



# MUMPS

1. **Agent:** Mumps virus.
2. **Identification:**
  - a. **Symptoms:** An acute viral disease characterized by fever and by swelling and tenderness of one or more salivary glands (usually the parotid, occasionally the sublingual or submaxillary glands). The most common complication in postpubertal males is orchitis (testicular inflammation). Some degree of testicular atrophy may result; however, sterility is rare. Other complications include meningitis, encephalitis, pancreatitis, and deafness. As many as 30% of cases are subclinical.
  - b. **Differential Diagnosis:** Anterior cervical or preauricular lymphadenitis, suppurative parotitis, parotid duct stone, mixed tumors of the parotid gland, Mikulicz's syndrome and uveoparotid fever. Parotitis is often due to other viruses including parainfluenza, influenza A, and coxsackie.
  - c. **Diagnosis:** Clinical syndrome, serological, or virological evidence of infection. Note: In previously vaccinated persons, the IgM response can be non-existent or delayed and the IgG response can become quite elevated.
3. **Incubation:** Usually 16-18 days, but cases may occur from 12 to 25 days after exposure.
4. **Reservoir:** Human.
5. **Source:** Saliva of infected persons; respiratory tract secretions.
6. **Transmission:** Airborne transmission or through direct contact with infected droplets or saliva.
7. **Communicability:** 7 days before symptoms to 8 days after; greatest 2 days before through 5<sup>th</sup> day after parotid gland swelling.
8. **Specific Treatment:** None.
9. **Immunity:** After infection, lifelong.

## REPORTING PROCEDURES

1. **Reportable.** *California Code of Regulations*, Section 2500. Individual cases are reportable, but not investigated; submit CMR and any available laboratory results. Investigate outbreaks. Report case or suspect case within 7 calendar days from the time of identification by mail, telephone, fax, or electronic report.
2. **Report Form:**  
**MUMPS CASE REPORT (CDPH-8690).**  
**For Outbreaks: OTHER OUTBREAK / OTHER REPORTABLE DISEASE OR DISEASE OF UNUSUAL OCCURRENCE (CDPH 8554).**
3. **Notify Immunization Program immediately of:**
  - a. Outbreaks of 2 or more cases occurring within 4 week period at day-care, school, college, or university; or
  - b. Sustained transmission (2 or more transmission cycles) occurring at a day-care, school, college or university.
4. **Epidemiologic Data:**
  - a. Known exposure to another case within incubation period.
  - b. Immunization history.
  - c. Knowledge of incidence in classroom, school, county, etc.

## CONTROL OF CASE, CONTACTS & CARRIERS

Clinical Case definition: an illness with acute onset of unilateral or bilateral tender, self-limited swelling of the parotid or other salivary gland(s), lasting at least 2 days and without other apparent cause.

Investigate outbreaks only. Initiate investigation within 4 days of notification.

### CASE:

**Precautions:** Exclude from school, day-care, work, and public gatherings until 5 days after the onset of parotitis.

### CONTACTS:



Exposure is defined as: 1) face-to-face contact for any length of time with an infectious case; or 2) direct contact with respiratory, oral, or nasal secretions from a mumps case.

Immunize all susceptible contacts immediately. Mumps vaccination has not been shown to be effective in preventing mumps in persons already infected; it will prevent infection from subsequent exposure.

In outbreak, children with immunization waivers should be excluded from school for 26 days after the onset of parotitis in the last person in the school who develops mumps. The child may return to school immediately if they receive immunization.

Conduct surveillance of contacts for 25 days after exposure.

### PREVENTION-EDUCATION

1. Immunize all susceptibles, especially contacts to recent case. Adolescent and adult males are of special concern.
2. Discuss involvement of ovaries and testicles in persons past puberty.
3. Discuss possible CNS, pancreatic, and testicular involvement early or late in the disease.
4. Disinfect utensils and fomites soiled with nose and throat secretions and urine.
5. Implement droplet precautions, in addition to standard precautions.

### DIAGNOSTIC PROCEDURES

Clinical and epidemiological histories are required to aid the laboratory in test selections.

1. **Serology:** Paired sera (IgG) or one acute sera (IgM).

**Container:** VR SEROLOGY serum separator tube (SST, a red-gray top vacutainer tube).

**Laboratory Form:** Test Requisition and Report Form H-3021

**Examination Requested:** Mumps Serology.

**Material:** Whole clotted blood.

**Amount:** 8-10 ml.

**Storage:** Send to Public Health Laboratory as soon as possible. Store at 4° C and ship cold with ice packs.

**Remarks:** For paired sera collect first blood specimen as early as possible. Collect the second approximately 2 weeks after the first. Send each specimen as it is collected; do not store. IgM antibodies are best detected 5-10 days after onset but can be absent or delayed in previously vaccinated persons. If the acute specimen is IgM negative, then a second sample should be collected for IgM testing.

2. **Culture:** Buccal specimen for PCR or viral isolation at State VDRL, preferably within 3 days but no later than 10 days after symptoms. (Massage parotid gland area, then use Dacron swab to obtain buccal specimen by rubbing inside of each cheek with same swab.)

**Container:** Place swab in a tube containing 2-3 mls of viral transport medium (e.g. M4 media).

**Laboratory Form:** Test Requisition and Report Form H-3021

**Examination Requested:** Mumps Viral Culture and PCR.

**Material:** Buccal specimen

**Storage:** Store at 4° C and ship cold with ice packs. If more than 1 day delay in shipping, preserve at -70° C and ship on dry ice. Avoid freeze-thaw cycles.

If shipment contains both serum and viral samples, ship together by overnight service on cold packs (do not freeze serum).

**Remarks:** Urine samples may also be collected although they are less likely than buccal specimens to contain sufficient viral copies or virus-infected cells and are therefore not preferred.