

How Poor Microbiome Health Contributes to Chronic Health Problems

Michael Roesslein:

And what specific... I know people often affiliate probiotics or gut bacteria with digestive problems or everything just to do with digestion, but there's so many more, like we mentioned at the beginning, there's so many more health problems or solutions that involve the flora, the gut bacteria. What are some links between gut flora and other health problems that might not be digestive in symptom nature?

Kiran Krishnan:

We see this all the time in the clinics that we have, that we work with patients. Very direct, but ones that people don't typically associate like sinusitis, chronic sinusitis. Many people have allergies and sinus issues. All of that starts in the gut. A lot of times, you want to treat sinusitis with antibiotics and all that, but that actually makes it worse. It actually weakens your gut more and exposes you to more inflammation in the sinus cavity. One of the interesting things that you find out is that the gut mucosa, which is where 80% of your immune tissue is, is reflective of mucosal tissues in the rest of your body. Your genital mucosa, your pulmonary, and then your sinus as well. You get a lot of sinus infections, a lot of times it's a reflection of your gut mucosa itself, having too much inflammation, having too much innate immune response, and being inhabited by the wrong types of bacteria.

And so things like sinusitis, allergies, asthma are big. In Europe, in fact, they've used a probiotic called Enterogermina, which is a *Bacillus clausii*, and that's been used pretty widely for kids with recurrent respiratory infection. You think, well, I have a respiratory infection, how does that have anything to do with my gut and bacteria? That's one of the most effective treatments for it, is treating the gut, which then changes the mucosal tissue in your lungs itself. And then things that are totally out of whack that you would never imagine, like rheumatoid arthritis, joint pain. A lot of people with joint pain will never think that fixing their gut would fix their knees, but fixing your gut will have a bigger impact on your knees than anything else you can do for your knees.

Surgery and glucosamine and chondroitin and things like that, that have positive effects, but really the core of the problem comes from the gut. It's an autoimmune condition. Even one, and I'll throw out a crazy one, things like kidney stones. A lot of people suffer from kidney stones. Kidney stones is the absence of a bacteria called *Oxalobacter*. *Oxalobacter* within the gut is important for breaking down oxalate, and oxalate is a thing that we get within our food. If you get too much oxalate accumulation in your body, it ends up getting stuck in your kidneys and forms tiny little rocks that people suffer with. There's all kinds of fancy therapies and things like that for kidney stones, but *Oxalobacter* is being killed off by a lot of antibiotic use and things like that. You start losing *Oxalobacter*, you start developing kidney stones.

It's quite fascinating the connections that we're seeing, but any immune dysfunction, allergies, asthma, psoriasis, eczema, all these things are so directly associated with your gut. And then so is the big thing that everybody wants; weight. Weight loss, they have now identified what they would consider to be a fat microbiome. People who are struggling with weight loss, or who struggle with losing weight, and you hear the people all the time, they say, "You know what? I've tried every diet there is. I've tried to exercise, I just can't lose the weight, or I put on weight really fast." It's because they've got a bacterial confirmation within their gut that actually supports weight gain and retention. And so it's not them, they are trying, it's the bacteria that's causing them to retain and gain weight.

Michael Roesslein:

Do they have an impact on how the food is metabolized or how many calories are taken from the food, or how it's stored? Where's the connection?

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Kiran Krishnan:

There's two major parts to it. One is, people with that type of bacterial confirmation actually extract more calories from each gram of food than someone that doesn't. You could eat a hamburger, I could eat a hamburger. If I have the overweight bacteria in my gut, I would get a lot more calories out of that hamburger than you would. And so for you, it'd be like eating three quarters of a hamburger; for me it's like eating a full hamburger. And then the second part of it is the cravings. That article I mentioned about My Bacteria Made Me Eat a Cupcake, they actually, people have a sweet tooth. You've heard that for hundreds of years. The sweet tooth comes from the bacteria within your gut actually creating neurological need for sugar. They actually can produce neurotransmitters that make your brain want you to go and eat sugar. And though that's fascinating, your dietary habits are controlled by the gut bacteria.