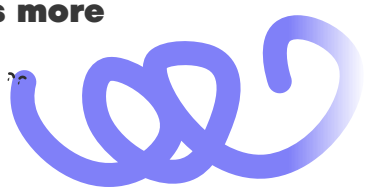
our beneficial bacteria in a gut

Just think for a second that **99** of the genetic material in your body are not humans.

Your first thought might be ancestral DNA – after all, it is passed down through generations. Or perhaps the genes that are responsible for our unique traits. Surprisingly, it is actually bacterial genes! As Rinaldo, a co-editor of Antennae's 'Microbial Ecologies' issue, observes "we are immersed in a microbial world, and we have a microbial world embedded in us. Indeed, these tiny inhabitants contribute **100** times more genes than our human DNA, making us more

them NOT US.

This ecosystem has been molded by generations of eating, and living, creating our evolutionary and cultural relationships between food, and indeed the environment; this is more than a scientific fact about bacteria - it is us. Now that our diets are somewhat removed from these traditions, researchers appreciate that such practices were not only a foundation for particular cultural identities, but also for the specific microbial ecosystems inhabiting us.

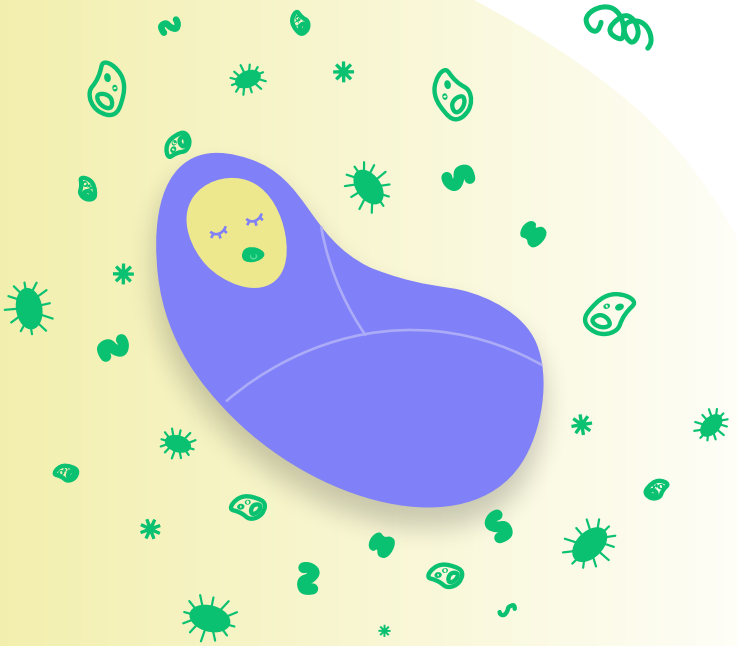


This research paper focuses on how diet at different times of the life cycle contributes to and sustains this vital community of beneficial bacteria (the gut microbiome), which is crucial for our health.

Trillions of bacteria, viruses and fungi inhabit our gut microbiome — the digestive system. The presence of these microorganisms in gut have been discovered since 1600, the correct term to reference this neighborhood of microorganisms, "gut microbiome", wasn't used till 2001. Since then, a lot of researches has proven how strongly diet affects our digestive microbes through the whole life.

The gut microbiome begins to develop at birth and is influenced in the early days by whether a baby is delivered vaginally or by cesarean. Vaginally born babies receive beneficial bacteria from their mothers, and as a result tend to have more diverse microbiomes.

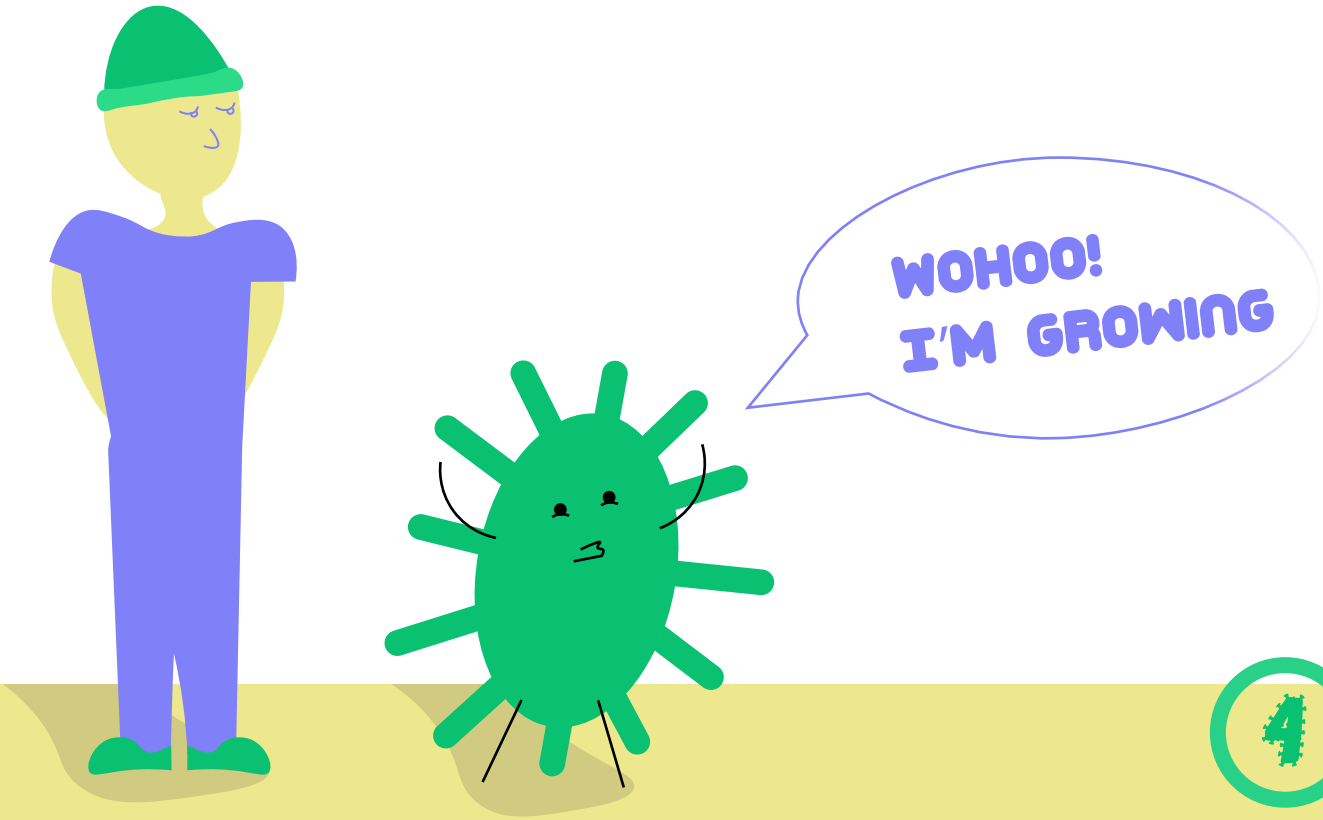
Feeding further shapes this underpinning of microbes. According to Farre-Maduell and Casals-Pascual, the German pediatrician Theodore Escherich also discovered that breastfed babies had a high degree of Bifidobacterium, an essential health bacteria.



The bacterial presence remained until the introduction of solid foods, which shows the impact of diet on the microbiome from very early in life.

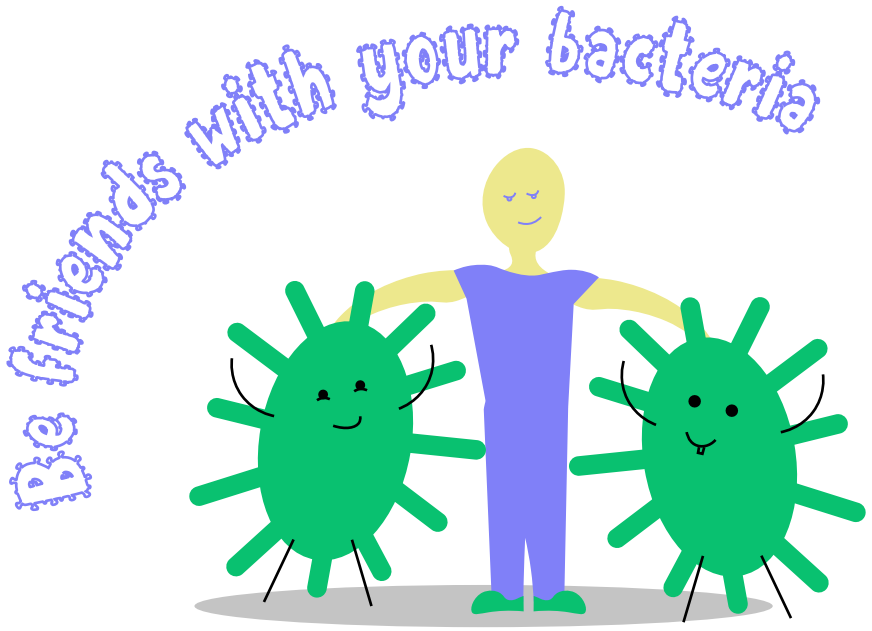
As we grow older, the composition of our diet provides yet another signature on our microbiome. Yoghurt and cheese are fermented dairy products that contain beneficial bacteria.

In 1908, scientist Ilya Metchnikov proposed that the lifespans of Bulgarian peasants correlated with their consumption of yogurt and thus high levels of bacteria in the gut, which served to inhibit growth at least some potentially harmful flora and afford an anti-aging effect.



While kids may reject these foods at first, exposure to fruits and veggies also builds the gut microbiome. Such beneficial microbial ecosystem is supported by plant-rich human diet as fiber enhances lactic acid bacteria, while polyphenols contribute to the growth of Bifidobacterium and Lactobacillus. More diversity in their microbial landscape tends to correlate with health and with a lower rate of chronic disease.

In the end, our diet from infanity to middle age is what sets us up for a well-balanced gut microbiome. Some traditional diets, recent research indicates, may provide clues for how to maintain a healthy balance among the microbes that are critical for long-term health and resilience.



Reference

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