

Eastern Equine Encephalitis (EEE)

- [Versión en español](#) (August 2011)

What is eastern equine encephalitis?

Eastern equine encephalitis (EEE) is a rare but serious viral disease spread by mosquitoes that can affect people and horses. EEE can also cause disease in captive birds such as the ring-necked pheasant, emu, ostriches, quail and ducks. EEE infection and disease can occasionally occur in other livestock, deer, dogs, other mammals, reptiles and amphibians.

How common is EEE in people?

In the United States, approximately 5-10 EEE cases are reported annually. Five human cases have been reported in New York State: one each in 1971, 1983, 2009, 2010 and 2011. All were fatal. The risk of getting EEE is highest from late July through September when more mosquitoes are present and active.

How is eastern equine encephalitis transmitted?

EEE is transmitted by the bite of an infected mosquito. Mosquitoes become infected by feeding on infected birds. Infected mosquitoes will then occasionally feed on horses, humans and other mammals. Several species of mosquitoes can become infected with the EEE virus (EEEV). EEE is not spread person-to-person, from people to animals or from animals (other than mosquitoes) to people.

Who is at risk of becoming infected with EEE?

People of all ages are at risk for infection with the EEE virus but people over age 50 and younger than age 15 are at greatest risk for developing severe disease.

What are the symptoms of eastern equine encephalitis?

Most people bitten by an infected mosquito will not develop any symptoms.

Severe cases of EEE infection begin with the sudden onset of headache, high fever, chills, and vomiting. The illness may then progress into disorientation, seizures, encephalitis (inflammation of the brain) and coma. Approximately a third of patients who develop EEE die, and many of those who survive have mild to severe brain damage.

When do symptoms appear?

It takes 4-10 days after the bite of an infected mosquito to develop symptoms of EEE.

What is the treatment for eastern equine encephalitis?

There is no specific treatment for EEE. Antibiotics are not effective against viruses, and no effective anti-viral drugs have been discovered for the treatment of EEE. Severe illnesses are treated by supportive therapy, which may include hospitalization, respiratory support, IV fluids and prevention of other infections.

Do all mosquitoes transmit disease?

No. Most mosquitoes do not transmit disease. There are more than 70 species of mosquitoes in New York State, but only a few species are capable of transmitting the EEE virus.

Is there an EEE vaccine for humans?

There is no human vaccine for EEE. The best way to protect yourself is to keep mosquitoes from biting you.

How can people reduce the chance of getting infected with EEE?

Prevent mosquito bites. There is no vaccine or preventive drug.

- Use insect repellent containing DEET, picaridin, IR3535 or oil of lemon eucalyptus on exposed skin and/or clothing. The repellent/insecticide permethrin can be used on clothing to protect through several washes. Always follow label directions.
- Wear long sleeves and pants when weather permits.
- Have secure, intact screens on windows and doors to keep mosquitoes out.
- Eliminate mosquito breeding sites by emptying standing water from flower pots, buckets, barrels, and other containers. Drill holes in tire swings so water drains out. Keep children's wading pools empty and on their sides when they are not being used.

What can be done to protect horses from eastern equine encephalitis?

There are EEE and West Nile virus vaccines available for horses. In consultation with a veterinarian, vaccinate your horse(s) against these viruses. Change the water in water troughs is changed at least twice a week to discourage mosquito breeding.

What is being done to control mosquitoes?

The New York State Department of Health (NYSDOH) has conducted a comprehensive program to study, understand and control EEE in Central New York for several decades. While personal protective measures remain a critical step to prevent EEE infection, the NYSDOH provides consultation to county health departments on control measures. Check with your local health department to find about the mosquito control program in your community.

Where can I get more information about EEE?

For more information about Eastern Equine encephalitis in humans, [visit the Centers for Disease Control and Prevention \(CDC\)](#).

For more information about EEE in horses, talk to your animals' veterinarian.

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