

# Lab Testing for Mumps at the MDH Public Health Laboratory

## Clinical case definition

Consider laboratory testing for patients who meet the clinical case definition for mumps:

- Acute parotid gland or other salivary gland swelling (sublingual, submandibular) and/or
- Orchitis or oophoritis unexplained by a more likely diagnosis.

Providers should ask about exposure, travel (past month) and MMR history. This helps MDH assess suspicion level, but providers should not rule-out a suspect diagnosis based on those factors.

## Specimen collection

Specimens for PCR<sup>1</sup> (preferred):

- Collect specimens for PCR as soon as mumps is suspected (maximum 9 days after swelling onset). Consider day 0 as swelling onset date:
  - Day 0-5 of swelling: buccal swab
  - Day 6-9 of swelling: buccal swab and urine
- Send PCR specimens to the MDH Public Health Laboratory (MDH-PHL).

Serum for mumps IgM:

Mumps IgM can be done in addition to PCR but should not be the only method used as false positives are common.

- Collect serum as soon as mumps is suspected.<sup>2</sup>
- Send serum for measles IgM to your facility's usual reference laboratory.
  - Follow your reference lab's instructions for serum collection and submission.

## Specimen submission to MDH

- **Complete** a [Clinical Testing and Submission Form](http://www.health.state.mn.us/divs/phl/clin/form s.html) (<http://www.health.state.mn.us/divs/phl/clin/form s.html>).
  - Each specimen requires its own form
  - Completely fill out form and indicate which test is requested
- **Label** all tubes/containers with:
  - Patient name/date of birth
  - Date specimen collected and
  - Specimen type
- **Notify MDH** that specimens are being sent.
  - Use the [mumps reporting form](http://www.health.state.mn.us/divs/idepc /dtopics/reportable/forms/mumpsform.ht ml) (<http://www.health.state.mn.us/divs/idepc /dtopics/reportable/forms/mumpsform.ht ml>) **or**
  - Call 651-201-5414 or toll-free at 1-877-676-5414 and provide suspect case details:
    - Patient name/date of birth
    - Address/phone number
    - Clinical presentation
    - Known exposure, travel or MMR history
- **Keep specimen(s) cold:** Store/ship specimens at refrigeration temperature (2-8°C) on ice packs
- **Send** via overnight shipping to arrive Monday-Friday between 8 a.m. and 4:30 p.m. to:  
MDH Public Health Laboratory  
Attn: Biological Accessioning  
601 Robert St. N.  
St. Paul, MN 55155-2531
- For help with packaging and shipping, call MDH-PHL Biological Accessioning at 651-201-4953.
- **Note:** If mumps is strongly suspected, the health care provider should advise exclusion from all activities, including child care, school and work through 5 days following onset of swelling.

## Swabs and media

For mumps PCR, a swab in transport media should be sent. Dry swabs are not acceptable.

### Appropriate swabs and media:

- BBL Culture Swab, Culturettes, Dacron swabs
- Viral transport medium (VTM), Universal transport medium (UTM), M5, M4, Minimum Essential Medium (MEM), Saline, Balanced salt solutions (BSS), Sterile isotonic solutions, Phosphate buffered salines (PBS), Liquid Stuart's Medium

### Inappropriate swabs and media:

- Wood-tipped applicators, Cotton-tipped swabs, Calcium-alginate tipped swabs, Charcoal swabs, Gel swabs
- Anaerobic media

## Collection instructions: PCR

A buccal swab is preferred for mumps PCR. A throat swab is also acceptable but not preferred.

**Buccal swab:** Massage the buccal cavity (the space near the upper rear molars between the cheek and the teeth) for 30 and swab the area; obtain a generous amount of saliva. Place swab in a sterile tube containing 2-3 ml transport media.

**Throat swab:** Vigorously swab tonsillar areas and posterior nasopharynx with a viral culturette. Use tongue blade to depress tongue to prevent contamination of swab with saliva. Place swab into 2-3 ml of transport media.

**Urine specimen:** Collect 10-40 ml of urine in a sterile urine specimen container. Have patient void directly into container, collecting from the first part of the urine stream if possible. First-morning voided specimens are ideal, but any urine collection is adequate.

## Results and turnaround

- Results for testing done at MDH-PHL will be sent via fax to the submitting laboratory.
- Turnaround time for PCR results is typically 1-2 business days after receipt of specimen(s).
- Culture may be done on a specimen with negative PCR results. Turnaround time for culture is a minimum of 3 weeks.

## Additional information

For more information about clinical features and vaccine information, visit [Mumps Information for Health Professionals](http://www.health.state.mn.us/divs/idepc/diseases/mumps/hcp/index.html) (<http://www.health.state.mn.us/divs/idepc/diseases/mumps/hcp/index.html>).

### References

1. PCR: At MDH-PHL, reverse transcriptase polymerase chain reaction (RT-PCR) is used to detect viral RNA in a sample.
2. The optimal time to collect serum is at least 96 hours after swelling onset (so IgM has time to rise); however, it is crucial to get PCR specimens as soon as possible after swelling or symptom onset, so collect both serum and PCR specimens at the same time.

Vaccine-Preventable Disease Section  
 PO Box 64975  
 St. Paul, MN 55164-0975  
 651-201-5414  
[www.health.state.mn.us/immunize](http://www.health.state.mn.us/immunize)

*To obtain this information in a different format, call: 651-201-5414.*