

# Measles

## Reporting Obligations

Measles is designated as a disease of public health significance and is reportable under the *Ontario Health Protection and Promotion Act*. Report all suspect and confirmed cases **immediately by phone** to the health unit.

## Epidemiology

### Aetiologic Agent:

The measles virus is a member of the genus *Morbillivirus* of the family *Paramyxoviridae*.

### Clinical Presentation:

Symptoms of measles begin 7 to 21 days after exposure to a case of measles and include fever, runny nose, cough, drowsiness, irritability, and red eyes (conjunctivitis). Small white spots (known as "Koplik's spots") appear on the inside of the mouth and throat. Then, 3 to 7 days after the start of the symptoms a red, blotchy (maculopapular) rash appears on the face and then progresses down the body. Complications include diarrhea, respiratory problems, pneumonia, otitis media and encephalitis.

### Modes of transmission:

The virus is highly contagious and is spread by airborne droplet nuclei, close personal contact, or direct contact with the respiratory secretions of a case. Transmission can occur as a result of the persistence of the virus in the air or on environmental surfaces. Measles virus can remain active and contagious in the air or on infected surfaces for at least two hours. Measles is one of the most highly communicable infectious diseases.

### Incubation Period:

About 10 days, but may be 7-21 days from exposure to onset of fever, usually 14 days until rash appears; rarely as long as 19-21 days.

### Period of Communicability:

One day before the start of prodromal period, which is usually about 4 days before rash onset, to 4 days after the onset of rash.

## Risk Factors/Susceptibility

- Contact with case
- Travel
- Not immunized or partially immunized
- Immunocompromised/pregnant

After infection, immunity is generally lifelong. The following individuals should be considered susceptible: lack of documented evidence of vaccination with measles-containing vaccine (age dependent) or lack of laboratory evidence of prior measles infection or immunity.

## Diagnosis & Laboratory Testing

Lab confirmation of infection with clinically compatible signs and symptoms in the absence of recent immunization with measles-containing vaccine. Clinically compatible signs and symptoms are characterized by all of the following: fever  $\geq 38.3$  degrees Celsius (oral) and cough, coryza or conjunctivitis followed by generalized

maculopapular rash for at least three days.

Laboratory diagnosis of measles should include both diagnostic [serology](#) and [virus](#) detection.

## TESTING INFORMATION & REQUISITION

## Treatment & Case Management

There is no specific treatment for persons with measles infection; however severe complications can be avoided through supportive care that ensures good nutrition and adequate fluid intake. Individuals diagnosed with measles should be advised to stay home for 4 days after the appearance of the rash. Self-isolation will help to prevent further transmission of the virus.

A measles contact is any susceptible person who shared the same air space for any length of time during the period of communicability, including two hours after the case left the air space (e.g., home, school, day care, school bus, doctor's office, emergency room, etc.).

The timely administration of MMR vaccine or immune globulin (Ig) can be used to reduce the risk of infection in susceptible individuals exposed to measles. Post-exposure prophylaxis (PEP) is not 100% effective and contacts who receive PEP should be counseled on the signs and symptoms of measles and to avoid contact with high-risk individuals.

Immunization with MMR vaccine of immunocompetent susceptible contacts over 6 months of age within 72 hours after exposure may prevent measles infection. Susceptible individuals with a medical contraindication to MMR vaccine (infants under 6 months of age, pregnant women, and immunocompromised individuals) who are within 6 days of exposure should be offered Ig at the recommended dose. Certain immunocompromised individuals should also be considered to receive Ig for PEP regardless of their past vaccination status. Refer to the [GamaSTAN®S/D product monograph](#) for dosing recommendations. See detailed "[PEP information, page 8, MOHLTC](#)" and the [Canadian Immunization Guide](#).

Public Health staff will be involved with contact identification and tracing, assessing susceptibility, PEP information, and exclusion decisions.

## Patient Information

### PATIENT FACT SHEET

## References

1. [Ministry of Health, Infectious Diseases Protocol - Ontario Public Health Standards, 2022.](#)

## Additional Resources

1. [Public Health Ontario. "Defending Ontario against Measles." \(Includes resources and testing information\)](#)
2. [PHAC. "Measles – Vaccine Preventable Diseases."](#)
3. [MOHLTC. "Publicly Funded Immunization Schedules for Ontario", June 2022.](#)
4. [PHAC. "Canadian Immunization Guide, Measles Vaccine."](#)
5. [Simcoe Muskoka HealthSTATS: Measles](#)
6. [Public Health Ontario: Measles. "Measles," Dec 2022.](#)