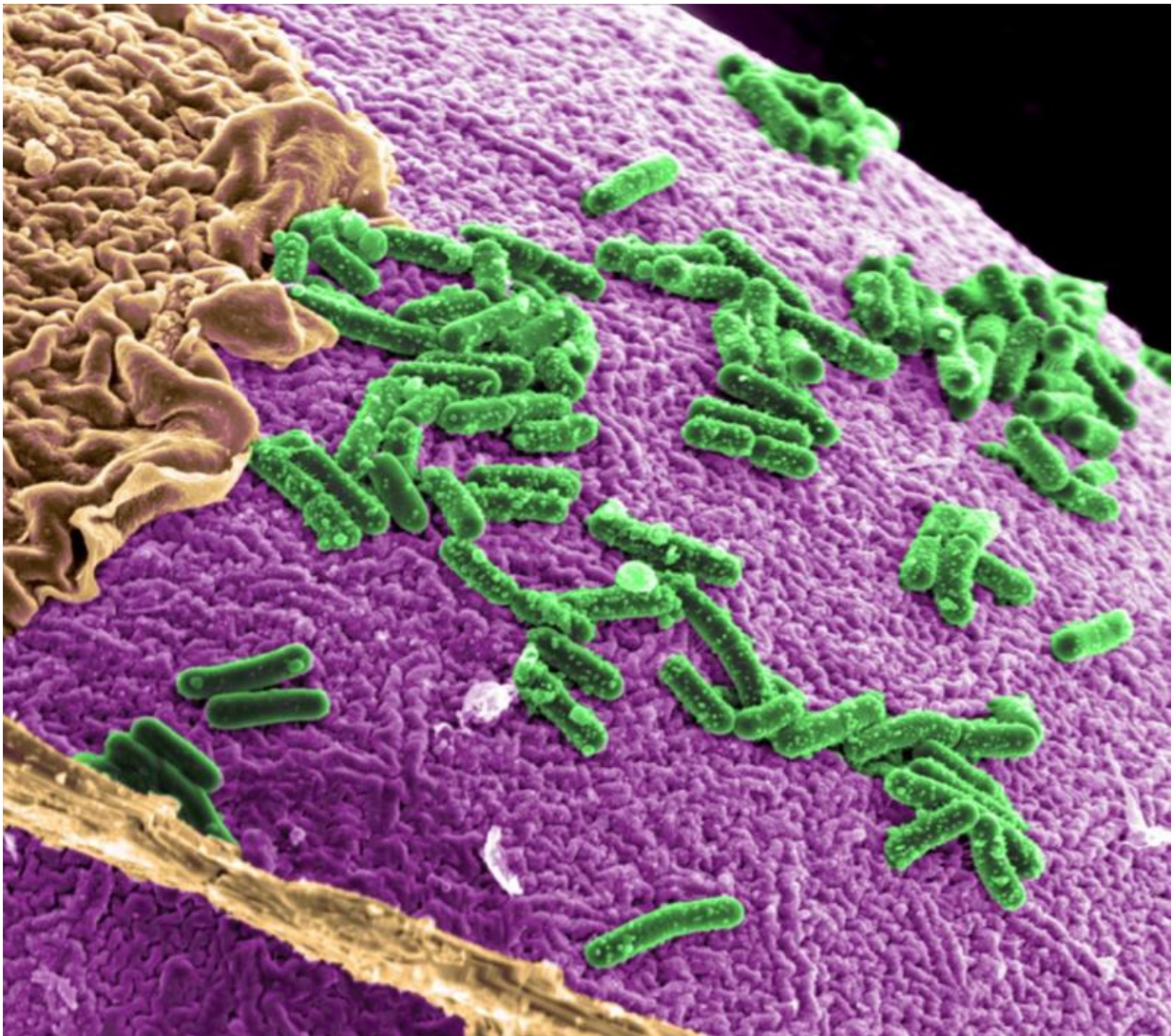


# New research finds balance between 'good' and 'bad' bacteria in humans altered

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Credit: Courtesy of Pacific Northwest National Laboratory

Researchers from Macquarie University released new findings this week about the 'good' and 'bad' bacteria that live inside the human body.

In the paper published in *Genes – Open Access Genetics & Genomics Journal*, Professor Michael Gillings, Professor Ian Paulsen and Dr Sasha Tetu examined how the microorganisms that make up our microbiota might have changed over the course of [human evolution](#), and particularly changed in the last century.

"Our research examined how changes in human ecology and society over the last million years have impacted the microorganisms that live inside the [human body](#)," Professor Gillings said. "The microorganisms that live inside us are essential for our health, and many diseases that we are seeing in the developed world like allergic disorders, autoimmune diseases, and even anxiety and depression, are strongly associated with the microbial changes we've seen due to the way we live."

These changes were caused by the use of fire for cooking, the invention of agriculture, and the increasing availability of processed foods after the Industrial Revolution.

"But the most important factors are the use of biocides, disinfectants and antibiotics that immediately reduce overall microbial diversity," Professor Gillings said. "More and more evidence is accumulating that these changes to our internal ecosystems lie at the heart of many diseases whose frequency has shown a dramatic increase over the last half century."

Researchers say the challenge is now on to develop ways of managing the human internal ecosystems, so that in the future people can go to the doctor for a check-up of their microbial health.

**More information:** "Ecology and Evolution of the Human Microbiota:

Fire, Farming and Antibiotics." *Genes* 2015, 6(3), 841-857; [DOI: 10.3390/genes6030841](https://doi.org/10.3390/genes6030841)

Provided by Macquarie University

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