

VACCINES AND ALLERGIES: WHAT YOU SHOULD KNOW

When children are diagnosed with allergies, parents try to identify potential exposures in the hopes of avoiding future reactions. Anything that goes into the child's body may warrant consideration — even vaccines. The good news is that for the majority of children with allergies, vaccines are not the problem.

WHAT HAPPENS DURING AN ALLERGIC RESPONSE?

Allergic responses can vary in intensity from minor symptoms, such as hives, to major reactions, such as a sudden drop in blood pressure, difficulty breathing and shock. Because an allergic reaction can be severe and is typically immediate, patients are asked to wait around the doctor's office for about 15-30 minutes after receiving a vaccine.

CAN PEOPLE HAVE ALLERGIC RESPONSES TO VACCINES?

Yes. On rare occasions people can have allergic reactions after getting vaccines. In these cases, the reaction is to one or more vaccine ingredients; however, anyone who has had a severe allergic reaction to a particular vaccine should not get additional doses of that vaccine. Severe allergic reactions are those considered to be life-threatening, such as difficulty breathing, sudden drop in blood pressure or shock.

People who may have allergies to particular vaccine components, but which are not considered life-threatening, should discuss the relative risks of the vaccine and the disease with their healthcare provider. In some cases, these patients may be recommended to consult with an allergist for further evaluation or to administer the vaccination using established safety protocols.

WHAT VACCINE INGREDIENTS MIGHT CAUSE AN ALLERGIC REACTION?

A limited number of vaccine ingredients including eggs, gelatin, antibiotics, latex, yeast and aluminum warrant attention as they relate to allergies.

Eggs – Historically, two vaccines were of concern for those allergic to egg proteins: influenza and yellow fever vaccines. Because these vaccines were made in eggs, they contained small amounts of egg proteins. In recent years, the influenza vaccine has been shown not to be problematic for those with egg allergies because the amount of egg protein is one hundred-fold less than that required to induce allergic symptoms in those with even severe egg allergies. For these reasons, egg allergic people can now get the influenza vaccine.

The yellow fever vaccine still contains enough egg proteins that it could cause a severe reaction in egg allergic people. Those who require the vaccine for travel should undergo a procedure known as desensitization in which an allergist introduces increasing quantities of the vaccine over time until the person is able to be immunized. Desensitization for vaccination needs to be repeated during subsequent dosing if the person requires additional doses.

Gelatin – A small number of vaccines contain gelatin as a stabilizer. Stabilizers are used in some viral vaccines to allow for the vaccine virus to be equally distributed throughout the vial. The type of gelatin used in vaccines comes from pigs. Although allergic reactions to gelatin-containing vaccines are rare (about one severe allergic reaction per 1.2 million doses administered), these reactions are the most frequent allergic-type reactions to vaccination. Of interest, the gelatin used in foods (like jello) is obtained from cows, not pigs.

The vaccines that contain gelatin include MMR, MMRV, one version of shingles (Zostavax®), chickenpox, yellow fever, and some versions of the influenza and rabies vaccines. In addition, the capsule used for the oral typhoid vaccine is made of gelatin.

Antibiotics – Although some people are allergic to antibiotics, the types contained in vaccines are not typically the ones to which people are allergic; in addition, the quantities contained in vaccines are minimal. Antibiotics used in vaccines include neomycin, polymyxin B, kanamycin, gentamicin, streptomycin, chlorotetracycline and amphotericin B.

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Latex – Some vaccine packaging contains latex; therefore, people with severe allergies to latex should discuss this condition with their healthcare provider before getting vaccinated. In some cases the benefits of vaccination will still outweigh the potential risks; however, healthcare providers aware of this allergy can try to select products that do not have latex in the packaging. Vaccine packaging invariably states whether the product does or does not contain rubber latex.

Yeast – A few vaccines are produced using yeast cells, including hepatitis B and hepatitis B-containing vaccines and the human papillomavirus (HPV) vaccine. Although a small number of people have had allergic reactions following receipt of the hepatitis B vaccine, the allergic response does not appear to be caused by the yeast proteins so it likely represents a temporal, not causal, association.

Aluminum – Although some people may have contact sensitivity to aluminum-containing products that touch the skin, such as deodorants, people do not suffer life-threatening allergic reactions to aluminum that would preclude receiving vaccines that contain aluminum.

HOW DO I FIGURE OUT IF MY CHILD IS ALLERGIC TO ANY VACCINE INGREDIENTS THAT COULD CAUSE A REACTION?

The primary concerns for allergic reactions as they relate to vaccines are egg proteins, gelatin and latex.

Because egg proteins are only a concern for yellow fever vaccine and that vaccine is only recommended in limited scenarios, such as travel, most people will have consumed eggs and be aware of any allergies prior to getting a yellow fever vaccine.

While gelatin is contained in several vaccines, in most cases the vaccines that contain it, such as MMR and chickenpox, are not given before 1 year of age. If children have eaten desserts or candies that contain gelatin without reaction, they are likely not to react following vaccination either. However, because food-based gelatin is derived from cows and not pigs, it is possible that, in some instances, a small number of people might still be allergic to the gelatin contained in vaccines even though they aren't allergic to the gelatin contained in food.

Latex is found in many commonly used items, including some that babies come into contact with, such as pacifiers, bottles and toys. In most cases, latex allergies develop after frequent, long-term exposure and reactions are not typically severe. So, allergies related to latex are more of a concern in older children or adults who will likely already be aware of their allergy.

DO CHILDREN WITH PEANUT OR CORN ALLERGIES HAVE TO FOREGO ANY VACCINES?

No. Parents of children with food allergies spend a significant amount of time, by necessity, making sure their children do not accidentally ingest foods that will cause an allergic reaction. However, peanut and corn allergies are not reasons to forego any vaccines.

DO VACCINES CAUSE CHILDREN TO BE ALLERGIC TO SUBSTANCES NOT CONTAINED IN VACCINES?

No. For example, children who had received a pertussis vaccine did not have a greater frequency of allergies compared with those who had not. Interestingly, children who had pertussis disease were more likely to have allergies than children who did not.

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