

Parents' Guide to Childhood Immunization

Varicella (Chickenpox)

Varicella (Chickenpox) was, until recently, one of the most common of childhood diseases. Before there was a vaccine, almost everyone got it — there were about 4 million cases a year in the United States. Chickenpox is caused by the varicella zoster virus. Its most recognizable feature is an itchy rash all over the body. It also causes fever and drowsiness. It is spread from person to person through the air, by coughing, sneezing or breathing, and can also be spread by contact with fluid from the blisters. It usually takes 2–3 weeks from the time of exposure for a person to become ill, and an infected person is contagious from 1 or 2 days before the rash appears until all the blisters are dried up, usually 4 to 5 days after. Chickenpox is usually mild, but it occasionally causes serious problems. The blisters can become infected, and some children get encephalitis. Among infants less than 1 year old who get the disease, about 1 in 250,000 die. For older children, about 1 in 100,000 die. If a woman gets chickenpox just before or after giving birth, her baby can get very sick, and about 1 in 3 of these babies will die if not treated quickly. About 1 child in 500 who gets chickenpox is hospitalized (about 1 in 50 adults). After a person has chickenpox the virus stays in the body. Years later it can cause a painful disease called herpes zoster, or shingles.



Varicella Vaccine

Varicella vaccine is made with live, attenuated (weakened) varicella virus. It was licensed in the United States in 1995. It prevents chickenpox in 70%–90% of people who get it, and it prevents severe chickenpox in more than 95%. It is expected to provide life-long immunity. People who were vaccinated during testing, before the vaccine was licensed, are still immune.

Two doses of varicella vaccine are recommended for children. The first dose is recommended at 12–15 months of age. It is usually given at the same time as MMR vaccine. The second dose is recommended at 4–6 years, before entering kindergarten or first grade. It may be given sooner, as long as it is separated from the first dose by at least 3 months. Anyone who has had chickenpox does not need the vaccine.



Each year, about 1% of people who have gotten varicella vaccine develop chickenpox in spite of having responded to the vaccine. This is called “breakthrough” infection. Breakthrough infections are much milder than normal chickenpox. Patients generally have fewer than 50 lesions, which do not form blisters. They also do not get a fever and have no complications. We don’t know why breakthrough infections occur.

Varicella Vaccine Side Effects

About 1 child in 5 gets some **redness or soreness** where the shot was given. Some children also get a **mild rash** (about 5 spots) 1 to 3 weeks after the shot. About 15% of children get a fever, but most of these fevers have been shown to have causes other than the vaccine. Febrile seizures (seizures caused by fever) have occurred in less than 1 out of 1,000 children. Other serious problems, such as inflammation of the brain (**encephalitis**) or **loss of muscle coordination**, have been reported very rarely — so rarely that it is not certain that the vaccine is the cause.

Varicella Vaccine Precautions

In addition to the normal precautions for all vaccines, shown on page 30, children who are known to have a **severe allergy to gelatin** or the antibiotic **neomycin** should not get varicella vaccine. A child who has a **suppressed immune system**, either because of a disease such as cancer or HIV infection, or a medication such as steroids, should be evaluated by a doctor before getting varicella vaccine. A child who has recently gotten a **transfusion or other blood product** might have to wait up to several months before getting varicella vaccine. The manufacturer recommends not using aspirin or other salicylates for 6 weeks after varicella vaccine. This is because Reye syndrome has been associated with use of salicylates after chickenpox disease. Any similar risk associated with the vaccine is merely theoretical. Two live vaccines (for example, varicella and MMR) may be given on the same day or separated by at least 4 weeks. But they should not be given less than 4 weeks apart, because they might interfere with each other. Varicella and inactivated (killed) vaccines may be given together, or at any time in relation to each other. There is a very small risk that a child who has gotten varicella vaccine could infect a susceptible family member — particularly one with a suppressed immune system. This appears to happen very rarely, and only when the vaccinated child develops a rash. To be safe, anyone with a suppressed immune system should consider avoiding contact with a child who develops a varicella vaccine related rash.



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 needs.