
Mumps: Questions and Answers

Information about the disease and vaccines

What causes mumps?

Mumps is caused by a virus.

How does mumps spread?

Mumps spreads from person to person through the air. It is less contagious than measles or chickenpox.

How long does it take to show signs of mumps after being exposed?

The incubation period of mumps is 14–18 days, but can range from 14–25 days.

What are the symptoms of mumps?

Individuals with mumps usually first feel sick with nonspecific symptoms like headache, loss of appetite, and low-grade fever.

The most well-known sign of mumps is “parotitis,” the swelling of the salivary glands, or parotid glands, below the ear. Parotitis occurs only in 30%–40% of individuals infected with mumps.

Up to 20% of persons with mumps have no symptoms of disease, and another 40%–50% have only nonspecific or respiratory symptoms.

How serious is mumps?

In children, mumps is usually a mild disease. Adults may have more serious disease and more complications.

What are possible complications from mumps?

Central nervous system involvement (meningitis) is common, but is usually not serious. Meningitis (with headache, stiff neck) occurs in up to 15% of people with mumps, but usually resolves without any permanent damage. Up to 50% of postpubertal males experience “orchitis,” or testicular inflammation, as a complication of mumps. This may involve pain, swelling, nausea, vomiting, and fever, with tenderness of the area possibly lasting for weeks. Approximately half of patients with orchitis have some degree of testicular atrophy, but sterility is rare.

An increase in spontaneous abortion (miscarriage) has been found among women who developed mumps during the first trimester of pregnancy; however, there is no evidence that mumps causes birth defects. Deafness, in one or both ears, can occur in approximately one per 20,000 reported cases of mumps.

Is there a treatment for mumps?

There is no “cure” for mumps, only supportive treatment (bed rest, fluids, and fever reduction).

How do I know if my child has mumps?

Mumps is diagnosed by a combination of symptoms and physical signs and laboratory confirmation of the virus, as not all cases develop characteristic parotitis and not all cases of parotitis are caused by mumps.

How long is a person with mumps contagious?

Persons with mumps are usually considered most infectious from 1–2 days before until 5 days after onset of parotitis.

If I think my child has been exposed to mumps, what should I do?

If your child has not been vaccinated against mumps, receiving the vaccine after exposure to the virus will not help prevent disease if the child has already been infected. However, if the child did not become infected after this particular exposure, the vaccine will help protect him or her against future exposure to mumps.

How common is mumps in the United States?

Due to good immunization coverage, mumps is now rare in the United States. An estimated 212,000 cases occurred in 1964, while only 258 cases were reported in 2004. In 2006, outbreaks of mumps occurred in 45 states and the District of Columbia, primarily on college campuses, resulting in more than 6,000 reported cases.

Can you get mumps more than once?

No.

When did mumps vaccine become available in the U.S.?

The currently used mumps vaccine was licensed in 1967.

What kind of vaccine is it?

The mumps vaccine is made from a live attenuated (weakened) virus. In the United States, it is recommended that it be given as part of the MMR vaccine, which protects against measles, mumps, and rubella (German measles) or the MMRV vaccine (MMR plus varicella [chickenpox] vaccine) when

age-appropriate (licensed for use only from age 12 months through age 12 years).

How is this vaccine given?

This vaccine is given by subcutaneous injection, meaning that the vaccine is deposited just under the skin and not deep into the muscle.

Who should get this vaccine?

All children and some adults should have documentation of 2 doses of a mumps-containing vaccine. In the United States, mumps vaccine is commonly given as part of the combination vaccines MMR or, when age appropriate, MMRV. Adults born in 1957 or later without evidence of immunity (i.e., physician-diagnosed disease, laboratory evidence of immunity, or confirmation of disease) should receive at least 1 dose of vaccine; they should receive a second dose if they are at high risk of exposure to mumps (e.g., healthcare personnel, international travelers, college students). Unvaccinated healthcare personnel born before 1957, who do not have evidence of immunity, should also receive two doses of MMR.

At what age should my baby get his first mumps shot?

The first dose of MMR or MMRV should be given on or after the first birthday; the recommended range is from age 12–15 months. A dose given before 12 months of age may not be counted, so the child's medical appointment should be scheduled with this in mind.

When should my child get his second MMR/MMRV shot?

The second dose of MMR is usually given when the child is 4–6 years old, or before he or she enters kindergarten or first grade. However, the second dose of MMR can be given anytime as long as it is at least four weeks after the first dose. MMRV can only be given through age 12 years and should be separated from a previous dose of varicella-containing vaccine by 12 weeks.

Who recommends this vaccine?

The Centers for Disease Control and Prevention (CDC), the American Academy of Pediatrics (AAP), and the American Academy of Family Physicians (AAFP) have all recommended this vaccine.

How safe is this vaccine?

Mumps is a very safe vaccine. Most side effects are mild and related to the measles or rubella components of the MMR vaccine (fever, rash, temporary joint symptoms).

What side effects have been reported with MMR vaccine?

Fever is the most common side effect, occurring in 5%–15% of vaccine recipients. About 5% of persons develop a mild rash. When they occur, fever and rash appear 7–12 days after vaccination. About 25% of adult women receiving MMR vaccine develop temporary joint pain, although this symptom is related to the rubella component of the combined vaccine. Joint pain only occurs in women who are not immune to rubella at the time of vaccination. MMR vaccine may cause thrombocytopenia (low platelet count) at the rate of about 1 case per 30,000–40,000 vaccinated people. Cases are almost always temporary and benign.

More severe reactions, including allergic reactions, are rare. About one person per million develops inflammation of the brain, which is probably caused by the measles vaccine virus.

How effective is this vaccine?

Approximately 80% of individuals become immune to mumps after a single dose of vaccine. The second dose of MMR vaccine is intended to produce immunity in the 20% of persons who did not respond to the first dose. This also ensures that the individual gets another chance to become immune to measles and rubella.

Who should NOT receive mumps vaccine?

Anyone who experiences a severe allergic reaction (e.g., hives, swelling of the mouth or throat, difficulty breathing) following the first dose of MMR should not receive a second dose. Anyone knowing they are allergic to an MMR component (gelatin, neomycin) should not receive this vaccine.

Pregnant women should not receive the MMR vaccine, and pregnancy should be avoided for four weeks following vaccination with MMR. While there is no evidence that the mumps vaccine causes fetal damage, women are advised not to receive the MMR vaccine during pregnancy as a safety precaution based on the theoretical possibility of a live vaccine causing disease.

Severely immunocompromised persons should not be given MMR vaccine. This includes persons with a variety of conditions, including congenital immunodeficiency, AIDS, leukemia, lymphoma, generalized malignancy, or those undergoing immunosuppressive therapy.

Can individuals with egg allergy receive MMR vaccine?

In the past it was believed that persons who were

allergic to eggs would be at risk of an allergic reaction from the vaccine because the vaccine is grown in tissue from chick embryos. However, recent studies have shown that this is not the case. Therefore, MMR may be given to egg-allergic individuals without prior testing or use of special precautions.

How do I know if I'm immune to mumps?

Persons are generally considered to be immune to mumps if they were born before 1957, have laboratory evidence of mumps immunity, have documentation from their health professional of previous mumps disease, or have received appropriate mumps vaccination.

Can the vaccine cause mumps?

No. This vaccine is live, but attenuated. It can cause symptoms like fever but cannot cause mumps.

Does the MMR vaccine cause autism?

There is no scientific evidence that measles, MMR, or any other vaccine causes autism. The question about a possible link between MMR vaccine and autism has been extensively reviewed by independent groups of experts in the U.S. including the National Academy of Sciences' Institute of Medicine. These reviews have concluded that the available epidemiologic evidence does not support a causal link between MMR vaccine and autism.

The MMR-autism theory had its origins in research by Andrew Wakefield and colleagues in England. They suggested that inflammatory bowel disease (IBD) is linked to persistent viral infection. In 1993, Wakefield and colleagues reported isolating measles virus in the intestinal tissue of persons with IBD. The

validity of this finding was later called into question when it could not be reproduced by other researchers. In addition, the findings were further discredited when an investigation found that Wakefield did not disclose he was being funded for his research by lawyers seeking evidence to use against vaccine manufacturers.

The studies that suggest a cause-and-effect relationship exists between MMR vaccine and autism have received a lot of attention by the media. However, these studies have significant weaknesses and are far outweighed by many population studies that have consistently failed to show a causal relationship between MMR vaccine and autism.

For a summary of the issues on this topic, please read "Vaccines and Autism," by Paul A. Offit, MD, Director, Vaccine Education Center, Children's Hospital of Philadelphia. This discussion can be accessed online at <http://www.chop.edu/consumer/jsp/division/generic.jsp?id=84662>.

"MMR vaccine does not cause autism. Examine the evidence!" lists all the major studies related to this issue with links to journal article abstracts: <http://www.immunize.org/catg.d/p4026.pdf>

Dr. Ari Brown has written a good piece for parents questioning the safety of vaccines. To access "Clear Answers & Smart Advice About Your Baby's Shots," go to: <http://www.immunize.org/catg.d/p2068.pdf>

For more information, visit CDC's web page about MMR vaccine safety at http://www.cdc.gov/vaccine-safety/updates/mmr_vaccine.htm