



Eastern Equine Encephalitis (EEE)

What is an eastern equine encephalitis virus infection?

Eastern equine encephalitis (EEE) virus is a rare but serious disease spread to people through the bite of an infected mosquito.

How is EEE virus spread?

The virus that causes EEE is spread through the bite of an infected mosquito. Mosquitoes become infected when they bite infected birds. Infected mosquitoes will then occasionally feed on horses, humans and other mammals. Although humans, horses and other types of mammals can become infected, they do not spread disease.

What are the signs and symptoms of an EEE virus infection?

Some people infected with EEE virus do not become ill. When symptoms do occur they can range from flu-like symptoms such as a high fever and headache to more serious illness. Other symptoms include muscle aches, lack of energy, neck stiffness or confusion. Severe cases develop swelling of the brain (encephalitis) which can be dangerous. These symptoms show up four to ten days after a bite from an infected mosquito and illness usually lasts about 1 to 2 weeks, but it often takes much longer to recover.

How common is EEE in Boston?

EEE is a very rare disease. In Massachusetts, mosquitoes infected with the EEE virus are most often found in and around freshwater swamps. Since 1938, when the virus was first identified in Massachusetts, there have been fewer than 100 people who had EEE. Mosquitoes that carry EEE are rare in Boston but are much more common in areas such as Plymouth and Norfolk counties.

Who gets EEE virus infections?

Most mosquitoes do not transmit disease, however, anyone bitten by an infected mosquito can get EEE virus. People of all ages are at risk of developing serious illness after being infected with the EEE virus.

Is there a vaccine to protect humans from eastern equine encephalitis?

No. There is no vaccine because the virus is so rarely occurs in people. But there is a vaccine for use in horses.

What is the treatment for EEE virus infection?

There is no specific treatment for EEE virus infection. A healthcare provider may prescribe medications to relieve the symptoms of the illness. Many cases will require hospitalization.

How is the Boston Public Health Commission (BPHC) tracking and controlling EEE?

BPHC works with the Suffolk County Mosquito Control Project to trap and test mosquitoes around Boston for EEE during the summer and fall months. Positive tests are reported online (www.bphc.org/mosquitocontrol). Mosquito control measures are also implemented during summer and fall months. Wetlands, storm drains, and other areas around the city are treated to limit the number of mosquitoes.

How Can I Protect Myself?

Steps to prevent mosquito bites:

If you are outdoors in an area with mosquitoes, consider these options:

- Use a mosquito repellent. Repellents approved by the EPA include those containing DEET, oil of lemon eucalyptus, Picaridin or IR3535. Read the directions on the product label to find out about precautions that need to be taken and how long the product is effective. After returning indoors, wash off repellent with soap and water and wash treated clothes before wearing again. Do not use these products on pets unless the label approves.
- If you use a product containing DEET, do not use concentrations of more than 30% on adults and use low concentrations of DEET on children. Apply DEET to exposed skin (not eyes or mouth) and on clothes, but do not use on open cuts or wounds. Do not apply underneath clothes.
- Do not let children apply repellants to themselves. Apply the repellent to your hands and rub it on your child. Do not apply repellants to children's eye, mouth, or hands and use cautiously around ears. Do not apply DEET on infants (mosquito netting can be used over infant carriers) or oil of lemon eucalyptus to children under 3 years of age.
- Wear protective clothing such as long sleeved shirts, long pants and socks whenever possible. Tuck your shirt into your pants to keep mosquitoes from going under your clothes.
- Although mosquitoes can bite at any time of day, try to limit time outdoors between dusk to dawn when mosquitoes are most active.
- Make sure window and door screens don't have holes in them. Screens in good condition will help prevent mosquitoes from getting inside your house.

Steps to prevent mosquito breeding:

Mosquitoes need water to breed. They can develop into adults in as little as a week. Make sure items around your home don't collect water. Items that do collect water should be cleaned once a week.

- **Containers:** Turn over or cover unused flowerpots, buckets, garbage cans, and wheelbarrows. Change water in birdbaths once a week.
- **Gutters:** Remove leaves and other debris that can clog gutters and trap water.
- **Pools:** Cover unused swimming pools and turn over kiddie pools when not in use. Be sure to keep swimming pool covers clear of leaves and water. Keep large pools treated and circulating.
- **Old Tires:** Cover or dispose of them. They are a favorite mosquito-breeding site.

