

Backgrounder on West Nile Virus (WNV)

WNV History and Geographic Spread

WNV was first identified in Uganda in 1937 and has since been found in parts of Southern Europe, the Middle East, Africa and Asia. The virus was introduced to North America in New York in 1999 and has since spread to all continental US states, and seven Canadian provinces including Alberta. In 2003 over 1000 people became ill with this illness in both Alberta and Saskatchewan. WNV has not yet been detected in British Columbia, but it is expected the virus will eventually make its way into BC.

WNV Infections, Testing and Monitoring

West Nile virus is transmitted through mosquito bites to humans and other animals. Most people who become infected will experience no symptoms at all. About 20% of those infected will develop *West Nile Non-neurological Syndrome*, with symptoms such as fever, headache, weakness and body aches lasting one to two weeks. Less commonly, (less than 1%), WNV infection can result in *West Nile Neurological Syndrome* with serious health effects such as meningitis (inflammation of the lining of the brain) encephalitis (inflammation of the brain), and paralysis. Human illnesses most commonly begin in August.

Testing of patients who are ill with WNV symptoms is available through their physicians. Physicians are required to notify the medical health officer in their region about all probable and confirmed cases. Information about these cases will help public health officials plan appropriate prevention measures.

WNV and Birds

In nature, WNV exists in a cycle passing between birds and mosquitoes. Many bird species can be infected with WNV, but members of the “crow family” – called *Corvids* – (crows, ravens, magpies, and jays) have a high death rate when infected. For this reason, public health officials have found that testing of dead Corvids for WNV is an effective way of determining when the virus moves into a new area.

WNV and Other Animals

Several species can be infected with WNV. Horses are particularly susceptible to the virus. If you have horses, contact your veterinarian - a vaccine is available to help protect horses. Cats, dogs, domestic rabbits, skunks, bats, and even alligators have been known to be infected. Animals that are infected may have trouble walking or standing, may be listless, have a change in personality, and may shake their head from side to side. Contact your veterinarian with any questions about illness. If you are concerned about a food animal, there is no evidence whatsoever to suggest that eating an animal that may have been infected will cause illness. Also, meat that has come from a licensed abattoir will have been inspected prior to slaughter.

WNV and Mosquitoes

Dozens of mosquito species are found in British Columbia, but only a small number of these species are able to spread WNV. Monitoring of mosquitoes is therefore important to determine where these species are found, and which ones become infected with WNV. This knowledge is important to help in prevention planning.

WNV and the Blood Supply

While most human WNV infections are caused by mosquito bites, other much less common routes of infection have been identified such as through blood transfusions, donated organs, breast milk and *in utero* (before birth). Public health officials in British Columbia are working with the Canadian Blood Services to identify WNV infections in persons who may have recently donated or received blood or blood products. Canadian Blood Services introduced a new test to screen out blood donations containing West Nile virus in 2003. Being positive for WNV infection does not permanently disqualify someone from giving blood, they may give again at their next donation date 56 days later.

(See <http://www.bloodservices.ca/> for more information on the Canadian Blood Services action plan on WNV.)

Mosquito Control and Integrated Pest Management (IPM)

IPM is a process that includes monitoring mosquitoes and their breeding habitats, and using appropriate measures to control problem mosquitoes. Control measures can include eliminating mosquito breeding sites, placing larvicide pellets in breeding sites and public education. Spraying insecticides to control adult mosquitoes is much less effective, and will only be considered as a last resort if there is a very high risk to humans from WNV. Modifications or treatments of ditches, swamps, streams, lakes and other water bodies that are not man-made and self-contained must be authorized by the Ministry of Environment.

WNV Personal Prevention Measures

While the risk of anyone becoming seriously ill from WNV infection is low, it is important to remember the preventive measures that everyone can take in order to ensure the lowest risk of infection possible. Any activity that either prevents mosquitoes from biting or prevents them from breeding will help to further reduce the risk of infection.

To protect yourself and your family from mosquito bites:

- Wear a hat and baggy, long-sleeved shirts and pants, weather permitting.
- Wear light-coloured clothing since dark colours attracts mosquitoes.
- Use mosquito repellents that contain DEET. The percentage of DEET in repellents should not exceed 30% for adults or 10% for children. DEET should not be used on children under 6 months of age. Ensure you read the instructions before application.
- You may also try "Oil of Lemon Eucalyptus" in "Off Botanicals" as an alternative for those who don't want to wear DEET, but it is not long lasting. DEET is considered by authorities to be safe when used according to the label.
- Install screens on your doors and windows. Make sure they fit tightly and have no holes in them.
- Protect yourself while in woodland, forests, salt marshes, and near coastal rock pools or any other places where mosquitoes may bite during the day.
- Try to avoid spending time outdoors between dawn and dusk when mosquitoes are most active.

To prevent mosquitoes from breeding:

It doesn't take much time (about 1 week), or water (as little as 1 teaspoon), for mosquitoes to develop from eggs into adults. We can all reduce risk by doing the following:

- Empty saucers under flower pots.
- Change water in bird baths twice a week and pet water dishes daily.
- Put an aerator or fish into ornamental ponds (mosquitoes don't lay their eggs in moving water).
- Empty wading pools when not in use; drain tarps, pool covers, and trampolines that fill with rainwater.
- Unclog rain gutters.
- Use fine mesh to cover rain barrels and containers that cannot be dumped.
- Remove used tires and other debris where rainwater may collect.
- If there is a large area of stagnant water near your house, but not on your property, that you are concerned about, please contact your local engineering or public works department. Where appropriate, arrangements may be made to drain it or prevent mosquitoes from breeding in it. In some municipalities, local by-laws may provide City staff with the power to order remedial action.