Breastfeeding, antibiotics before weaning and BMI in later childhood

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Breastfeeding in children who had received no antibiotics before weaning was associated with a decreased number of antibiotic courses after weaning and a decreased body mass index (BMI) later in childhood, according to an article published online by *JAMA Pediatrics*.

The mechanisms by which breastfeeding for a long duration may reduce the frequency of infections and lower the risk of being overweight for children remain unclear. The benefits of breastfeeding likely may be due to the development of the intestinal microbiota, which is dependent on the infant's diet. Antibiotic use may be a modifying factor.

The study by Katri Korpela, Ph.D., of the University of Helsinki, Finland, and coauthors included 226 Finnish children who had participated in a probiotic trial from 2009 to 2010. Breastfeeding information was collected in a questionnaire from mothers at the start of the trial. The current retrospective study involved antibiotic purchase records. Almost 97 percent of children were breastfed for at least one month and the average duration of breastfeeding was eight months.

The authors report that among 113 children with no antibiotic use before weaning, breastfeeding was associated with a reduced number of postweaning antibiotic courses and decreased body mass index later in life. Among the 113 children who used antibiotics in early life (during breastfeeding and through four months after weaning), the effect on postweaning antibiotic use was only borderline significant and the effect on BMI disappeared, according to the results.

Study limitations include the authors cannot exclude the possibility that some of the observed effects of breastfeeding could be due to other factors. They also acknowledge exclusion criteria could reduce the generalizability of their results.

"The protective effect of breastfeeding against high body mass index in later childhood was evident only in the children with no antibiotic use during the breastfeeding period. The results suggest that the metabolic benefits of breastfeeding are largely conveyed by the intestinal microbiota, which is disturbed by antibiotic treatment," the study notes.

In a related editorial, Giulia Paolella, M.D., of the University of Milan, Italy, and Pietro Vajro, M.D., of the University of Salerno, Italy, write: "Studies on early-life antibiotic exposure (ELAE) and subsequent childhood obesity have yielded inconsistent results. ... Korpela and colleagues add to what we know about the link between prevention of obesity, breastfeeding duration, ELAE and microbiota changes. However, like most investigations on this topic, their well-designed study is not exempt from inevitable and evitable limitations, as the authors themselves acknowledge."

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