

New Jersey Dept. of Health and Senior Services  
**Vaccine Preventable Disease Program**  
**Mumps Public FAQs**

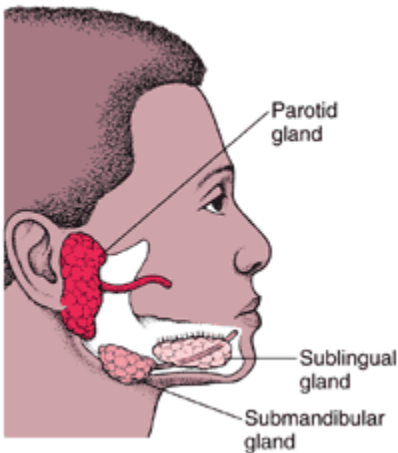
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**DESCRIPTION OF MUMPS**

**What is mumps?**

Mumps is caused by a virus. Mumps causes swelling of one or more of the parotid salivary glands located within your cheek, near your jaw line and below your ears.



From [The Merck Manual of Medical Information – Second Home Edition](#),  
p. 667, edited by Mark H. Beers.  
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**Who gets mumps?**

Mumps is a common childhood disease, but adults can also get mumps. The disease causes more complications in adults; more than half of the deaths due to mumps happen among people over 19 years of age. Anyone who is not immune to the mumps can get the disease. There are still cases of mumps around the world where populations are not vaccinated against the disease.

### **How do people get mumps?**

Mumps is spread from person to person. Humans are the only ones who can carry and spread the disease to one another. When an infected person talks, coughs or sneezes, the virus is released into the air and enters another person's body through the nose, mouth or throat. People can also become sick if they come in contact with the mucus or saliva (spit) from an infected person.

### **What are the symptoms of mumps?**

Up to half of people who get mumps have very mild or no symptoms, and therefore do not know they were infected with mumps.

The most common symptoms include:

- Fever
- Headache
- Muscle aches
- Tiredness
- Loss of appetite
- Swollen and tender salivary glands under the ears on one or both sides (parotitis)

Symptoms typically appear 16-18 days after infection, but this period can range from 12-25 days after infection.

### **Are there complications with a mumps virus infection?**

In children, mumps is usually a mild disease. Adults may have more serious disease and more complications. Although severe complications due to mumps are rare, the following complications can still occur:

- Swelling of the brain or of the tissue lining the brain and spinal cord (encephalitis/meningitis)
- Swelling of the testes (orchitis)
- Swelling of the ovaries (oophoritis) and/or breasts (mastitis)
- Miscarriage
- Deafness, usually permanent

### **How is mumps diagnosed?**

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.

### **What is the treatment for mumps?**

There is no “cure” for mumps, only supportive treatment (bed rest, fluids and fever reduction). Most cases will recover on their own.

If someone becomes very ill, he/she should seek medical attention. The ill person should call the doctor in advance so that he/she doesn't have to sit in the waiting room for a long time and possibly infect other patients.

### **How can mumps be prevented?**

Getting vaccinated against mumps is the best way to prevent the disease. Mumps vaccine effectiveness has been estimated at 62-91% for one dose and 76-95% for two doses. The mumps vaccine is given in combination with the vaccines for measles and rubella (MMR).

Another “combination” vaccine called MMRV, which contains both MMR and varicella (chickenpox) vaccines, may be given instead of the two individual vaccines to people between the ages of 12 months through age 12 years.

### **In addition to vaccination, how else can we prevent mumps?**

Some additional things people can do to help prevent the spread of mumps and other infections include:

- Stay at home for 5 days after symptoms begin; avoid school or work settings
- Cover your mouth and nose with a tissue when you cough or sneeze.
- Don't share eating utensils
- Clean surfaces that are frequently touched (such as toys, doorknobs, tables, counters, etc) regularly with soap and water or with cleaning wipes
- Wash your hands frequently with soap and water or an alcohol-based hand cleaner.

For additional information and materials on proper handwashing techniques, please visit the New Jersey Department of Health and Senior Services (NJDHSS) Communicable Disease Service's Link: <http://nj.gov/health/cd/handwashing.shtml>

### **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.

## **MUMPS VACCINATION**

### **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). MMRV is only licensed for use in children between the ages of 12 months through 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.

### **Can the vaccine cause mumps?**

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

### **Who should get this vaccine?**

According to the Advisory Committee on Immunization Practices (ACIP)/CDC recommended immunization schedule for person aged 0 through 6 years:

- The first dose of MMR or MMRV should be given on or after the first birthday; the recommended age range is from age 12-15 months.
- 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. The second MMR should be given to children between the ages of 13 months to 4 years (a minimum of four weeks after the first) in communities experiencing a mumps outbreak. MMRV can only be given through age 12 years and should be separated from a previous dose of varicella-containing vaccine by 12 weeks.

According to the ACIP/CDC 2010 recommended adult immunization schedule, adults born during or after 1957 should receive 1 dose of MMR vaccine unless they have a 1) a medical contraindication; 2) documentation of vaccination with 1 or more doses of MMR vaccine; 3) laboratory evidence of immunity; or 4) documentation of physician-diagnosed mumps. A second dose of MMR vaccine, administered 4 weeks after the first dose, is recommended for adults who 1) live in a community experiencing a mumps outbreak and are in an affected age group; 2)

are students in a postsecondary educational institutions; 3) work in a health-care facility; or 4) plan to travel internationally.

**If my child receives a second dose of MMR before he turns 4 as part of outbreak control, will he need a third dose to comply with NJ Immunization Requirements?**

Due to the large outbreak of mumps that NJ is currently experiencing, we have recommended that physicians consider administering the second dose of MMR vaccine to children aged 13 months to 4 years who have received one dose instead of waiting to administer at 4 – 6 years of age, ensuring that the second shot is given a minimum of four weeks after the first. Receipt of 2 valid MMR vaccines administered in accordance with ACIP recommendations will meet the minimum requirements for attendance in kindergarten as outlined in 8:57 - 4.

NJ requires that students receive 1 dose of Rubella, 1 dose of Mumps, and 2 doses of Measles. The requirement for Measles is stated in the Minimum Immunization Requirements Table For School Attendance In New Jersey available at <http://nj.gov/health/forms/imm-7.doc> as:

"Any child over 15 months of age entering child care, pre-school, or pre-Kindergarten needs a minimum of 1 dose of measles vaccine. Any child entering Kindergarten needs 2 doses. Intervals between first and second measles-containing vaccine doses cannot be less than 1 month. Laboratory evidence of immunity is acceptable."

Therefore, as we are requesting exposed students to receive the second dose prior to 4 years of age in order to control/prevent the spread of the mumps outbreak, they will be in compliance and will not need a third dose of MMR for school attendance.

**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 an 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 effective is the mumps vaccine?**

Mumps vaccine (MMR vaccine or MMRV vaccine), is the best way to prevent mumps. Mumps vaccine effectiveness has been estimated at 62-91% for one dose and 76-95% for two doses. The first vaccine against mumps was licensed in the United States in 1967, and by 2005, high two-dose childhood vaccination coverage reduced disease rates by 99%.

### **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.

The first dose of MMRV vaccine has been associated with rash and higher rates of fever than MMR and varicella vaccines given separately. Rash has been reported in about 1 person in 20 and fever in about 1 person in 5. Seizures caused by a fever

are also reported more often after MMRV. These usually occur 5-12 days after the first dose.

### **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. In February 2010, the British medical journal, The Lancet, retracted Dr. Wakefield's 1998 research paper.

The retracted article by Wakefield and interviews with celebrities citing anecdotal reports of autism following vaccination have received a lot of attention by the media. However, many well-designed scientific studies appearing in peer-reviewed journals have consistently failed to show a causal relationship between MMR vaccine and autism.

## **RECENT MUMPS CASES IN NEW JERSEY**

### **[UPDATED] Is there currently a mumps outbreak in NJ?**

*Yes. In July 2009, the largest U.S. mumps outbreak since 2006 has occurred, with approximately 3500 cases reported in multiple locations, including NY and NJ. As of June 1, 2010, 405 cases have been reported in NJ. The outbreak has primarily remained confined to a tradition-observant religious community and the majority of ill persons have been vaccinated with a mumps-containing vaccine.*

### **Is the mumps virus circulating in New Jersey and New York in 2010 different from the usual mumps strain?**

No, the same strain has caused past outbreaks in the United States and the United Kingdom. The current MMR vaccine covers this strain.

**Some people who have had both doses of the recommended MMR vaccine (to protect against measles, mumps, and rubella disease) are still getting mumps.**

**Does that mean that the vaccine is not effective?**

No, the mumps vaccine is effective. During outbreaks, we know that the people who have not been vaccinated against mumps have a much greater chance of getting mumps than those who are vaccinated. As with any vaccine, not everyone who is vaccinated will develop immunity and be protected. For the mumps vaccine, 90% of people will be protected after receiving the recommended 2 vaccines but about 10% of individuals will not develop immunity and remain susceptible. So we expect that during an outbreak when many, many people are being exposed every day, some people will get the mumps. The following example will explain this further.

- After 2 doses of the mumps vaccine, 90% of people will be protected, 10% will not be protected.
- This means out of every 100 people vaccinated, 90 will be protected. However, the vaccine will not "take" in 10 people, and these people will remain susceptible to the disease.
- By comparison, the measles vaccine (also part of the MMR vaccine) is about 98% effective and the annual influenza vaccine is about 70-85% effective.

**Example 1:**

In a community of 100 people, 100% have been vaccinated. Everyone is exposed to mumps. What happens?

- 90 people (90%) in the community are protected by the vaccine and do not get mumps.
- 10 people (10%) in the community become ill with mumps because the vaccine did not "take".
- Of the 10 people who get mumps, all (100%) have been vaccinated.

### **Example 2:**

In a community of 100, 98% have been vaccinated. That means 98 people are vaccinated and 2 people are not. Everyone is exposed to mumps. What happens?

- 88 people (90% of the 98 who are vaccinated) in the community are protected by the vaccine and do not get mumps.
- 10 people (10% of the 98 who are vaccinated) become ill with mumps because the vaccine did not "take".
- 2 people who have never been vaccinated get ill because they have no immunity to the disease.
- Of the 12 (10 vaccinated +2 unvaccinated) people who get mumps, 83% (10/12) were vaccinated.

Thus a large percent of the people with mumps have been vaccinated. This is expected in a highly vaccinated population when dealing with a vaccine that is 90% effective and a contagious disease like mumps. This does not mean that the vaccine is not working; in fact the mumps vaccine is working as expected. Most people who are vaccinated are not getting sick. You have to remember that during outbreaks many, many people are exposed every day – 90% of them are not getting sick because they have been protected by the vaccine.

### **Is there any recommendation to get a third dose of MMR?**

No. There is not a recommendation to get a third dose of MMR at this time.

## **FOR MORE INFORMATION**

### **Where can I get more information on mumps?**

- Your health care provider
- Your local health department
- NJ Department of Health and Senior Services Vaccine Preventable Disease Program 609-826-4861
- Centers for Disease Control & Prevention [www.cdc.gov](http://www.cdc.gov)

This information is intended for educational purposes only and is not intended to replace consultation with a health care professional.