

# Preventing Mosquito Bites





## Why is it important to prevent mosquito bites?

Mosquitoes can spread diseases that make you sick. In Massachusetts, mosquitoes can give you eastern equine encephalitis (EEE) virus and West Nile virus (WNV).

Eastern equine encephalitis is a rare but serious disease. Symptoms include high fever, stiff neck, headache, and lack of energy. Swelling of the brain, called encephalitis, is the most dangerous complication, and can cause coma and death. Most cases in Massachusetts occur in the southeastern part of the state.

West Nile virus infections are more common than EEE, but most do not cause any symptoms. Mild WNV infections can cause fever, headache and body aches, often with a skin rash and swollen lymph glands. A small number of people (less than 1 out of 100) who get infected with West Nile virus develop more serious illness; this is more common in people over the age of 50. Symptoms of serious illness include headache, high fever, stiff neck, confusion, muscle weakness, tremors (shaking), convulsions, coma, paralysis, swelling of the brain, and sometimes death.

See your doctor if you develop these symptoms.

Only a small number of mosquitoes are infected at any given time, so being bitten by a mosquito does not mean you will get sick. However, the best way to avoid both of these illnesses is to prevent mosquito bites.

## What is the best way to prevent mosquito bites?

- Use mosquito repellent any time you are outdoors. Even being out a short time can be long enough to get a mosquito bite. Make sure to follow directions on the label.
- Be aware of mosquitoes around you. If mosquitoes are biting you, reapply repellent, or think about going inside.
- Be aware of peak mosquito hours. The hours from dusk to dawn are peak biting times for many species of mosquitoes. Take extra care to use repellent and protective clothing during evening and early morning — or consider avoiding outdoor activities during these times.
- Use mosquito netting on baby carriages or playpens when your baby is outdoors.
- When weather permits, wear long-sleeves, long pants and socks when outdoors.
- Make sure screens are repaired and are tightly attached to doors and windows.
- Remove standing water from places like ditches, gutters, old tires, wheel barrows, and wading pools. Mosquitoes can begin to grow in any puddle or standing water that lasts for more than four days, so don't let water collect around your home.
- Avoid camping overnight near freshwater swamps to reduce your risk of exposure to mosquitoes that carry the EEE virus. If you do go camping, use a tent with mosquito netting and use appropriate repellents.



## What kind of mosquito repellent should I use?

Different repellents work against different bugs. It is important to look at the active ingredient on the product label.

Repellents that contain DEET, permethrin, picaridin or IR3535 provide protection against mosquitoes. In addition, oil of lemon eucalyptus has been found to provide as much protection as low concentrations of DEET.

DEET products should not be used on infants under 2 months of age. Children older than two months should use products with DEET concentrations of 30% or less. In general, the higher the percentage of DEET, the longer it lasts. Products with DEET concentrations higher than 30% do not provide better protection, but they do last longer. Be sure to read the label to see what the concentration of DEET is, and how often it should be reapplied.

Permethrin products are intended to be used on items such as clothing, shoes, bed nets and camping gear and should not be applied to skin. Apply the permethrin to your clothes before you put them on and follow the instructions on the label.

Oil of lemon eucalyptus products should not be used on children under the age of three.

## Do “natural” repellents work?

A number of “natural” products are available for use as mosquito repellents. Tests show that most of these products do not provide the same level of protection, or work as long as products like DEET or permethrin. The exception is oil of lemon eucalyptus, which provides as much protection as low concentrations of DEET.

## Use these products wisely!

- Follow the instructions on the product label. If you have questions after reading the label, contact the manufacturer.
- Don't use repellents under clothing.
- Don't use repellents on cuts or irritated skin.
- Don't use repellents near the mouth or eyes— and use them sparingly around the ears. When using spray products, spray the product onto your hands first and then apply it to your face.
- Use just enough to lightly cover exposed skin and/or clothing. Putting on more does not provide better protection.
- Don't let children handle the product. When using repellents on children, put some on your hands first, and then apply it to the child. Don't put repellent on a child's hands.
- When you come inside, wash your skin and the clothes that had repellent on them.



## What should I do if I have a reaction to a repellent?

If you suspect that you or your child is having an adverse reaction to a repellent (for example, if you develop a rash or other symptoms you think were caused by using a repellent), remove any treated clothing, wash the affected area with soap and water, and contact your doctor or local poison control center. If you go to the doctor, take the repellent with you; the label information may be useful. The toll-free telephone number for the Regional Center for Poison Control is (800) 222-1222.

## What can I do to protect my animals?

Mosquitoes can infect horses and other animals. Horses are susceptible to WNV; and horses, llamas, alpacas, emus, ostriches and certain exotic game birds can get EEE. WNV and EEE viruses are not spread from horses or other mammals to humans in any way.

- Vaccines licensed for horses are considered highly protective and can even be used in some other species. Talk to your veterinarian about vaccinating your animals.
- Eliminate standing water by avoiding water overflow from troughs, reducing run-off and pooling of irrigation water, eliminating accumulated water in flower pots, and removing old tires and other containers in which water can collect.
- Eliminate piles of leaves, lawn clippings, and manure.
- Keep animals indoors during peak periods of mosquito activity (dusk and dawn).
- Avoid turning on lights inside barns during the evening and overnight. Mosquitoes are attracted to light.
- Apply mosquito repellents approved for use in animals. Read the product label before using, and follow all instructions carefully.

## Where can I get more information?

### For additional information on EEE and WNV:

**Massachusetts Department of Public Health (MDPH)**

*Division of Epidemiology and Immunization*

(617) 983-6800 or toll-free at (888) 658-2850

[www.mass.gov/dph/wnv](http://www.mass.gov/dph/wnv)

### For information on mosquito control in your city or town:

**Massachusetts Department of Agricultural Resources**

*State Reclamation and Mosquito Control Board*

(617) 626-1777

[www.mass.gov/agr/mosquito/index.htm](http://www.mass.gov/agr/mosquito/index.htm)

Or call your local Board of Health.



**Massachusetts Department of Public Health**  
*Bureau of Infectious Disease*  
*Division of Epidemiology and Immunization*  
305 South Street  
Jamaica Plain, MA 02130  
Phone: 617-983-6800