

Study: Newborns exposed to dirt, dander may have lower allergy, asthma risks *Early encounters with certain bacteria, allergens may have protective effect* By Hub staff report (6/9/14)

Infants exposed to rodent and pet dander, roach allergens, and a wide variety of household bacteria in the first year of life [appear less likely to suffer from allergies, wheezing, and asthma](#), according to results of a study conducted by scientists at the [Johns Hopkins Children's Center](#) and other institutions.

Previous research has shown that children who grow up on farms have lower allergy and asthma rates, a phenomenon attributed to their regular exposure to microorganisms present in farm soil. Other studies, however, have found increased asthma risk among inner-city children exposed to high levels of roach and mouse allergens and pollutants. The new study confirms that children who live in such homes do have higher overall allergy and asthma rates but adds a surprising twist: Those who encounter such substances before their first birthdays seem to benefit rather than suffer from them. Importantly, the protective effects of both allergen and bacterial exposure were not seen if a child's first encounter with these substances occurred after age 1, the research found.

A report on the study, [published Friday in the *Journal of Allergy and Clinical Immunology*](#), reveals that early exposure to bacteria and certain allergens may have a protective effect by shaping children's immune responses—a finding that researchers say may help inform preventive strategies for allergies and wheezing, both precursors to asthma.

"Our study shows that the timing of initial exposure may be critical," says study author Robert Wood, chief of the Division of Allergy and Immunology at the Johns Hopkins Children's Center. "What this tells us is that not only are many of our immune responses shaped in the first year of life, but also that certain bacteria and allergens play an important role in stimulating and training the immune system to behave a certain way."

The study was conducted among 467 newborns from Baltimore, Boston, New York, and St. Louis whose health was tracked over three years. The investigators visited homes to measure the levels and types of allergens present in the infants' surroundings and tested them for allergies and wheezing via periodic blood and skin-prick tests, physical exams, and parental surveys. In addition, the researchers collected and analyzed the bacterial content of dust collected from the homes of 104 of the 467 infants in the study.

Infants who grew up in homes with mouse and cat dander and cockroach droppings in the first year of life had lower rates of wheezing at age 3, compared with children not exposed to these allergens soon after birth. The protective effect, moreover, was additive, the researchers found, with infants exposed to all three allergens having lower risk than those exposed to one, two, or none of the allergens. Specifically, wheezing was three times as common among children who grew up without exposure to such allergens (51 percent), compared with children who spent their first year of life in houses where all three allergens were present (17 percent). In addition, infants in homes with a greater variety of bacteria were less likely to develop environmental allergies and wheezing at age 3.

Asthma is one of the most common pediatric illnesses, affecting some 7 million children in the United States, according to the U.S. Centers for Disease Control and Prevention. By the time they turn 3, up to half of all children develop wheezing, which in many cases evolves into full-blown asthma.

Other institutions involved in the research included the Washington University School of Medicine in St. Louis, Columbia University Medical Center in New York, Boston University School of Medicine, the University of California-San Francisco and the University of Wisconsin-Madison.

[Read more from *Hopkins Medicine*](#)

Passage from “The Peanut Allergy Epidemic: What’s Causing It and How to Stop It” by Heather Fraser and published by Skyhorse Publishing, Inc, 2015:

The Absence of Injections Conspicuous by its absence from current theories is the one mechanism that has an actual history of creating mass allergy — injection. Injection is examined in this book in some detail since it was the means by which the founder of anaphylaxis, Dr. Charles Richet, stumbled on alimentary (food) anaphylaxis in humans and animals over one hundred years ago. Richet concluded in 1913 that food anaphylaxis was a response to proteins that had evaded modification by the digestive system. Using a hypodermic needle, he was able to create the condition in a variety of animals — mammals and amphibians — proving that the reaction was not only universal but also predictable using the method of injection followed by consumption or another injection.

There are two lines of thought in the medical literature regarding injection as a mechanism of sensitization. The first is that injection, in the form of vaccination or other injections such as the neonatal

vitamin K1 prophylaxis, merely unmasks genetic predispositions or tendencies to allergic disease. In short, there is something wrong with the child and not the injection(s).

The second line of thought is that there is a causal relationship between the injected ingredients and allergy — and although the proven allergenicity of vaccines is widely acknowledged, medical literature carefully avoids the question of what kinds of allergies vaccines can and do create to substances that are coincidentally or subsequently inhaled, ingested or injected. One exception to this unwritten rule was an unusual admission by Japanese doctors that an outbreak of gelatin allergy in children starting in 1988 and continuing through the 1990s was caused by pediatric vaccination. In that year, changes to the vaccination schedule in Japan meant that the DTP was replaced by an acellular version containing gelatin, the age at which it was administered to children was dropped from two years to three months, and this new vaccine was given before the live virus MMR vaccine that also contained gelatin. When children began reacting with anaphylaxis to the MMR vaccine as well as gelatin-containing foods (yogurt, Jell-O, etc.), doctors investigated. Finally, they concluded that the aluminum adjuvant in the DTaP had helped sensitize children to the “minute amounts” of proteins in the refined gelatin in the vaccine. Removal of gelatin from the DTaP vaccines was “an ultimate solution for vaccine-related gelatin allergy.” Subsequently, new cases of gelatin allergy in Japanese children dropped.

Quantities and qualities of adjuvant and other vaccine ingredients injected into children changed dramatically between 1989 and 1994 in ‘mature markets’ for vaccines including the United States, United Kingdom, Canada, and Australia. During those years, at least five new vaccine formulations for the same bacteria, *Haemophilus influenzae* type b (Hib) were introduced within an expanded and intense vaccination schedule. Like the gelatin allergy that emerged from a changed schedule of pediatric injections, was there some mix of ingredients that included powerful aluminum additives in the new Western schedule that was sensitizing children to peanut? The fact that refined peanut oil was a documented vaccine ingredient in the past is a subject of concern equal to the potential of sensitization to body tissues or even of cross-reactivity between dietary peanut and homologous injected proteins. These cross-reactive proteins may include those in the Hib cellular membrane or legume oil in a popular brand of the vitamin K1 prophylaxis. Cross-reactivity explains why a person who is allergic to peanuts, legumes like soy and castor beans, may also react to nuts or citrus seeds, which belong to different plant families — their proteins have similar molecular weights and structures.

As ingredients changed, the number of shots increased for kids in their first eighteen months of life from ten to as many as twenty-nine. The increase meant inconvenience to parents who would have to make more trips to the doctor and discomfort to the children who would have to experience multiple injections. To overcome these obstacles to compliance with the new schedule, the vaccines for diphtheria, pertussis, and tetanus (DPT); polio (OPV); and *H. influenzae* b (Hib) were administered to children in a single visit with two injections and an oral polio dose starting around 1988. By 1994 starting in Canada, these five were rolled into a single needle. Few parents realize that by design immunization provokes both the desired immune response and allergy at the same time. These natural defenses are inseparable and the more potent the vaccine, the more powerful the two responses. This is an outcome of vaccination the medical community has understood at least since Charles Richet won the Nobel Prize (1913) for his research on anaphylaxis. Anaphylaxis, Richet observed, is one of three outcomes of vaccination.

Paul Offit, chief of Infectious Diseases at Children’s Hospital in Philadelphia in 2008, dismissed concerns that the vaccination schedule was overwhelming children. To Offit, this was just not good science. Other doctors disagreed. In respected medical journals such as *The Journal of the American Medical Association* and *Allergy: European Journal of Allergy and Clinical Immunology*, doctors expressed concern over the long-term effects of early vaccinations. Some doctors state that excessive vaccination is ineffective and dangerous.

But vaccination is a complex subject, and its role in the food-allergy epidemic is difficult to address because of the heated political, social, and economic implications. It is a subject doctors avoid. And so, despite the continuing intense attention given to the peanut allergy in children, an answer to its cause(s) has not yet been found. What has emerged, instead, is a robust economy of doctor fees, nut-free foods, ongoing medical research, and pharmaceutical sales. Peanut and other food allergies have become enormously profitable. It is so much so that one market analyst has suggested that an “autoimmune index” would be a great tool for investors. This index, tagged as “save the children and make money,” would monitor the profitability of pharmaceutical stocks relative to the continued rise in peanut allergy and other childhood epidemics.