

Most vaccine-allergic children can still be safely vaccinated, experts say

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With close monitoring and a few standard precautions, nearly all children with known or suspected vaccine allergies can be safely immunized, according to a team of vaccine safety experts led by the Johns Hopkins Children's Center. Writing in the September issue of *Pediatrics*, the multicenter research team offers pediatricians a step-by-step tool for quickly identifying children with allergic reactions to vaccines, and a much-needed guide, they say, to safely immunize those who are allergic.

Serious allergic reactions to vaccines are extremely rare - one or two per million vaccinations, according to some estimates - but when they happen, such episodes can be serious, even life-threatening, making it critical for pediatricians to instantly spot true allergic reactions and differentiate them from more benign nonallergic responses, investigators say. It is also crucial that pediatricians design a safe immunization plan for children with confirmed vaccine allergies. Children who have had one allergic reaction are believed to be at a higher risk for future reactions, typically more serious than the first.

"We cannot reiterate enough that the vaccines used today are extremely safe, but in a handful of children certain vaccine ingredients can trigger serious allergic reactions," says Robert Wood, M.D., lead author on the paper and chief of pediatric Allergy and Immunology at Hopkins Children's. "For the most part, even children with known allergies can be safely vaccinated."

Given recent outbreaks of vaccine-preventable infections like measles, mumps and whooping cough in the United States, and measles and polio overseas, it is essential to safely vaccinate as many children as possible, investigators say.

Combing through available evidence on vaccine safety and allergies, the Hopkins-led team developed a sequence of instructions - an algorithm - that prompts physicians one step at a time on how to evaluate and immunize children with known or suspected vaccine allergies.

The guidelines are intended for doctors and parents who are uncertain about vaccine safety in children who have already had or are at high risk for having allergic reactions to vaccines.

In such cases, the Hopkins-led group advises a workup by an allergist, including skin prick testing-a prick on the skin or an injection under the skin with a small dose of vaccine or the suspected allergen from the vaccine-or blood tests that would detect the presence of characteristic antibodies that patients develop to allergens, such as antibodies to gelatin or egg proteins used in several common vaccines.

In many cases, allergic children can be vaccinated using alternative forms of a vaccine that are free of the allergen. Even if allergen-free formulations are unavailable, many children can still be vaccinated and remain under physician supervision for several hours after vaccination. Another option is testing the child to check for immunity. If blood tests show the child has already developed protective antibodies, it may be OK, at least temporarily, to withhold further doses of the vaccine, researchers write.

"Vaccines save lives, and parents should know that children who have had allergic reactions after a vaccine are likely to have developed protection against infection as a result of the vaccination," says

investigator Neal Halsey, M.D., an infectious disease specialist at Hopkins Children's, and professor of International Health at the Johns Hopkins University Bloomberg School of Public Health.

"Most children who have had an allergic reaction after a vaccine can still be vaccinated against other diseases safely and some can receive additional doses of vaccines they might have reacted to," Halsey adds.

Many children with known vaccine allergies who have low levels of protective antibodies and require more doses can be vaccinated safely under the guidelines. In some cases, children with known allergies can be given antiallergy medications, such as antihistamines and corticosteroids, before vaccination to help ward off or lessen the allergic reaction. For a step-by-step guide to vaccine administration in children with known or suspected vaccine allergy, see the full text of the article at <http://pediatrics.aappublications.org/future/122.3.shtml>.

Immunizations of children with known vaccine allergies should always be administered under medical supervision in a clinic equipped to treat life-threatening allergic reactions or in a hospital intensive-care unit. Patients can usually go home after an hour or two if they have no adverse reactions.

True allergies typically cause immediate reactions, involving the immune system as a whole that occur within a few minutes to a few hours of vaccination. By contrast, delayed reactions, which occur within days, even weeks after vaccination, are generally benign and are rarely, if ever, dangerous.

Symptoms of immediate allergic reactions include hives, swelling, wheezing, coughing, low blood pressure, vomiting, diarrhea, and can lead to full-blown anaphylaxis, a life-threatening allergic reaction.

Source: Johns Hopkins Medical Institutions

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