

# West Nile Virus Illness

## Reporting Obligations

West Nile Virus 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 within **one business day** to the health unit.

### REPORTING FORM

## Epidemiology

### Aetiologic Agent:

West Nile Virus (WNV) is a mosquito-borne virus of the genus *Flavivirus*.

### Clinical Presentation:

There are three clinical manifestations of WNV; asymptomatic, non-neurological and neurological. The majority of WNV cases are asymptomatic. About 20% of infected persons develop the usually less severe symptom complex known as WNV non-neurological syndrome. This presents with a mild flu-like illness with fever, headache, and body aches, occasionally with a skin rash and swollen lymph nodes or other non-specific symptoms that last several days. Other symptoms may include nausea, vomiting, eye pain or photophobia.

WNV neurological symptoms can present as an encephalitis illness as well as conditions similar to acute flaccid paralysis, and Parkinson's disease. Fewer than 1% of infected people will develop neurological symptoms.

### Modes of transmission:

Mosquitoes are the main vectors of WNV with the *Culex* genus being the primary vector. In Ontario the main vectors of concern are *Culex pipiens* and *Culex restuans*. Indirect human transmission can occur through blood and organ donations. Most infants born to women who have contracted WNV during pregnancy have no infection or clinical abnormalities. There is only one reported case of confirmed congenital WNV infection. There is one report of WNV infection transmitted from human milk, but the infant remained asymptomatic.

### Incubation Period:

Usually 2-15 days.

### Period of Communicability:

No direct person-to-person transmission. Infected mosquitoes probably transmit virus throughout life.

## Risk Factors/Susceptibility

Susceptibility appears to be general and throughout life in both sexes at all ages. Persons over 50 years of age and immunocompromised persons have the highest risk of severe disease.

Risk factors include spending time outdoors during the early morning or evening hours, having exposed skin during these hours, and not wearing insect repellent with DEET.

## Diagnosis & Laboratory Testing

Diagnosis is based on clinical presentation and serological test results. Any of the following serological test results will constitute a confirmed case of WN virus:

- Positive West Nile virus culture
- Positive for West Nile virus antigen in tissue
- Positive for West Nile virus-specific nucleic acid
- Positive for West Nile virus-specific antibody
- Diagnostic rise in West Nile virus antibody titre

### TESTING INFORMATION & REQUISITION

## Treatment & Case Management

There is no specific treatment for this virus, but the symptoms and complications of the disease can be treated. Provide education regarding: the use of insect repellent when outdoors; wearing long sleeve shirts and long pants and light-colored clothes; cleaning up mosquito-friendly areas around your home regularly such as standing water.

Current labels on DEET-containing repellants state that they should not be applied to children under 2 years of age. Health Canada, however, recommends that "DEET may be considered for children aged 6 months to 2 years, where there is a high risk of complications to the child from insect bites. Use sparingly, avoid the face and hands, apply only once a day, and use only the least concentrated product (10% or less)."

Public Health will investigate the case to determine potential source of infection.

## Patient Information

### PATIENT FACT SHEET

## References

1. [Ministry of Health, Infectious Diseases Protocol - Ontario Public Health Standards, 2022.](#)
2. [Public Health Agency of Canada, West Nile virus.](#)

## Additional Resources

1. [Public Health Ontario. "West Nile Virus", Dec 2022.](#)
2. [Centers for Disease Control and Prevention—Division of Vector-Borne Diseases. "West Nile Virus"](#)
3. [Simcoe Muskoka HealthSTATS: WNV](#)