



MOSQUITOES and WEST NILE VIRUS

In 2014, Manitoba, Ontario and Quebec reported 21 human cases of West Nile virus to the Public Health Agency of Canada. While no fatalities were reported, 219 mosquito pools tested positive for West Nile virus in Canada.

The chance of contracting the West Nile Virus is generally low, but we highly recommend you follow these safety measures to protect your family and reduce any risks.



Mild symptoms of West Nile Virus include fever, headache, stiff neck, body aches, muscle weakness, swollen lymph glands, a rash and sensitivity to light. Serious cases involve high fever, rapid onset of severe headache, stiff neck, nausea, difficulty swallowing, vomiting, disorientation, confusion, loss of consciousness and paralysis.

Please click on any of the links below to go directly to your specified topic within this document.

[Insect Repellents](#)

[Health Risks of Mosquitoes and Tick Bites](#)

[What are Pesticides?](#)

[What are Insect Repellents?](#)

[Choosing a Personal Insect Repellent](#)

[Government of Canada's Role](#)

[How Does the West Nile Virus Spread to Humans?](#)

[The History of West Nile Virus](#)

[Need More Info on Bugs?](#)

[Additional Resources](#)

Minimize Your Risk

- ✓ During the hours of dusk and dawn always wear light coloured clothing when you are going outside. Mosquitoes are attracted to deep, dark colours such as black and brown.
- ✓ Wear long sleeved shirts and long pants.
- ✓ Tuck your pants into your socks for extra protection and wear closed shoes.



How to Keep Mosquitoes Away!

The best way to keep mosquitoes away is to clean up areas where they like to breed. Empty containers of standing water such as, old tires, flowerpots, barrels, tin cans, pool covers and drains. These areas are common breeding habitats.

- ✓ Make sure ditches are not clogged up.
- ✓ Regularly clean eaves troughs to prevent clogs that can trap water.
- ✓ Change the water in birdbaths every other day.
- ✓ Check flat roofs for standing water.
- ✓ Check the condition of the screens on your windows and doors for damaged sections.
- ✓ Make sure doors are tight fitting.
- ✓ Remove water that collects on pool covers and turn over kids pools when not in use.
- ✓ Turn over compost frequently.
- ✓ Fill in low depressions in lawn areas.

Insect Repellents

When considering using a personal insect repellent use only products that are federally regulated as such those that contain DEET (N,N-diethyl-m-toluamide).

Children under 6 months of age

Do **NOT** use personal insect repellent containing DEET on infants. Use a mosquito net when your child is outdoors in a crib, playpen or stroller.

Children aged 6 months to 2 years

In situations where high risk of complications from insect bites exist, the use of one application per day of DEET may be considered for this age group with the following guidelines:

- The least concentrated product (10% DEET or less) should be used.
- Apply product sparingly and avoid the face and hands.
- Prolonged use should be avoided.



Children between 2-12 years of age

- The least concentrated product (10% DEET or less) should be used.
- Do not apply more than three times a day and never apply to the face and hands.
- Prolonged usage should be avoided.

Health Risks of Mosquitoes and Tick Bites

Around the globe, mosquito and tick bites can lead to a wide range of diseases. Here in Canada, West Nile virus and Lyme disease are the only significant health concerns. For most Canadians, the risk of contracting these illnesses and suffering from serious health effects is low. Your best protection from illness is to take preventative measures, including the use of insect repellents that have been approved by Health Canada, or to cover exposed skin with clothing as much as possible. Approved Health Canada products have a Pest Control Product (PCP) registration number on the product label.

What are pesticides?



Pesticides are products used to control, destroy or inhibit the activities of pests. Some pesticide products are available for domestic use, while a larger number are available for commercial and restricted uses. All pesticide products are highly regulated at all levels of government.

What are insect repellents?

Insect repellents are an effective aid applied to skin, clothing, or other surfaces, which discourage insects from landing or climbing on that surface. Insect repellents help prevent and control the outbreak of insect-borne diseases such as malaria, Lyme disease, Dengue Fever and West Nile Virus.



Choosing a Personal Insect Repellent

Choose a product that meets your needs. For example, if you plan to be outdoors for a short period of time, choose a product with a lower concentration of repellent and then repeat an application, if necessary.

Use only personal insect repellents that have a Pest Control Product registration number and are labelled as insect repellents for use on humans. Never use a product labelled as an insecticide on your body.

Sunscreen and Personal Insect Repellents

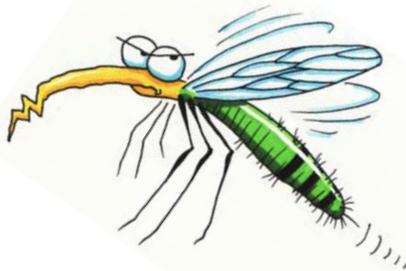
Sunscreen and personal insect repellents can be used safely at the same time. Follow the instructions on the package for proper application of each product. Apply the sunscreen first, and follow with the insect repellent.

P-menthane 3,8-diol

Products containing this active ingredient are registered in Canada. They provide up to 2 hours of protection against mosquitoes and up to 5 hours of protection against black flies, but should not be used on children under three years of age.

Soybean Oil

Soybean oil, 2% blocker repellent is another personal insect repellent that provides protection for 3.5 hours against mosquitoes and for up to 8 hours for black flies. There are no age restrictions or limitations on frequency of use with these products.



Citronella

In 2004, Health Canada completed a review of the available information on citronella-based personal insect repellents that are applied directly to the skin. There was a lack of safety data to support continued registration. However, since Health Canada did not identify any imminent health risks, citronella-based personal insect repellents will remain on the market until a final decision is made. Registered products containing citronella protect people against mosquito bites from 30 minutes to two hours. These products should not be used on infants and toddlers. Certain products containing citronella have a limit on the number of applications allowed per day. Read the product label and instructions before considering an application.

Not Recommended for Personal Protection

The following products are not recommended for a variety of reasons. They may not be very effective or long lasting, and may have the potential to be harmful to your health.

- Electronic or ultrasonic devices
- Electrocuting devices, such as bug zappers
- Wristbands, neckbands and ankle bands impregnated with repellents
- Odour-baited mosquito traps
- Citrosa houseplants
- Vitamin B1 taken orally
- Skin moisturizers and insect repellent-combination products are not approved for use by Health Canada. Use separate products simultaneously when required.

Safety Tips for all Personal Insect Repellents

- Follow the label directions including restrictions for use on children and the maximum number of applications allowed per day.
- Apply the repellent sparingly, and only on exposed skin surfaces or on top of clothing. Do not use under clothing. Heavy application and saturation are unnecessary for effectiveness. Repeat applications only as necessary and directed on the product label
- Try not to get repellent in your eyes. If you do, rinse immediately with water.
- Do not use the repellent on open wounds, or if your skin is irritated or sunburned.
- Avoid breathing spray mists and never apply sprays inside a tent. Use only in well-ventilated areas. Do not spray repellent near food.
- When using sprays, do not spray directly onto face; spray on the palms of your hands first and then apply to face.



- Wash treated skin with soap and water when you return indoors or when protection is no longer needed.
- Keep all insect repellent containers out of reach of children and pets.
- Always supervise the application of insect repellent on children.
- Avoid applying repellent to children's hands to reduce the chance of getting the repellent in their eyes and mouths.
- If you suspect that you are, or that your child is reacting to an insect repellent, stop using the product immediately, wash treated skin, and seek medical attention. When you go to the doctor, take the repellent with you.
- If you are concerned that you might be sensitive to a product, apply the product to a small area of skin on your arm and wait 24 hours to see if a reaction occurs.

Government of Canada's Role

Health Canada's Pest Management Regulatory Agency (PMRA) is the federal agency responsible for the regulation of pesticides in Canada. The Agency's primary objective is to prevent unacceptable risk to human health and the environment from the use of approved pesticides.



The Public Health Agency of Canada works with a number of partners to reduce the risk of exposure to West Nile virus through education, research, prevention and response. Partners include the provincial and territorial Ministries of Health, other federal and provincial departments and agencies, and the Canadian Cooperative Wildlife Health Centre.

The Committee to Advise on Tropical Medicine and Travel (CATMAT) provides the Public Health Agency of Canada with ongoing medical, scientific and public health advice, as well as recommendations relating to the prevention and treatment of infectious diseases and other health hazards that Canadian travellers may encounter outside Canada. For international travellers, additional guidelines are available at the end of this article under the heading 'Additional Resources'.

How Does the West Nile Virus Spread to Humans

The West Nile Virus spreads to humans by the bite of an infected mosquito. Mosquitoes become infected when they bite an infected bird. The virus cannot spread person-to-person contact through touching, sneezing, coughing, or the sharing of the same drinking cup, and it cannot transfer from mammals to humans. Approximately 90% of West Nile Virus infections in humans are without any symptoms.

Dead birds in your community may be a sign of the presence of West Nile virus. Contact the Canadian Wildlife Health Cooperative to [report dead birds](#) that you suspect have West Nile virus.

The History of West Nile Virus

The West Nile Virus is a mosquito-borne virus that first appeared in 1937 in the West Nile region of Uganda, Africa.

In Canada, one human death occurred in 1999. In 2002, Canadian health officials reported ten human deaths out of 416 confirmed and probable cases. In 2003, 14 deaths and 1,494 confirmed and probable cases were reported in Nova Scotia, Quebec, Ontario, Manitoba, Saskatchewan, Alberta, British Columbia, and the Yukon.

In 2004, only 26 cases were reported and two deaths; however, 2005 saw 239 cases and 12 deaths. By October 28, 2006, 127 cases and no deaths were reported. One case was asymptomatic and only discovered through a blood donation. In 2007, 445 Manitobans had confirmed cases of West Nile Virus and two people died with a third unconfirmed but suspected.

Seventeen people either have tested positive or are suspected of having the virus in Saskatchewan, and only one person tested positive in Alberta. Saskatchewan reported 826 cases of West Nile Virus plus 3 deaths. For the first time, the spread of West Nile Virus was reported in British Columbia in 2009.

In 2012, United States reported 4,725 cases of West Nile Virus and 286 deaths. Texas endured a 1/3 of the serious cases and a 1/3 of the deaths. During this same period, Canada reported 450 cases of West Nile Virus and 6 deaths.

Need More Info on Bugs?

Pest Management Regulatory Agency, Health Canada
Publications Section
2720 Riverside Dr., A.L. 6605C
Ottawa, Ontario, K1A 0K9
PMRA Information Service: 1 800 267-6315 or (613) 736-3799



Click on [effective control of mosquitoes around your home](#) for more information.

Additional Resources

[West Nile Virus section](#) – Public Health Agency of Canada

[Public Health Reminder](#) - Government of Canada

For additional information on mosquito diseases, see the [Public Health Agency of Canada's infectious disease Web section](#)

For additional information for international travellers, see the [Committee to Advise on Tropical Medicine and Travel Web section](#)

[Public Health Reminder](#) – Public Health Agency of Canada