Vaccine Side Effects

While vaccines are very safe, like any medicine they do sometimes cause reactions. Mostly, these are mild "local" reactions (soreness or redness where the shot is given) or a low-grade fever. They may last a day or two and then go away. Sometimes more serious reactions are associated with vaccines. These are much less common. Some of them are clearly caused by the vaccine; some have been reported after vaccination but are so rare that it is impossible to tell if they were caused by the vaccine or would have happened anyway. We will mention any side effects specifically associated with each vaccine in the descriptions below.

Some children also have allergies, and occasionally a child will have a severe allergy to a substance that is component of a vaccine. There is a very small risk (estimated at around one in a million) that any vaccine could trigger a severe reaction in a child who has such an allergy. Should one of these allergic reactions occur, it would happen within several minutes to several hours after the vaccination, and would be characterized by hives, difficulty breathing, paleness, weakness, hoarseness or wheezing, a rapid heart beat, and dizziness. Doctors' offices are equipped to deal with these reactions. Always tell your provider if your child has any known allergies.

Vaccine Precautions

A child who has had a severe (life-threatening) **allergic reaction** to a previous dose of any vaccine should not get another dose of that vaccine. A child with a known severe (life-threatening) **allergy** to any vaccine component should not get a vaccine containing that component.

If a child has any **moderate or severe illness** on the day any vaccine is scheduled, it should probably be delayed until the child has recovered. A mild illness or fever is usually not a reason to delay an immunization.

We will mention any additional precautions for each vaccine in the following descriptions.

5. Influenza Vaccine

There are two types of influenza vaccine. The first is an inactivated (killed) vaccine given as a shot, which has been used for many years. It can be given to anyone 6 months of age and older. The second is a live, attenuated (weakened) vaccine, which is sprayed into the nose and was licensed in 2003. It is not licensed for children younger than 5 years old. Because influenza viruses change from year to year, new vaccines must also be formulated each year, and annual vaccination is recommended.

The inactivated influenza vaccine is 70%–90% effective in healthy children, and the live, intranasal vaccine is about 87% effective in healthy children 5–7 years of age. Many other infections have the same symptoms as influenza and are often mistakenly called "flu." Neither vaccine is effective against infections that are not actually caused by influenza viruses.

One dose of vaccine (either type, depending on age) is recommended annually, beginning around October or November. For children younger than 9 who are getting influenza vaccine for the first time, 2 doses are recommended, at least a month apart (inactivated vaccine) or 6–10 weeks apart (live vaccine).

Influenza Vaccine Side Effects

INACTIVATED VACCINE

About 15%–20% of those who get inactivated influenza vaccine have a mild local reaction, such as **soreness or redness** where the shot was given. These generally last 1 or 2 days. A very small number, less than 1%, may get a **fever**, **chills** or **muscle aches**. Because the virus in this vaccine has been killed, it cannot cause influenza.

Some inactivated influenza vaccine contains a preservative called thimerosal, which contains mercury. Some people believe that thimerosal in vaccines has been associated with developmental problems, including autism. In 2004 the Institute of Medicine reviewed scientific studies looking for a connection between thimerosal and these problems, but concluded that there is no evidence of such a connection. Parents can ask their providers about the availability of thimerosal-free vaccine.

LIVE, INTRANASAL VACCINE

Some children have gotten a **runny nose** or **nasal congestion**, **fever**, **headaches** or **muscle aches**, **abdominal pain** or **vomiting**. Since these symptoms are fairly common among all children, it is difficult to tell whether their presence after vaccination is due to the vaccine. Although the vaccine contains live influenza virus, it has been weakened and altered in other ways so it does not cause influenza.

Influenza Vaccine Precautions

INACTIVATED VACCINE

In addition to the normal precautions for all vaccines, shown on page 30, children who are known to have a **severe allergy to eggs** should not get inactivated influenza vaccine.

LIVE, INTRANASAL VACCINE

In addition to the normal precautions for all vaccines, shown on page 30, children who have a **severe allergy to eggs** should not get live influenza vaccine. Children who have a **weakened immune system**, who have **chronic medical conditions** such as asthma, reactive airways disease, diabetes, renal disease, or sickle cell disease, or who are receiving l**ong-term therapy with aspirin or other salicylates** should also not get this vaccine. The vaccine is not known to be harmful to these people, but it has not yet been thoroughly tested in them.

Combination Vaccines

Several vaccines are sometimes combined into a single shot. These are called combination vaccines. Some combination vaccines are used routinely — DTaP is a combination; so is MMR. There are currently four other combination vaccines available for children. One combines DTaP and Hib vaccines; the second Hib and hepatitis B; the third combines DTaP, hepatitis B, and polio, and the fourth combines measles, mumps, rubella and varicella. The advantage of combination vaccines is, of course, that your children get the protection of all the component vaccines while getting fewer injections.

Each of these vaccines has certain restrictions, and not all providers carry them. But ask your provider about them if you are interested in reducing the number of shots your child must get for complete vaccine coverage.