

New York State Department of Health

Eastern Equine Encephalitis

Last Reviewed: November 2006

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, quail and ducks.

How common is Eastern equine encephalitis in people?

EEE is very rare. According to the Centers for Disease Control and Prevention there have been 221 confirmed human cases in the United States from 1964 to 2004. Most states east of the Mississippi River have had documented human cases of EEE. Many of these cases have occurred in east coast states with large freshwater swamps. The four states with the highest number of human cases are Florida, Massachusetts, New Jersey and Georgia. Two human cases have been reported in New York State, one in 1971 and the other in 1983. Both were fatal. The risk of getting EEE is highest from late July through September.

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. The virus that causes EEE is spread only by mosquitoes. People and horses do not directly spread the disease to horses or people.

Who is at risk of becoming infected with Eastern equine encephalitis?

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

What are the symptoms of Eastern equine encephalitis?

Infection with EEE can cause a range of illnesses. Some people bitten by an infected mosquito will not develop any symptoms; others get only a mild flu-like illness with fever, headache, and fatigue. In rare cases, infection of the central nervous system occurs, causing sudden fever, muscle pains and a headache of increasing severity, often followed quickly by seizures and coma. Inflammation and swelling of the brain, called encephalitis, is the most dangerous complication. The case fatality rate for EEE (the percentage of people who develop the disease who will die) is between 30 – 70%. It is estimated that 35% of the people who survive EEE will have mild to severe disabilities.

When do symptoms appear?

The incubation period (the amount of time before symptoms appear) is between 5-15 days after the bite of an infected mosquito.

What is the treatment for Eastern equine encephalitis?

There is no specific treatment for EEE. Treatment focuses on supportive therapy to lower fever and ease the pressure on the brain and spinal cord.

Do all mosquitoes transmit disease?

No. Most mosquitoes do not transmit disease. There are about 60 different species of mosquitoes in New York State, but only a few species are capable of transmitting the EEE virus.

What can be done to prevent Eastern equine encephalitis?

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

- For information of how to reduce your chances from being bitten by mosquitoes, go to www.nyhealth.gov/diseases/west_nile_virus/prevention.htm

Follow these steps every summer to reduce your risk of being bitten by mosquitoes, particularly if you live near natural wetlands. These steps will also reduce your chance of being bitten by mosquitoes that may carry other viruses such as the West Nile virus.

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, please ensure that you vaccinate your horse(s) against these viruses. Also be sure that 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, along with other state agencies, local health departments, colleges and environmental groups, has prepared a plan to address issues related to West Nile virus and other mosquito-borne disease in the New York State and has devised a preventive strategy to minimize the impact. Local communities are implementing various control measures based on geographic location and level of risk. Specific information of the West Nile Virus Response Plans is available on the Department's Web site at www.nyhealth.gov/nysdoh/westnile/response_plan/index.htm.

Revised: August 2005