

Studies of gut flora in infants and toddlers could lead to better health

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Breastfeeding until at least nine months of age increases prevalence in the gastrointestinal tract of *Lactobacilli* and *Bifidobacteria*, species which are known to contribute to development of a healthy immune system, according to a paper describing the establishment of the intestinal microbiota during the first three years of life. The research was published ahead of print in the journal *Applied and Environmental Microbiology*.

In the study, the investigators sampled the [gut microbiota](#) in the feces of 300 children at 9, 18, and 36 months of age. The nutritional factor with the greatest impact on the composition of the [gut flora](#) was the time of cessation of breast feeding.

"This is to our knowledge the first study to characterize the gut microbiota in such a large cohort of children for this duration," says corresponding author Tine Rask Licht, of the Technical University of Denmark.

The investigators also examined the microbiota, seeking enterotypes, or characteristic [microbial communities](#). While enterotypes tend to be stable in adults (absent antibiotic use or major changes in diet) the investigators found that one particular enterotype-like grouping was prevalent at 18 months and another at 36 months, but that children frequently flipped a few times between the two.

"This indicates that the microbiota is still not completely stably

established until after this time," says Licht.

"The research could ultimately lead to supplementation of infant formulas—or food for adults—with specific bacteria or carbohydrates expected to promote a healthy gut microbiota," says Licht. She and her collaborators are currently involved in studies testing effects of such pro- and prebiotics in animal models as well as in humans, she says, noting that in Denmark, several multinational companies are also involved in this research.

More information: The manuscript can be found online at [aem.asm.org/content/early/2014 ... 342-14.full.pdf+html](http://aem.asm.org/content/early/2014/.../342-14.full.pdf+html) . The final version of the article is scheduled for the May 2014 issue of *Applied and Environmental Microbiology*.

Provided by American Society for Microbiology

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