

Shutterstock



DELIVERY MODE AND DIET AFFECT INFANT GUT MICROBIOME

IN A RECENT DARTMOUTH-LED study published in *JAMA Pediatrics*, researchers showed that the way infants are delivered and fed can affect the variety of bacteria, or microbiome, in their intestines at six weeks of age.

In one of the largest studies of the factors that determine infant gut microbiome composition, researchers examined relationships between the intestinal microbiome of 102 healthy infants and both delivery mode (vaginal vs. cesarean section) and feeding method (breast milk vs. formula), including supplementation of breast milk with formula.

“Understanding the patterns of microbial colonization of the intestinal tract of healthy infants is critical.”

The study yielded some interesting and novel results—both delivery mode and feeding were independently associated with microbiome composition, with deliv-

ery mode as strongly linked as feeding, even six weeks after birth.

The study was also the first to look at the impact of combination feeding on microbiome composition. “Surprisingly, babies that were fed both formula and breast milk had microbiomes that more closely resembled those of babies that were fed exclusively formula,” says Anne G. Hoen, PhD, a study co-author and an assistant professor of epidemiology and of biomedical data science at Geisel. And breast-fed infants had microbiomes that were distinct from either combination-fed or formula-fed babies.

“Understanding the patterns of microbial colonization of the intestinal tract of healthy infants is critical,” says neonatologist Juliette Madan, MD, MS, a co-author of the study and an associate professor of medicine (pediatrics) at Geisel, “not only for determining the health impacts of specific and alterable early life risk factors and exposures, but also the potential consequences for both short-term and long-term health.”

TIM DEAN

Shutterstock



JAPANESE GLOBAL HEALTH FUND SUPPORTS DARTMOUTH TUBERCULOSIS VACCINE TRIAL

A COLLABORATIVE OF DARTMOUTH'S GEISEL SCHOOL OF MEDICINE, Muhimbili University of Health and Allied Sciences in Tanzania, and Tokyo Medical and Dental University received \$1.4 million from Japan's Global Health Innovative Technology Fund to conduct a joint randomized clinical trial in Tanzania aimed at reducing the transmission of tuberculosis (TB). The trial will evaluate the safety and efficacy of DAR-901, a booster TB vaccine, in adolescents.

“We've been working on this since the 1990s, and DAR-901 remains the only new vaccine for TB in development that has shown to be effective in humans,” says Ford von Reyn, MD, a professor of medicine at Geisel who led the development of the vaccine.

Von Reyn's Dartmouth team has been focused on research to combat TB since his tenure with the World Health Organization's AIDS program in 1987.

The current vaccine developed in 1928, *Bacillus Calmette-Guérin* (BCG), is a live vaccine typically administered at birth, but does not offer lifelong immunity. DAR-910 is designed to boost and prolong BCG's protection, and in the new trial, it will be administered to 13-15-year-old participants who received BCG at birth.

Only one other prevention of TB infection trial is underway in South Africa.

SUSAN GREEN