



**New Jersey Department of Health  
Vaccine Preventable Disease Program**

**MUMPS PUBLIC FREQUENTLY ASKED QUESTIONS**

**Date: April 17, 2014**

**DESCRIPTION OF MUMPS**

**What is mumps?**

Mumps is a disease that is caused by the mumps virus. It spreads easily through coughing and sneezing. Mumps can cause fever, headache, and inflammation of the salivary (spit) glands, which can lead to swelling of the cheeks and jaws.

**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.

### **What is the incubation period and period of infectiousness?**

The incubation period is the time between exposure to an infectious disease and the appearance of the first signs or symptoms. The average incubation period for mumps is 16-18 days, with a range of 12-25 days. Fever may persist for 3-4 days and parotitis, when present, usually lasts 7-10 days.

The infectious period is the time period during which an infected person can spread the disease to others. Persons with mumps are usually considered most infectious from 1-2 days before until 5 days after onset of parotitis.

### **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. This vaccine is included in the combination measles-mumps-rubella (MMR) and measles-mumps-rubella-varicella (MMRV) vaccines.

### **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 Communicable Disease Service's Link: <http://nj.gov/health/cd/handwashing.shtml>

### **If I think I have been exposed to mumps, what should I do?**

If you have not been vaccinated against mumps, receiving the vaccine after exposure to the virus will not help prevent disease if you have already been infected. However, if you have not been infected during this particular exposure, the vaccine will help protect you against future exposure to mumps.

### **What is considered acceptable presumptive evidence of immunity (protection) to mumps?**

- 1) Documentation of age-appropriate vaccination with a live mumps virus-containing vaccine
  - a. Preschool-age children: one dose
  - b. School-aged children (grade K – 12): 2 doses
  - c. Adults not at high risk: one dose, or
- 2) Laboratory evidence of immunity, or

- 3) Laboratory confirmation of disease, or
- 4) Born before 1957

NOTE: acceptable presumptive evidence of immunity is different for healthcare personnel, students in post-high school educational institutions, and international travelers. For more information see MMWR, June 14, 2013, Vol. 62, No. 4. <http://www.cdc.gov/mmwr/pdf/rr/rr6204.pdf>

**I don't recall if I received the mumps vaccine. How do I locate official copies of my vaccination records?**

If you need official copies of vaccination records, or if you need to update your personal records, there are several places you can look:

- Ask parents or other caregivers if they have records of your childhood immunizations.
- Try looking through baby books or other saved documents from your childhood.
- Check with your high school and/or college health services for dates of any immunizations. Keep in mind that generally records are kept only for 1-2 years after students leave the system.
- Check with previous employers (including the military) that may have required immunizations.
- Check with your doctor or public health clinic. Keep in mind that vaccination records are maintained at doctor's office for a limited number of years.
- Contact your state's health department. Some states have registries (Immunization Information Systems) that include adult vaccines. NJIIS is the official immunization registry for NJ.
- Check with your health care provider to determine if blood tests can be drawn to test for mumps immunity or if revaccination is necessary.

**I am not sure how many doses of MMR I received. Should I get vaccinated? Is it safe to receive an extra dose of MMR vaccine?**

Yes, you should get vaccinated. It is safe to receive another vaccine if you are unsure of your vaccination history. There is no evidence that adverse (unfavorable) reactions are increased when MMR is given to a person who is already immune to one or more of the components of the vaccine. Contact your health care provider for further information.

## 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?**

Children should get 2 doses of MMR vaccine:

- First Dose: 12-15 months of age
- Second Dose: 4-6 years of age (may be given earlier, if at least 28 days after the 1st dose)

Some infants younger than 12 months should get a dose of MMR if they are traveling out of the country. (This dose will not count toward their routine series.)

Some adults should also get MMR vaccine: Generally, anyone 18 years of age or older who was born after 1956 should get at least one dose of MMR vaccine, unless they can show that they have either been vaccinated or had all three diseases.

MMR vaccine may be given at the same time as other vaccines.

Children between 1 and 12 years of age can get a "combination" vaccine called **MMRV**, which contains both MMR and varicella (chickenpox) vaccines.

**MMRV** vaccine may be given to children from 1 through 12 years of age to protect them from four diseases.

Two doses of MMRV vaccine are recommended:

- The first dose at 12 through 15 months of age
- The second dose at 4 through 6 years of age

These are recommended ages. But children can get the second dose up through 12 years as long as it is at least 3 months after the first dose.

Children may also get these vaccines as 2 separate shots: MMR (measles, mumps and rubella) and varicella vaccines.

Anyone 13 or older who needs protection from these diseases should get MMR and varicella vaccines as separate shots.

MMRV may be given at the same time as other vaccines.

### **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/MMRV should not receive a second dose. Anyone knowing they are allergic to a vaccine 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/MMRV vaccine. Immunocompromised means a person is less capable of battling infections because of an immune response that is not properly functioning. 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?**

Yes, individuals with egg allergy can safely receive the 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?**

Two doses of mumps vaccine are 88% (range: 66-95%) effective at preventing the disease; one dose is 78% (range: 49%–92%) effective.

### **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). A vaccine, like any medicine, is capable of causing serious problems, such as severe allergic reactions. However, the risk of MMR/MMRV vaccine causing serious harm is extremely small.

### **What side effects have been reported with MMR and MMRV vaccines?**

A vaccine, like any medicine, is capable of causing serious problems, such as severe allergic reactions. The risk of MMR/MMRV vaccine causing serious harm, or death, is extremely small.

Your child's doctor can help you choose between getting the MMR and varicella vaccines or the single MMRV vaccine. There are different things to consider when choosing which option to use for your child's first and second vaccinations.

### **Does the MMR vaccine cause autism?**

No, many large and reliable studies of MMR vaccine have been done in the United States and other countries. None of these studies have found a link between autism and the MMR vaccine. There are a couple of reasons why people might incorrectly believe autism is linked to vaccination. The first is because sometimes signs of autism don't appear until around the age the MMR vaccine is given. If a child is diagnosed shortly after getting vaccinations, this may seem like cause and effect.

Another reason some people may mistakenly think MMR is linked to autism is because of a study published in 1998 from the United Kingdom. One of the authors claimed that the MMR vaccine could contribute to the development of autism. That study got a lot of attention in the news. Since 1998, 10 out of 13 of the study's authors have withdrawn their support of the study, and the journal has retracted it.

## **SCHOOL SETTINGS**

### **What are the requirements for mumps vaccination in school settings?**

**Preschool/Childcare:** Children attending preschool/childcare in NJ need at least 1 documented dose of MMR vaccine by 15 months of age.

**Kindergarten-Grade 12:** Children attending K-12 need two documented doses of measles, 1 dose of mumps, and 1 dose of rubella. Since single antigen (separate

components of the vaccine) is not readily available in the United States, most children will have two MMR vaccines.

**College:** Students attending two or four-year institutions with 12 or more credits per semester are required to receive two doses of measles vaccine and 1 dose of mumps and rubella vaccine are required. Two MMR vaccines are also acceptable.

For more information about NJ's school immunization requirements, please visit <http://nj.gov/health/cd/imm.shtml>

### **What is the antibody titer law?**

The Antibody Titer Law (Holly's Law, NJSA 26:2N-8-11), passed on January 14, 2004, requires the New Jersey Department of Health (NJDOH) to accept serologic evidence (blood tests) of protective immunity to measles, mumps and rubella in lieu of the second ACIP recommended measles, mumps and rubella vaccine.

For further information about the antibody titer law, please visit [http://nj.gov/health/cd/documents/antibody\\_titer\\_law.pdf](http://nj.gov/health/cd/documents/antibody_titer_law.pdf)

### **What are the strategies for controlling mumps outbreaks in schools?**

For all exposures consider the entire group that could have been exposed. That could be the whole school, whole work setting, etc. Do not forget to consider the staff as well.

Please see the question above regarding NJ's immunization requirements in school settings.

### **What is the guidance for staff in a school?**

Teachers and all staff should have their immune status verified. All staff should be educated on hygiene, prevention and signs and symptoms of disease.

### **Should children without acceptable presumptive evidence of immunity be excluded from school?**

The decision to exclude students should be made in consultation with public health authorities. To assist with control of mumps outbreaks in schools and colleges, students with zero doses of MMR vaccine and with no other evidence of mumps immunity might be excluded from schools/colleges affected by a mumps outbreak or other schools that are unaffected but deemed by local public health authorities to be at risk for transmission of disease. Excluded students can be readmitted immediately after they are vaccinated. Students who have been exempted from mumps vaccination for medical, religious, or other reasons might be excluded



through the 25<sup>th</sup> day after the onset of parotitis in the last person with mumps in the affected school.

**If my child was exposed to mumps during an outbreak and is less than a year old, should he/she receive their first MMR vaccine early?**

Although mumps-containing vaccine has not been shown to be effective in preventing mumps in persons already infected, it will prevent infection in those persons who are not yet exposed or infected. If persons without evidence of immunity can be vaccinated early in the course of an outbreak, they can be protected prior to exposure.

Measles, mumps, and rubella vaccine is safe to administer to children < 12 months of age. In fact, infants 6 months through 11 months of age should have at least one dose of measles-containing vaccine before any international travel. You should discuss the risks and benefits of vaccination with your child's healthcare provider. Children who receive a dose of vaccine prior to 12 months of age will need additional vaccine doses to be fully protected and to attend schools in NJ.

**If a 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?**

Although not recommended at this time, physicians may 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. The second shot must be given a minimum of four weeks after the first.

Therefore, if a physician administers the second dose to exposed students 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.

For more information about NJ's school immunization requirements, please visit <http://nj.gov/health/cd/imm.shtml>

## MUMPS CASES IN NEW JERSEY

### **Was there a mumps outbreak in NJ?**

The New Jersey Department of Health (NJDOH), in conjunction with the Hoboken Health Department, Stevens Institute of Technology, and additional local, county, and state health departments, is investigating an outbreak of confirmed mumps associated with Stevens Institute of Technology in Hoboken, NJ. NJDOH is working with the involved local health departments within NJ to manage the exposures.

As of 04/17/2014, 8 cases of mumps have been identified among students attending Stevens Institute of Technology. Cases range in age from 18 to 21 years and all have received two documented doses of mumps-containing vaccine. All cases had parotitis onset 04/06/2014.

Outbreaks can still occur in highly vaccinated U.S. communities, particularly in close-contact settings. In recent years, outbreaks have occurred in schools, colleges, and camps. However, high vaccination coverage helps limit the size, duration, and spread of mumps outbreaks. For more information on outbreaks, please visit:

<http://www.cdc.gov/mumps/outbreaks.html>

### **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, approximately 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 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.

### **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.

## **FOR MORE INFORMATION**

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

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

For additional information and materials on proper hand washing techniques, please visit the New Jersey Department of Health (NJDOH) Communicable Disease Service's Link: <http://nj.gov/health/cd/handwashing.shtml>  
This information is intended for educational purposes only and is not intended to replace consultation with a health care professional.