

Chickenpox (Varicella-Zoster Infections)

What is chickenpox?

An illness with rash and fever caused by the varicella-zoster virus

What are the signs or symptoms?

- Rash (ie, small red spots and bumps developing into very small fluid-filled sacs on the skin [vesicles] over 3–4 days, and then forming scabs or “crusts”).
- Discrete groupings (“crops”) of vesicles will come out over several days. Someone who has chickenpox for more than a day will have some red bumps, vesicles, and scabbed-over vesicles all at the same time.
- Rash may appear inside mouth, ears, genital areas, and scalp.
- The rash is usually quite itchy.
- Fever, runny nose, cough.

What are the incubation and contagious periods?

- Incubation period: Usually 14 to 16 days; occasionally as short as 10 days and as long as 21 days after contact.
- Contagious period: Chickenpox is highly contagious to people who have not previously been vaccinated or had the disease. The most contagious period is while the rash is spreading; a child may also be contagious 1 to 2 days before the rash appears. An infected person no longer spreads the virus when all the vesicles have scabs or crusts and no new skin vesicles are forming.
- Although uncommon, a previously immunized person can have a mild form of chickenpox, which is contagious.

How is it spread?

- Contact with the skin vesicles of someone with an uncovered shingles rash (see Shingles [Herpes Zoster] Quick Reference Sheet).
- Airborne route: Inhalation of virus that becomes airborne after fluid escapes from inside the vesicles or breathing small particles containing virus floating in the air. These particles come from the vesicles or a child’s respiratory secretions as droplets after a cough or sneeze. These germ-containing particles dry out quickly in the air or fall onto surfaces. After drying out and attaching to dust particles, they can become suspended in the air again. These particles travel along air currents and can infect people in the same or another room. Even brief exposure or shared airflow poses a high risk of infection for people who have not had the disease before, have not been protected by the chickenpox vaccine, or have a problem with their immune system.



Child with chickenpox rash

AAP, COURTESY OF EDGAR O. LEDBETTER, MD



Red bumps, blisters, vesicles, and crusts on the face of a child who has varicella

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How do you control it?

- Chickenpox is a vaccine-preventable infection. Immunize according to the current recommendations—when a child is 12 to 15 months of age and with a second dose at 4 to 6 years of age.
- Vaccinate older children, teens, and adults who are susceptible (ie, those who have not received 2 doses of vaccine or who have not had the natural infection).
- Exclude infected children and teachers/caregivers until entire rash is crusted over.
- Use good surface-sanitation technique and good hand-hygiene technique at all the times listed in Chapter 2.
- Ventilate room air with fresh outdoor air.

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- Children with chickenpox who are mildly ill and able to come to a program that cares for ill children require a room with separate ventilation with exhaust to and air exchange with the outside.

What are the roles of the teacher/caregiver and the family?

- Report the infection to the staff member designated by the early education/child care program or school for decision-making and action related to care of ill children. That person, in turn, alerts possibly exposed family and staff members and the parents of unvaccinated children to watch for symptoms and notifies the health consultant.
- Report the infection to the local health department. The health professional who makes the diagnosis may not report that the infected child is a participant in a child care program or school, and this could lead to a delay in controlling the spread.
- Specifically notify all adults (staff and volunteers) and families of children who have not had chickenpox or 2 doses of the chickenpox vaccine to contact their health care providers. Within 24 hours of exposure, be sure to advise those who might be pregnant or have a problem with their immune system to check with their health care providers about what to do. Pregnant women who have previously had chickenpox infection or vaccination should not have a pregnancy-related problem if exposed to chickenpox. However, pregnant women should be encouraged to confirm their protection with their own health professionals. Adults and children need 2 doses for full protection.
- Use good hand-hygiene technique at all the times listed in Chapter 2 and after any contact with soiled articles or skin vesicles.
- Do not give aspirin to ill children, as it may increase their risk of contracting Reye syndrome, a serious complication associated with the use of aspirin in someone infected with chickenpox and other viral illnesses (eg, influenza).

Exclude from group setting?

Yes. Chickenpox is a highly communicable illness for which routine exclusion of infected children is warranted. See Comments for information about shingles, vaccine-related chickenpox, and chickenpox in previously vaccinated children.

Readmit to group setting?

Yes, when all the following criteria are met:

- When all vesicles have scabs (usually 6 days after start of rash) or, in immunized children who have a mild infection with no crusts, once no new red bumps have appeared for at least 24 hours
- When the child is able to participate and staff members determine they can care for the child without compromising their ability to care for the health and safety of the other children in the group

Comments

- Initial chickenpox infections in adults can be extremely serious and may result in death.
- The chickenpox virus stays for a lifetime in an inactive form in the body's nerve cells.
- Shingles (herpes zoster) is the condition that occurs when someone has fully recovered from chickenpox and, later, the inactive virus becomes active (see Shingles [Herpes Zoster] Quick Reference Sheet).
- Rash from varicella vaccination can occur in 3% to 5% of children 5 to 26 days after vaccination. This condition is mild and causes a few red bumps at or near the injection site or very widely scattered bumps over the entire body. Bumps near the injection site may be covered with a nonporous bandage and clothing, and the child may continue to participate. In a child with a more widespread rash, the child might have been exposed to natural chickenpox and become infected before the vaccine had time to work. A health care provider should decide when children with widespread rashes can continue to participate in child care or school.
- Rarely, children get chickenpox a second time. These cases usually are very mild with less fever and fewer bumps and blisters than the first time. However, these children are still contagious and should not come to a group setting until the vesicles scab over.
- It is possible for children to get chickenpox despite being vaccinated. The first dose of this vaccine is about 85% effective at preventing mild chickenpox and 97% effective at preventing severe chickenpox. Two doses of vaccine are recommended and are much more effective in preventing infection. Chickenpox in previously immunized children is usually mild with less fever and fewer bumps and vesicles than in unimmunized children. These children are contagious and should stay home until the vesicles scab over and no new lesions have appeared in 24 hours.

