the systems in the body and the things that are off balance, you begin with inflammation. And I use in my practice a little proprietary genetic panel that company allowed me to develop.

It has everything on there that I want. And the first thing we look at and that we see is inflammation. And so there's a lot of ways to dial that down, even for little children.

So you can smear things on their skin, you could give them liquids, drops, they can inhale things if they cannot swallow capsules. It's all about being creative and you know that's something really nice about adults.

They can just swallow something. But kids, we play this game where you're like finding something that we can do for them. So that's a big area. Right.

And so for listeners new to this concept, what exactly is Neutrogenomics and how is it different from traditional genetics? Yeah, so when you go see a geneticist, they look for the lesions or subtractions from your genes or additions.

Like, for example, trisomy 21, that's Down syndrome, and you end up with three 21 chromosomes. This is different. These are little individual base changes in certain genes.

When you think about your car, you add gas, and when you run out of gas you don't have any left. There's steps along the way and there are some things that there's a rate limiting step.

You get what you get, if you can't make something you have to give it back. but in the right order and an intelligent sequence. So we're not just talking about the types of foods that you eat or the type of exercise you do.

There's a lot of pop-up things like you need this and you that to eat, but this is different. This is looking at Say, for example, we'll go back to inflammation.

It's looking at certain enzymes and certain genes. And there may be what we call broken-on switches, meaning you have a very aggressive immune system.

So you get allergies, you gets sick, and when you sick you run high fevers. I don't care so much about aggressive on switches, but if you can't turn the inflammation off, you have to do something about that.

And in these chronic illnesses in children, that's what we see, these broken off switches. So, it's all about

modulating different systems. So in our bodies, we have something called the endocannabinoid system, the cannabinoid system.

Toll-like receptors, big fancy-dancy names to just say, when I meet with parents, we need to like block this broken receptor that keeps spitting out the bad guys.

And we're going to use it with this topical CBD that doesn't have THC in it, or with topically low-dose naltrexone, and also things like fish oil and vitamin D and things that.

But it's systems, so inflammation is one of about seven different things we look at. Okay, yeah. And that leads me to my next question is, which genetic pathways tend to matter most in neurodevelopment?

Is it methylation, detox, mitochondrial function, or inflammation? Well, you know, I've said inflammation over and over again, but I would say predominantly inflammation, mitocondria, and then also methyilation.

Those are the biggies. Another thing that really pops up, though, and this is this parrot's neurodegeneration. So adults with dementia, Parkinson's, ALS.

I also treat some adults and we have, you know, family nurse practitioners and adult MD here. But some people want to see me and I'm like, I can't be your PCP, but I could sure be here functional medicine consultant.

And I will look at the genetics of a kid with autism. with an adult with a neurodegenerative condition and they're almost identical.

Nutrigenomics and Key Genetic Pathways

Wow, that's so fascinating. Yeah, so inflammation, mitochondria, and methylation. Do you see recurring genetic patterns in children with developmental or behavioral challenges?

Yes, yes. It's kind of that little trifecta there that I mentioned, the inflammation, methylation, mitochondria, and another big one. And if parents are listening and they are like, my kid gets hangry or I get hangy and I'm going to chew my arm off, That's called autophagy and you know we all know about that with like intermittent fasting and how good it is for you because it helps your body induce autopathy to clean the cells out.

Well if you're sitting around and your kiddo has to eat every couple hours and a lot of these little kids in classrooms with neurodevelopmental challenges, ADD they're pinging out of their seats or they are just angry and pissed off and you're like, I just can't seem to make them happy.

Feed them. But when we look at this, their cells can pull the glucose in from their bloodstreams. So there is a vitamin that's a mirror image of something, one of the B vitamins, and it allows insulin to bind to cells and glucose to come in.

And if you start using that, then a lot of times we will see these children calm down. They don't have these major ups and downs. You know, but they're a little calmer.

And in our kids that are non-verbal, it's like for the first time, they have fuel all the time and they start speaking. Wow. So we put all of our nonveral children on this supplement that allows insulin to come in.

It's called D-chiroinositol. Okay. Yeah, I use like about a thousand milligrams twice a day for these non-verbal kiddos and oh my gosh, it's a game changer.

For myself, have impaired autophagy. I stopped taking it for a while and my hemoglobin A1c started drifting. It got all the way up to 5.7. I started using that again faithfully.

Never miss a dose now. And my Hemoglobulin A 1c went right back down to like 5.1 or 5 2 within about five

months. Wow, that's great. Yeah. So it really helps fuel for the brain.

You've said that parents can begin supporting their child's vulnerabilities early. How early are we talking? We are talking from the womb. So for mothers that are pregnant, if you're concerned about, say, autism or neurodevelopmental challenges or let's say it's not your first baby, or if that mama has any autoimmunity at all, We know the thing that helps our child's brains develop is getting folate into the brain.

They're called cerebral folates receptors and they line the brains and help with neurologic development. Well, we know that gluten which is in barley rye, oats, wheat, spelt, and then also dairy.

How's milk, dairy, sheep, goat? And there's just so much confusion about this. The science is there. It doesn't matter if it's A1, A2. Cheese is worse because it is concentrated casein.

These foods, gluten and caseins, creates short-chain opioids called gliadorphin and casomorphin. And they cross the blood-brain barrier and they bind to opioid receptors, but they also block cerebral folate receptors.

So if a mom wants to be proactive, stopping consumption of those things, even while the baby's in the womb. And then when your little ones popped out, you just don't have any idea if they're sensitive or not.

But if the start having trouble with nursing, that kind of a thing, then you can remove the gluten in 100% and see if that improves things too.

Early Intervention, Pregnancy, and Infant Signs

Then once they're born, and I always carry this around, it's a little sample box. It's like our little panel. And it looks like a Little Mastura wand.

Even for a brand new baby, we just do 30 minutes away from breastfeeding or they wake up immediately. We paint circles on the inside of their cheeks, lift up their lips.

and get a little DNA beside that little piece of tissue that's right in the middle and send that off. And then we can meet with parents right away and let parents know how they can start what mom can take and what you can put on the baby's skin or start offering very early to give them what they may be incredibly deficient in.

Yeah, especially if, yeah, if they've got an older sibling with autism and they're like, we saw them regress when they got vaccines. I'm not anti-vax, I am pro-patient, and pro immunization.

And what's the difference? All these things we get are called vaccines and are supposed to induce immunity where we can get antibodies. But, you know, pediatricians do not typically check antibody levels.

And that's something we do here, if kids come to us partially vaccinated. I've seen a child develop robust antibodies with just one tetanus shot. One.

Yeah. Then they're good. Why do they need five? We check again down the road, so you asked about what they could do. Clean air is really important, like a really good air purifier, clean water, and getting lots of sunshine.

Mamas need sunshine, so do little bits. And then movement. You know, as functional medicine practitioners, we talk about lifestyle stuff, but sleep for kids, covering the smoke detector, completely black room, blackout curtains.

cool room, learning to sleep is a skill and that's going to support, you know, the brain cleaning itself out at night. Yeah, awesome. And what subtle signs and infants concern you that are often dismissed as quote normal?

Oh, that's a good question. Well, everyone thinks eczema is normal now and skin irritation and it's really not. You know, and I know that the skin is a reflection of the gut, but that could be something showing that your baby doesn't have a detoxification agent in the body and that is called glutathione.

And there's lovely watermelon and orange flavors, cocoa mint you can put in the mouth. There's also topical glutathione to kind of drive that inflammation down.

Another subtle thing that gets dismissed, a lot of moms just take it for granted that their baby can't breastfeed. More and more lactation consultants in hospitals are aware of this, and a wonderful lactating consultant taught me how to recognize this.

I wasn't taught this in medical school. How to recognized tethered oral tissues so that if an infant cannot latch, they may have a tongue tie but they may be able to protrude their tongue outside their mouth, so that's not good enough to know.

So it can be upper, lower, not being able latch well, skin outbreaks, and just an inability to settle, okay, an inconsistent bowel movements. Those things That's really important.

I mean, your baby needs to be able to poop well, you know, and once they start on solids, they should be having one to three good little poopy doopies every day because you're giving them a lot of fresh fruits and veggies too.

Yeah. Great. And how much of brain development would you say is shaped during pregnancy versus the first year of life? You know, that's a great question that I really can't opine a whole bunch on, but I will say the hard wiring is there, okay?

And if a family has lived in a moldy apartment, your baby could come out of the womb already affected by this biotoxin illness because it's suppressing what's going on in their hypothalamus.

They may not And, you know, kind of segueing on what you said previously, another subtle sign is if children do claw hands like that. That's a sign of profound inflammation, prolonged bedwetting past the age of six, fatigue that doesn't fit, if the three-year-old's running around at the park.

and all the other three-year-olds are running around, but your three year old has to sit down, that lasts more than two weeks. That's significant. Something's going on.

Prolonged headaches that you can't attribute to a good doctor, a nurse practitioner, PA, is going to make sure that they have a normal neurologic exam.

You got to rule out a brain tumor, things like that, something wrong with their jaw, their airway. But a kid should not have headaches. Okay? Because even little ones will do that.

Chronic abdominal pain. A child should not have belly pain, you know, more than a month. You don't have a reason for, and they shouldn't to have chronic diarrhea either.

And then the whole ADD, ADHD thing. What if that is a sign of brain inflammation or exposure to a water damage building or an infection that's going undiagnosed?

I'm sorry I digressed. That's okay. Back to your original question about pregnancy and in the womb and one year. First year of life. Yeah, first year of life.

I'm telling you, so much development goes on that first-year-of-life. Every day an infant is changing and growing, and you can miss subtle, subtle deficiencies.

Autism, Functional Improvement, and Environmental Triggers

Like, that's why, even if a parent is not vaccinating and they come to our practice, we're like, hey, were looking for these subtle little changes, because even you do everything right, Bad things can happen, and we want to prevent that or catch it as soon as possible.

So, you know, think about an infant that's completely 100% dependent on you when they pop out of the womb for everything. They pee, they poop, the sleep, make noise.

And they sleep 18 to 20 hours a day when the popout. to being able to speak and walk and feed themselves and use fine motor movement and maybe run like Frankenstein.

So a huge amount of developments. I guess I could talk about that, but it's a lot. Yeah, definitely. What would you say are the most common biological contributors you find in children with developmental delay?

Well, inflammation, number one, that's either they've gotten infections or they're bearing too many toxins. So what do you need to take away or what you do need give them?

And so same principles hold up for adults. when they show up with dysfunction, but most commonly in children, it's either infection or undiagnosed inability to dial that inflammation down.

And that's where having these genetics is like a window into their soul. We have so many healthy children, and we ask them to do the swab. I mean, it's a once-in-a-lifetime thing.

It never changes, but the needs may go up as they grow. And then we hit them at various stages. But it is just such a gift because it can help parents be proactive and preventative Yeah.

We can't. I think genomics is fabulous because it just takes the guesswork out of what you're doing. It just gives you that blueprint for what this child needs, specifically.

Yes. What do you think parents often misunderstand when their child receives an autism diagnosis? I think they think that they're stuck and there's nothing they can do except what's called ABA therapy.

So when you go see a psychiatrist, a developmental pediatrician, or a pediatric neurologist, they say the only evidence-based therapy that will improve your child's outcome is applied behavioral analysis.

It's a very regimented, repetitious, full-time enrollment type thing. to not this way but that, not that way, and speech therapy, occupational therapy and physical therapy.

But I would say many times part of the evaluation is obtaining something called fragile X testing in a chromosomal microarray. That's the genetics that people are looking for.

But when you go see a geneticist, they say, sorry, this is associated with this, but we don't know the impact of it. Or there are certain genes that correlate with autism, that we do not know necessarily if it causes it or not.

And have you seen a meaningful functional improvement in children on the spectrum? And what tends to improve first? Yeah. Oh, I love that question because I would say I'm here to tell you that, yes, we have seen children lose the diagnosis of autism.

Wow, that's amazing. Yeah, I'll give you a case in point. They live here in the North Houston area and it's March 2026. This little girl went to a premier children's hospital when she was two years old and she walked out of that developmental assessment and was just numb.

And all they could offer her was ABA. Well, the mom and the dad were like a dog with a bone. And so was I. They came to see me. We did precision genetics.

Not too many things were changing. And this little girl was developing pretty much normally up until the age of two. Then they moved into this particular house and she stopped talking, selective mutism.

But you know, you'd look at her and it seemed that she could understand some of the things, but she was, non-verbal. And it was breaking the parent's heart.

So we did those genetics and I begged them to test their home for four years for mold and they didn't do it and didn' do until they had another child who had recurrent infections and then several members of the family developed, the mom and the dad developed some problems.

And it turned out that their home was severely water damaged. And as soon as they got out, this little girl, and then we put her on a prescription binder.

She's now, I believe, mainstreamed in third or fourth grade. Her mother took her to the school system and said, "I want you to retest her." She did not come up meeting the diagnostic criteria for autism.

to even receive that diagnosis, they sit there with a checklist and go through the checklist, and say, your child has autism, level one, two, or three, you know, mild to severe.

Sorry, there's nothing you can do except therapy. So they are incorporating these different systems. You know we mentioned inflammation, so using Some, I don't use a lot of medications, but a few.

And there's even one for what we call brain regeneration, neurotropic. Tropic or trophic means growth, as you know, Julia, neurologically. There's spray that you can put up the nose or a liquid that will help people make new synapses.

We tend to use that too. Soon I'm going to be interviewing that mom. It's that, in fact, next Monday morning. That's great. I would just like to give parents hope because you know in your heart of heart you would lay down your life for your child.

Yeah. And so doing the precision genetics is step one. Then checking the environment. then we partner with people to help give them what their child needs or doesn't need.

Now, if they have severe ticks or other things like that, we're going to search for infections that might be causing that. And it's not just, oh, here's your genetics, do this, everything's peachy.

Everybody's different. A lot of these kids can have undiagnosed Bartonella or Lyme disease or Babesia, things that happens in Texas, too. So, yeah, awesome.

Well, you work with both children and adults. What similarities do you see between developmental delay and adult neurodegenerative conditions?

Shared Patterns in Childhood and Adult Neurodegeneration

Yeah, we touched on a little bit of that before, but we see in adults with this neurodegeneration, some that can't be, you know, necessarily classified, that a lot of brain fog or dementia or cognitive decline, word finding, recollection issues.

We see that inflammation that's not being addressed. Then many of those people also have that autophagy where they can't pull fuel into their cells. And then many, and this is kids and adults, their bodies can take out the trash.

So they cannot detoxify. They cannot poop out, pee out breathe out sweat out garbage the right way and it just accumulates. Then the other commonality is they cant deliver vitamin B9, the kind of folate to their brain and their cells, and many of them have those brain regeneration things that don't work right, so they're almost identical, really.

So then the one piece I didn't mention, you know, many us, we don' like to talk about mitochondria, but I love mitochondrion now. Back in high school or college, people would say, you know, the batteries or the powerhouses of the cells that make ATP, which is energy.

Adults with neurodegeneration, many of them have mitochondria that run out of juice. And a lot of times they get to

a point, their cells build up so much debris and garbage, then they really take a hit and maybe they start taking a statin.

and they had mitochondrial deficiencies or problems, and then they hurt all the time, they lose their mind, you can't think. And so we see the same thing with little children with neurodevelopmental things, the ticks, ADD, ADHD, autism as we do in adults.

It's crazy. Yeah, that's amazing. That's really amazing, so if a parent is concerned about their child's development, what are the first three things they should address?

I touched on this earlier, but I'll say it again, diet, so I remove inflammatory things if you can't pronounce it, if there's a ton of sugar, and the thing is with the gluten in the dairy being addictive, you don't want to get in a gluten-free crap trap like walking down the Gluten-Free aisle and it's got a lot of corn and stuff in it.

You know, start with real food, you know fruits, vegetables, meat, pork, poultry. You can pick it, if you can kill it. If you could dig it up. Those are the things you want to give your kids and we all are caught in the instant gratification thing where we want just grab something and do that.

Fortunately, we can get some of those good things. You can wild caught salmon at Costco in those containers. Most of the kids I see are eating peanut butter and jelly sandwiches, chocolate milk, goldfish, and hot dogs.

Well, replace the hotdogs with Hebrew national. OK, start there. And then start taking away the milk. The milk it's first the eye contact. A lot of times we get that back when we take the milk out.

Oh, interesting. Yeah, so diet and lifestyle, that's number one. Then, of course, check your, you know, clean air. There's a company called Envirobiomics.

They're over in San Antonio where you can do like a little Swiffer test of your house. I wouldn't necessarily call a mold inspector because they will find mold, but I would do a test yourself first to see if it looks decent.

And by air purifiers, and then clean water, so those three things. But if a parent wants to do something, I would say you could give them a little bit of vitamin D3 with K2.

The two go together. We don't give D alone, because otherwise it pulls calcium out of the bone, deposits it in the arteries and the kidneys. So we always put the two together, And also fish oil.

So the kid's arms should be smooth, and that's another subtle sign. If they've got lumpy, bumpy skin, like chicken skin that means they might be deficient in omega-3 fatty acids.

First Steps for Parents: Diet, Air, Water, and Supplements

And there's some really good brands out there that are clean and vetted and tested. So those are three simple things that parents can do. diet, air, real food.

Yeah, that's awesome. And I totally understand, like, if you're a parent, and you are kind of in that survival mode of just trying to get food in the child, you know, it's difficult.

It's really hard sometimes, especially if the kid is acting out and, but it does make a huge difference for everything. Why do you think that we are seeing so many more neurodevelopment issues today?

Well, you know, our genetics haven't changed, but the toxicity of our environment has. You know Julia, I think I don't know how close we are in age or not.

My kids are like 19 to 31, so I might have you beat by a decade or so. I dunno. Oh my kids, great. Okay, yeah. I started late and ended late, so I was like 30 on before I had my first bite.

But I would say, number one, the number of vaccines that we have given to our current generation of children, And you know the Department of Health and Human Services with RFK Jr.

in office, the CDC has agreed that our current vaccination schedule, they call it immunization, I call vaccination, needs to change and be more European.

And so that just blessed my heart when I saw that through and saw come through. But also, I would say it hit your generation, but definitely mine. I see the beginning of disposable diapers, melamine, Tupperware, plastic, and now we've gone full circle to where, you know, herbicides and pesticides to now everybody knows how bad glyphosate or Roundup is, it's still out there.

And then stainless steel and glass should be used instead of, you know, plastic. I mean, my family thought it was crazy when I gave away or threw away all my Tupperware and started using glass and silicone lids and stuff.

And, in people who live in farming belts, the amount of pesticides and herbicides had gotten into the groundwater. And these kids are out there playing in the dirt.

They get pesticides blown at them. And they're carrying this huge toxic load. So if you look at California's worse, I mean, California is really bad, and then you've got the farming belt.

But it's a combination. It's like we've just been adding poison. to our food supply and glutamate and you asked me before I was going to say to you know sugar preservatives but go with natural sugar like honey and dates and date syrup and maple syrup but yeah it's toxins that's why we're seeing the explosion.

Yeah okay well if you could give one piece of advice to every new parent holding a newborn what would it be? I would say speak words of life and love over them because if you tell them and you just count your blessings every day, but you'd tell then you don't voice your fears.

You know, you speak the truth in love and, just do your best and don' live in fear because that paralyzes us. And there's so much in this world to be fearful of.

So look them in the eyes, talk to them. read to them and, you know, speak life-giving words. That's great.

Why Neurodevelopmental Issues Are Rising

Well, if people want to get in touch with you and find out more information about your office, how do they do that? Yeah, so we are in the North Houston area.

Our practice is called Hope for Healing. It's not just me. We have, I think, five medical providers and one genetics person. Well, almost two that are interpreting the genetics because it's the foundation of all we do.

And that's, the primary reason why we've had so few children diagnosed with autism that have incorporated that in our practice. But it's hope for healing, and our website is GetTo with the number 2, theroot.com.

Gettoetheroot. com. So thank you. Yeah, absolutely. Absolutely. Well, thank everyone for joining me on the Functional Edge. I hope today's episode gave you fresh insights and practical tools to level up your life.

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Thank you for joining me on The Functional Edge.

Closing Advice for New Parents and Contact Information

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