

## **The Incredible Ecosystem Inside Us - Our Microbiome. (Understanding Gut Health)**

We can't talk about gut health without talking about our microbiome. Our microbiome is an enormous community of bacteria, fungi, viruses and archaea<sup>1</sup> (the oldest types of organisms on planet earth) that interact with us and have a massive impact on our mental and physical health. To understand how big this impact really is, let's have some perspective. We have approximately 30 trillion human cells in our body and we have over 40 trillion microbes in our gut alone<sup>2</sup> - meaning that we are essentially more microbe than human. These microbes are situated in our large intestine and I like to get clients to think of this ecosystem like a lush rainforest. A healthy microbiome is a bit like a tropical rainforest - teeming with life. There's a huge diversity of plant and animal life, from giant trees, small saplings, ferns, moss, fungi, insects, birds, mammals - all of these species interact with each other and contribute to the health of the whole ecosystem - insects and birds pollinate flowers which become fruits to feed larger animals, these animals eat the fruit and spread the seeds through their droppings which create new trees. When old trees die, fungi break them down and release their nutrients back into the soil to sustain new life.

When an ecosystem is balanced like this it can continue to sustain itself for minnenia. The science of the microbiome and the gut-brain connection show that the more diversity of microbes we have in our gut - the more resilient our gut-ecosystem is<sup>3</sup> and the best benefits we will get from having this healthy team of microbes working for us - like improved mood, energy, focus and overall health<sup>4</sup>. When we have a diverse ecosystem of beneficial bacteria we have ones that are producing neurotransmitters that are critically important for mood and brain health, we have ones that are helping us to digest our food and absorb more nutrients from it, we have ones that are producing incredible compounds like short chain fatty acids that feed and nourish the cells of our colon and keep them healthy as well as reducing inflammation in the body and brain, leading to better mood<sup>4</sup>.

We get into building a healthy gut later in the course but a key takeaway to begin with is that our microbes eat the food we eat. When we eat fiber from whole plant foods our microbes digest it and produce all these incredibly beneficial compounds to help our mental and physical health<sup>4</sup>. But when we don't eat a lot of processed foods we create a microbiome of non-beneficial bacteria that negatively affects our mood and wellbeing<sup>5</sup>.

A healthy microbiome is absolutely key for optimal mental and physical health. Our microbes are connected to our immune system, regulate our metabolism, balance our hormones, affect our brain health, (like we talked about in the first video) and even can affect our genetic expression. There is nothing in our bodies that they don't affect. The fascinating thing is that the most important thing for human health isn't human, it's the microbes living in our colon<sup>4</sup>.

So if that's what a healthy microbiome looks like, what does a damaged microbiome look like - and what's causing it?

## References:

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