How Bacteria in Our Bodies Protect Our Health

Researchers who study the friendly bacteria that live inside all of us are starting to sort out who is in charge—microbes or people?

By Jennifer Ackerman

Biologists once thought that human beings were physiological islands, entirely capable of regulating their own internal workings. Our bodies made all the enzymes needed for breaking down food and using its nutrients to power and repair our tissues and organs. Signals from our own tissues dictated body states such as hunger or satiety. The specialized cells of our immune system taught themselves how to recognize and attack dangerous microbes—pathogens—while at the same time sparing our own tissues.

Over the past 10 years or so, however, researchers have demonstrated that the human body is not such a neatly self-sufficient island after all. It is more like a complex ecosystem—a social network—containing trillions of bacteria and other microorganisms that inhabit our skin, genital areas, mouth and especially intestines. In fact, most of the cells in the human body are not human at all. Bacterial cells in the human body outnumber human cells 10 to one. Moreover, this mixed community of microbial cells and the genes they contain, collectively known as the microbiome, does not threaten us but offers vital help with basic physiological processes—from digestion to growth to self-defense.
The complex relationships between humans and bacteria are fascinating. Many are (at first) horrified to learn that the average person possesses over 100 TRILLION bacteria (including perhaps a billion or more E.Coli) in and on our bodies. Interestingly, our bodies frequently live in symbiosis with these bacteria: for example, bacteria such as E.Coli in our gut synthesize Vitamin K, a vitamin important for blood clotting. Individuals taking certain antibiotics may experience a nearly 3/4 reduction in Vitamin K production.

If you’d like to read more on fascinating topics within science, medicine, and technology, feel free to browse my blog: http://biginscience.com/
Antoine Béchamp discovered and promoted this fact well over 125 years ago (see "terrain theory"), yet he was ridiculed and dismissed by the scientific community at large in favor of Louis Pasteur - who insisted that a "healthy" human body was completely sterile. So Pasteur's inadequate teachings became the ruling medical paradigm, and Béchamp's considerable body of research was put aside and forgotten. If we had listened to Béchamp, we would have accepted that "the human body is not such a neatly self-sufficient island after all" ages ago and our current progress and understanding would be light years ahead.

That would be Antoine *Bechamp (apparently the commenting system doesn't display accented letters)

Interesting point about Pasteur. I did not know that he thought the body was sterile.

It is evident that human life is in symbiosis with bacteria, as well as other environmental agents. The point is how is it possible recognise at the bedside when life is encouraged, or not, by bacteria?

Why is there so much autism, ADHD, food allergies, asthma?? Changes to the human microbiome (in combination with other environmental factors) is what is leading to an unprecedented number of children developing autism, ADHD, food allergies, asthma and many more chronic conditions in the industrialized world. Yes, imbalances in our microbial ecology are resulting in dysregulated immune systems; What's more, commensal microorganisms are also responsible for helping us to detoxify and eliminate environmental toxins as they enter our bodies (including heavy metals, pesticides, and other chemicals). See Rowland et al., Archives of Environmental Health 39, no 6 (1984):401-8; there are volumes of articles published in the medical literature on this subject. We are raising an entire generation of immunocompromised children because the human microbiome (and thus immune function) has been altered considerably over the last few decades in America. To learn more, see A Compromised Generation: The Epidemic of Chronic Illness in America's Children www.acompromisedgeneration.com or Epidemic Answers www.epidemicanswers.org

I have read that there are about 10+13 cells in the human body.

If we were to assume there to be ca. 10 times as many bacterial cells in our constitution, that would make ca. 10+14 bacterial cells

If the bacterial cells are about 1/10 the size, & therefore guesstimating to be about 1/10 the weight of a human cell, then the weight of the bacterial cells would be ca. equal to the weight of the human
cells.

So a 150 lb person would be 75 lbs "human" and 75 lbs "bacteria".

It would be interesting to know how this number (10 times as many bacterial cells in a human) was derived.

Any microbiologists reading this thread??