



Health
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Your health and
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Insect Repellents

Updated: August 2012

Original: August 2008

IT'S YOUR HEALTH



Insect Repellents

THE ISSUE

Insect repellents can help you reduce mosquito and tick bites, which can cause a range of health problems, from itchiness and irritation to potentially serious diseases.

Mosquitoes can bite at any time of the day, but most species tend to be more active at dawn and dusk. **Ticks** are often found alongside hiking trails, particularly in wooded areas or tall grass.



HEALTH RISKS OF MOSQUITO AND TICK BITES

Around the globe, mosquito and tick bites can lead to a range of diseases, including **malaria**. In Canada, **West Nile virus** and **Lyme disease** are the primary health concerns. For most Canadians, the risk of contracting these illnesses is very low and the risk of serious health effects is also low.

Your best protection from illness is to take preventative measures. For example, use an insect repellent that has been approved

by Health Canada and 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.

REDUCE YOUR RISK

Besides using an insect repellent, you can reduce your risk by taking the following steps.

- **Get rid of standing water:** Mosquitos breed in standing pools of water, so remove standing water from items such as pool covers, saucers under flower pots, pet bowls, old tires and wading pools on your property. Empty and clean bird baths twice a week, and regularly clean eavestroughs to prevent clogs that can trap water.
- **Stay inside:** Whenever possible, avoid being outdoors at dawn or dusk when mosquitos are most active.
- **Wear long clothes:** Wear long-sleeved shirts, full length pants and closed shoes if you are outdoors when mosquitos are active or where ticks might be found.
- **Tuck in clothes:** If you are in an area where ticks might be found, you should also tuck your shirt into your pants and pull socks up over your pant legs. This will help keep ticks away from your bare skin.

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- **Wear light colours:** Light-coloured clothing will help reduce your overall attractiveness to mosquitos and allow you to see ticks more easily.
- **Seal holes in screens and doors:** Make sure you have screens on your windows that do not have any tears or gaps. Make sure doors are tight fitting.
- **Check clothes and pets for ticks:** When returning from areas where ticks may be found, check your clothes and your entire body for ticks. It is also important to regularly check pets.
- **Protect yourself when travelling:** If you plan to [travel to tropical areas](#) where serious mosquito-borne diseases such as malaria are common, see your doctor or visit a travel clinic several weeks before you go.



GENERAL USE INFORMATION FOR ALL PERSONAL INSECT REPELLENTS

- Always read the entire label carefully before using an insect repellent and follow all of the label directions, including restrictions for use on children and the maximum number of applications allowed per day.
- Apply only a small amount of repellent and only on exposed skin surfaces or on top of clothing. Do not use under clothing. Heavy application is not needed for effectiveness. Repeat applications only when needed and as directed on the product label.
- Try not to get repellent in your eyes. If you do, rinse them 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 repellents inside a tent. Use only in well-ventilated areas. Do not use near food.
- When using a repellent, do not spray directly onto your face; spray it on your hands first and then apply it to your 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 repellents 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 or your child is having [a reaction](#) to an insect repellent, stop using the product immediately, wash the treated skin, and get medical help. When you go to the doctor, take the product container 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 you have a reaction.

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 re-apply only if you need a longer protection time.

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.**



DEET

Registered products containing [Diethyl-meta-toluamide \(DEET\)](#) are acceptable for use when applied as directed. Health Canada completed its latest review of DEET products in 2002, which was also supported by the Canadian Paediatric Society.

The higher the DEET concentration in the repellent formula, the longer it provides protection. While this is true for protection against both mosquitos and ticks, DEET repels mosquitos for a longer time than ticks. To get protection from ticks look for a product that specifies use for ticks. Health Canada has approved the following concentrations for different age groups.

Prolonged use should be avoided in children under the age of 12.

- **Adults and children over 12:** Up to 30% concentration of DEET may be used for adults and children over 12 years of age. One application of 30% DEET should be effective for six hours against mosquitos.
- **Children aged two to 12:** Up to 10% concentration for children aged two to 12, applied up to three times daily. One application of 10% DEET should be effective for three hours against mosquitos.



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- **Children aged six months to two years:** Up to 10% concentration for children aged six months to two years, applied no more than once daily. One application of 10% DEET offers three hours of protection against mosquitos.
- **Children under six months:** Do not use personal insect repellents containing DEET on infants under six months of age. Use a mosquito net when the child is outdoors in a crib, playpen or stroller.

P-MENTHANE 3.8-DIOL

Products with the active ingredient **P-menthane 3.8-diol** are registered in Canada. They provide up to two hours of protection against mosquitos and up to five hours of protection against black flies, but should not be used on children under three years of age. These products can be applied up to two times a day.

SOYBEAN OIL

Soybean oil, a 2% blocker repellent, is another personal insect repellent that provides protection for three and a half hours against mosquitos and for up to eight hours against 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 for 30 minutes up to two hours. These products should not be used on infants or toddlers.

Certain products containing citronella have a limit on the number of applications allowed per day. Read the product label before using.

SUNSCREEN AND PERSONAL INSECT REPELLENTS

Products combining skin moisturizer and insect repellent are not approved for use by Health Canada. Use separate products simultaneously when needed.

Sunscreen and personal insect repellents can be used safely at the same time.

To properly apply the product, follow the instructions on the package. Apply the sunscreen first and then the insect repellent.

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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 they may have the potential to be harmful to human health.

- electronic or ultrasonic devices
- electrocuting devices, like bug zappers
- wristbands, neckbands and ankle bands that contain repellents
- odour-baited mosquito traps
- citrosa houseplants
- Vitamin B1 taken orally
- skin moisturizers and insect repellent-combination products

GOVERNMENT OF CANADA'S ROLE

Health Canada's Pest Management Regulatory Agency is the federal body responsible for the regulation of pesticides in Canada. The Agency's main 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 for 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 on the CATMAT website below.

FOR MORE INFORMATION

Pest Note—Mosquitoes at: www.hc-sc.gc.ca/cps-spc/pubs/pest/_pnotes/mosquitos-moustiques/index-eng.php

Public Health Agency of Canada, West Nile Virus section at: www.phac-aspc.gc.ca/wnv-vwn/index-eng.php

Health Canada, West Nile virus web section at: www.hc-sc.gc.ca/hc-ps/dc-ma/wnv-vno-eng.php

It's Your Health—West Nile virus: www.hc-sc.gc.ca/hl-vs/iyh-vsv/diseases-maladies/wnv-vno-eng.php

It's Your Health—Lyme disease at: www.hc-sc.gc.ca/hl-vs/iyh-vsv/diseases-maladies/lyme-eng.php

Travel Health, Malaria at: www.phac-aspc.gc.ca/tmp-pmv/info/malaria-eng.php

Public Health Agency of Canada's infectious disease web section at: www.phac-aspc.gc.ca/id-mi/index-eng.php

Committee to Advise on Tropical Medicine and Travel web section at: www.phac-aspc.gc.ca/tmp-pmv/catmat-cctmv/index-eng.php

Health Canada, Pesticides and Pest Management at: www.hc-sc.gc.ca/cps-spc/pest/index-eng.php

Canadian Cooperative Wildlife Health Centre at: www.ccwhc.ca/

FOR INDUSTRY AND PROFESSIONALS

Health Canada, Pesticide Public Registry at: www.hc-sc.gc.ca/cps-spc/pest/part/protect-proteger/publi-regist/index-eng.php

Pest Management Regulatory Agency at: www.hc-sc.gc.ca/ahc-asc/branch-dirigen/pmra-arla/index-eng.php

Re-evaluation Decision Document: Personal insect repellents containing DEET (N,N-diethyl-m-toluamide and related compounds) at: www.hc-sc.gc.ca/cps-spc/pubs/pest/_decisions/rrd2002-01/index-eng.php

RELATED RESOURCES

Health Canada, Sun safety at: www.hc-sc.gc.ca/hl-vs/sun-sol/index-eng.php

It's Your Health—Sunscreen at: www.hc-sc.gc.ca/hl-vs/iyh-vsv/life-vie/sun_soleil-eng.php

Public Health Agency, Travel health section at: www.phac-aspc.gc.ca/tmp-pmv/index-eng.php

For safety information about food, health and consumer products, visit the [Healthy Canadians](http://www.healthycanadians.gc.ca) website at: www.healthycanadians.gc.ca

For more articles on health and safety issues go to the *It's Your Health* web section at: www.health.gc.ca/iyh

You can also call toll free at 1-866-225-0709 or TTY at 1-800-267-1245*

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