

# Breastfeeding can offset asthma risk caused by a baby's exposure to antibiotics

**CHILD research shows that breastfeeding can protect newborns from the increased risk of asthma caused by antibiotic use.**

According to the study, [published in \*Med\*](#), children who were given antibiotics but not breastfed had three times the risk of developing asthma compared to those who were breastfed while on antibiotics.

## ANTIBIOTICS DISRUPT GUT HEALTH

What connects antibiotic use and breastfeeding to asthma risk is the impact that both have on a baby's gut microbiome—the community of bacteria living in the baby's digestive tract

As past CHILD research helped establish, in early life the microbiome supports immune development and influences lifelong health, including asthma risk. Past CHILD research has also shown that antibiotic exposure seems to disrupt this delicate microbial balance.

"Increasingly, we have come to understand the enormous influence infant gut health has on overall health," says Dr. **Stuart Turvey**, Co-Director of CHILD.

"While strides have been made to [reduce unnecessary antibiotic prescriptions](#), we realize they are still an important treatment for babies when warranted. According to our findings, breastfeeding may be one of the most influential factors in protecting these babies when they require antibiotics."

## BABIES' POOP & MOTHERS' MILK

Dr. Turvey and his team used CHILD data to examine whether breastfeeding could promote a healthy gut and potentially reduce this antibiotic-associated risk of asthma.

"From CHILD, we had access to the microbiota composition within stool samples from infants as well as the makeup of their mother's milk," says **Darlene Dai**, a graduate student in the Turvey lab and first author on the paper.

"We were able to identify which beneficial microbes contributed to protection and pinpoint the components in the milk that nurture these beneficial microbes."


## MILK FEEDS BENEFICIAL GUT BACTERIA

These components, called human milk oligosaccharides, make up around 20 per cent of carbohydrates in human breast milk and are mostly indigestible by infants. Instead, their main purpose is to support the colonization of beneficial infant bacteria.

"We realize that breastfeeding is not always an option for infants who have been exposed to antibiotics," says Dr. **Charisse Petersen**, a research associate in the Turvey lab and another author on the study.

"We are hopeful that supplementation of the beneficial microbes and the necessary prebiotics identified in the study may be able to provide protection."

Breastfeeding can offset asthma risk caused by a baby's exposure to antibiotics




- Nearly 3x** risk of asthma for babies who take antibiotics without breastfeeding
- 20%** of human milk carbohydrates may feed helpful gut bacteria that protect against asthma risk

Antibiotic use can disrupt the delicate balance of immune-boosting bacteria living in an infant's gut, causing an increased risk of asthma.

By enriching beneficial bacteria in an infant's gut, breastfeeding may be one of the most influential factors in protecting babies against asthma risk when they require antibiotics.

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