



## The Lumps of Mumps

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Mumps, also known as *parotis epidemica*, is a vaccine-preventable disease caused by the mumps virus. Prior to the widespread use of the mumps vaccine, mumps was a major cause of viral meningitis. Since the licensure of the mumps vaccine in 1969, the number of reported mumps cases has significantly decreased by more than 99%. However, there are occasionally reports of mumps from the community and it is for this reason that the mumps is our **Bug of the Month**.

### What is mumps?

Mumps is an acute contagious disease caused by the mumps virus. It is seen mainly in childhood, with the hallmark finding of unilateral or bilateral swelling of the parotid glands. The incubation period of 16 to 18 days is followed by fever, malaise, headache, weight loss, and enlargement of one or both parotid glands. These symptoms can develop over a period of two to three days. Older children may complain of tenderness over the parotid gland before actual swelling becomes evident. The parotid enlargement may displace the ear lobe upwards and obliterate the space between the mandible and the sternomastoid muscle. Other salivary glands, the submandibular and the sublingual salivary glands, may also become inflamed. However, salivary gland swelling is not apparent in about 30% of cases. Up to 20% of mumps infections are asymptomatic and 40%-50% may manifest primarily with respiratory symptoms.

### How is mumps spread?

Mumps is a human disease which occurs worldwide. A carrier state does not exist and the disease is transmitted by persons who are asymptomatic or who do not have classical manifestations. The peak incidence of mumps is in the late winter and early spring, but it is reported to occur throughout the year. Mumps is generally transmitted from about three days prior to the onset of symptoms to about four days after. Since the virus replicates in the nasopharynx and lymph nodes, transmission is either airborne or through direct contact with infected droplets of saliva. The virus has a low infection rate with about one-third of exposed susceptible persons developing subclinical infections. Mumps is rare in infancy, possibly due to the persistence of maternal antibodies.

### What are the complications?

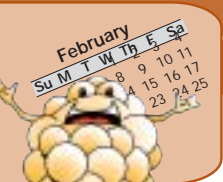
The complications associated with mumps are shown in Table 1. These complications are always more serious and occur more frequently in adult patients. Some of the major complications include:

- **Meningitis-encephalitis:** Meningitis is the most frequent complication in children (10% of cases). Encephalitis is much less common (0.1% of cases). Deafness occurs as a sequel of the meningitis (0.001% to 0.005% of cases).
- **Bilateral orchitis:** infertility is the most anxiety producing complication resulting from orchitis. Approximately 25% of adult males develop orchitis. However, 80% of these are unilateral orchitis, making infertility relatively rare. Testicular atrophy and irreversible infertility may develop in 40% to 70% of cases of severe bilateral orchitis.
- **Mumps and pregnancy:** There are some suspicions about the complications associated with mumps during early pregnancy,

Table 1

#### Complications associated with Mumps

Manifestation	Frequency
Central nervous system involvement	15% of clinical cases
Orchitis	20%-50% in post-pubertal males (sterility is rare)
Pancreatitis	2%-5% of clinical cases
Deafness	1 in 20,000 affected
Death	1-3 in 10,000 affected



such as increased risks of abortion, low birth weight, and birth defects. However, cohort studies have not yielded definitive results.

## How can mumps be prevented?

The mumps vaccine, rarely used alone, makes up part of the trivalent vaccine containing the live attenuated measles, mumps, and rubella vaccines (MMR). A single dose of MMR protects approximately 95% of children against mumps. Most children, however, receive two doses of the mumps vaccine. The second dose, recommended as part of the two-dose MMR vaccine schedule, does not act as a booster, rather it serves to protect those who were not protected by the first. The MMR vaccine is recommended for all children > 12 months of age. Persons born before 1957 are generally presumed to be immune to mumps. A postexposure prophylaxis does not exist and vaccination after exposure is not harmful and may possibly prevent future disease. Considerations for vaccination are shown in Table 2.

## How is mumps diagnosed?

The diagnosis is usually clinical and should include a history of exposure. However, if there is a doubt, a rise in antibody titres is the most frequently used diagnostic method. The virus may also be cultured from saliva, urine or cerebrospinal fluid. The

excretion of the virus persists longer in the urine than in the saliva, and can be cultured from urine in 70% of cases.

## How is mumps treated?

There is no specific treatment for mumps. In general, management is symptomatic and supportive. For orchitis, the most frequent suggestions are:

- bed rest,
- narcotic analgesics,
- ice packs to the scrotum and
- scrotal support.

There are some experimental treatment options but the evidence of their effectiveness is not convincing. These options are:

- corticosteroids
- early incision of the tunica vaginalis
- interferon-alpha-2B

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Table 2

### Vaccination Considerations

Age of vaccination	• MMR vaccine is recommended for all children $\geq 12$ months of age.
Adverse reactions	• Malaise, fever (occurs most frequently in 5% of patients). Lasting up to three days and occurs seven to 12 days after MMR vaccination. • Parotitis, mild skin rashes (occurs occasionally). • Meningitis (occurs very rarely).
Precautions and Contraindications	• Individuals whose immune mechanism is impaired, excluding HIV cases (but patients with advanced HIV infection/AIDS should not receive MMR because it is a live virus vaccine). • Patients with a history of allergy to neomycin or gelatin, or mumps-containing vaccine. Trivalent vaccine containing the live attenuated measles, mumps and rubella vaccines. • Pregnant women

MMR: Trivalent vaccine containing the live attenuated measles, mumps and rubella vaccines