

Gut bacteria chart our destiny

This article originally appeared on Dr. Perlmutter's website.

I have just finished reviewing what I believe is a seminal research article relating to the gut microbiome. The study, written by researchers in Sweden, is titled *The Gut Microbiota—Masters of Host Development and Physiology*, and recently appeared in Nature Reviews Microbiology.

If you've been following my blog, you are no doubt aware of my keen interest in the role of the gut bacteria, the human microbiome, in the context of how these organisms relate to disease processes. Further, my new book, *Brain Maker: The Power of Gut Microbes to Heal and Protect Your Brain—for Life*, is focused on exploring the underlying research that relates these bacteria to various processes that can then affect the brain, as well as the various lifestyle factors that can be modified to enhance the health of these bacteria, and therefore translate into a better environment for brain health.

I can assure you, there is an abundance of research that is ongoing, exploring the powerful role of the microbiome in human illness. But what these researchers describe is the powerful relationship of the hundred trillion organisms that live within us in terms of our normal bodily function and even with the development of our organ systems.

They eloquently describe how the human microbiome first appears, meaning how we first colonize our gut by passage through the birth canal, and how these bacteria then pave the way for future colonization with healthy bacteria moving forward.

They then explore various modifiable factors that dramatically affect the gut bacteria and are associated with alterations of our physiology. They included a discussion of antibiotics, exercise and other lifestyle issues, diet, and even our obsession with hygiene.

The body of the article is certainly quite in-depth and scientific. But what is so striking is how the authors pursue the relationship of the microbiome not just to various medical conditions, but more importantly, in the actual production of human organs, the development of our immune systems, the function of our gastrointestinal systems, and a variety of other physiologic functions that really aren't generally associated as yet with the bacteria that living within us.

As they state:

Research over the past decade has accumulated a large body of evidence linking alterations in the gut microbial composition to several diseases, such as inflammatory bowel disease, asthma, arthritis, obesity and cardiovascular disease. Furthermore, it is now clear that the normal intestinal microbiota also influences numerous physiological aspects in the healthy host, including organ morphogenesis, immune system and gastrointestinal tract development and maturation, intestinal vascularization, tissue regeneration, carcinogenesis, bone homeostasis, metabolism and behaviour.

This dramatically raises the importance of our understanding of the microbiome. Basically, this information is breathtaking and clearly serves as a harbinger for defining where science is going to take us in the future.

We live in a time when science is making great progress in developing cures for various illnesses. Unfortunately, at the same time, we are seeing issues like Alzheimer's disease and autism virtually exploding on the scene with no meaningful understanding about what can be done.

As these authors so clearly point out, the changes that are happening to the microbiome may well be associated with these and other unexplained diseases. They make it clear that we are modifying a fundamental control point in our most basic level of physiology. But rather than curse the darkness, lighting the single candle of hope should be what is taken away from this report. That is, we can change so many factors over which we have control to gain a more healthy, robust microbiome. This will no doubt enhance our chances of becoming more disease resistant, and in living a longer and healthier life.

[Click here](#) to listen to Dr. Perlmutter's recent appearance on the *Intelligent Medicine* podcast.