

BACK PAGE

Use of antibiotics in infants correlates with allergies in children, though causation not shown

Antibiotics commonly prescribed to infants may lead to an increased risk of allergies later in childhood, according to a study published in *JAMA Pediatrics* and reported by CNN. The study found that infants who were given antibiotics—penicillin, cephalosporin, sulfonamide or macrolide—had an increased risk of developing allergies (such as food allergies), asthma or dermatitis as children.

Records examined for nearly 800,000 children

The study analyzed medical records of 798,426 children born between 2001 and 2013, who were beneficiaries of the United States Department of Defense TRICARE program, a healthcare program for uniformed service members, retirees and their families around the world.

The researchers determined which children had been given prescriptions for penicillin, penicillin with B-lactamase inhibitor, cephalosporin, sulfonamide or macrolide within the first six months of life. They also examined which children were later diagnosed with an allergy such as food allergy, anaphylaxis, asthma, atopic dermatitis, allergic rhinitis, allergic conjunctivitis or contact dermatitis.

Risk with multiple antibiotic classes

Results showed that the antibiotics researchers studied were associated with increased risks for a subsequent diagnosis of allergic disease.



The risk was lowest for sulfonamides and highest for penicillin.

“Being prescribed an antibiotic increased the risk of later development of allergic disease anywhere from 8% for food allergy to 47% for the development of asthma,” explained Dr. Cade Nylund, a pediatrician and pediatric gastroenterologist at the Uniformed Services University in Maryland, US, who was one of the study authors.

“We have demonstrated that not only are antibiotics associated with an increased risk of allergic disease but that there is an increased risk associated with the prescription of multiple classes of antibiotics,” said Nylund. “I was surprised to see an association of all classes of antibiotics with the later development of allergic disease,” he noted.

Correlation but not causation

Importantly, the study found a correlation—but not causation—between infant antibiotic use and development of allergies. More research is needed to determine the nature of the association that was found.

According to the research paper, it is possible the medications can affect an infant’s gut bacteria, CNN reported. In addition, the CNN article indicated that infants at increased risk of developing allergic disease also may be more susceptible to bacterial infections requiring antibiotics.

Perspectives for parents

CNN also obtained comments from Dr. Purvi Parikh, an allergist and immunologist at NYU Langone Health in New York and a spokesperson for the Allergy and

Asthma Network. She did not participate in the new research.

She noted that the research is “helpful” in the sense that “it further affirms what we know about antibiotic use being associated with microbiome changes, which may lead to various immune diseases such as allergic conditions.”

She also provided some perspective saying, “Parents should know this study shows an association but not necessarily cause and effect. So, if a child truly needs an antibiotic for a bacterial infection, [parents] should not withhold it due to fear of allergic disease. However, on that same note, one should not over use antibiotics if not needed—for a virus or a cold—as there may be long-term consequences from over use.”

Nylund also noted that, “Limiting unnecessary antibiotic prescriptions for viral infections like the common cold may be a step towards preventing the development of allergic disease.”

References

Content for this article was based on and excerpted from:

- Zven Sidney, Susi Apryl, Mitre Edward, et al. Association Between Use of Multiple Classes of Antibiotic in Infancy and Allergic Disease in Childhood. *JAMA Pediatrics*. 2020;174(2):199-200. doi:10.1001/jamapediatrics.2019.4794.
- Antibiotics in Infancy Tied to Allergies in Childhood, New Research Suggests. CNN. December 20, 2019. <https://www.cnn.com/2019/12/20/health/antibiotics-allergies-children-study/index.html>.
- Research: Antibiotics in Babies Tied to Allergies in Kids. WLTZ News. December 23, 2019. <https://www.wltz.com/2019/12/23/research-antibiotics-in-babies-tied-to-allergies-in-kids>.