

[dkpdf-button]

What is Eastern Equine Encephalitis?

The eastern equine encephalitis virus (EEEV) is transmitted to humans by the bite of an infected mosquito. Eastern equine encephalitis (EEE) is a rare illness in humans and only a few cases are reported in the United States each year. Most illnesses occur in the Northeastern Atlantic states or the Gulf Coast states. EEE is one of the most severe mosquito-transmitted diseases in the United States with approximately 33% mortality and significant brain damage in most survivors.

Who gets Eastern Equine Encephalitis?

Anyone in an area where the virus is circulating can become infected with EEEV from an infectious mosquito bite. The risk is highest for people who live in or visit swampy woodland habitats in coastal regions or along the Great Lakes, and people who work outside or participate in outdoor recreational activities, which allows for greater exposure to potentially infected mosquitoes. However, cases of EEE in humans are rare.

How is Eastern Equine Encephalitis spread?

EEEV is transmitted through the bite of an infected mosquito. The primary EEEV vector is a swamp mosquito called the blacktailed mosquito (*Culiseta melanura*) which transmits the virus to birds, or becomes infected by feeding on infected birds in their swampland habitat. One of the most likely EEE vectors to people is the “cattail mosquito” (*Coquillea perturbans*) which breeds in cattail marshes, but disease transmission can come from several other floodwater mosquito species that most commonly occur in coastal or swampy areas. Transmission of the EEE virus does not occur directly from person to person.

What are the symptoms of Eastern Equine Encephalitis?

Severe cases of EEEV infection begin with the sudden onset of headache, high fever, chills, and vomiting, and may cause encephalitis (an inflammation of the brain) that results in disorientation, seizures, and coma. Approximately a third of patients who develop EEE die and many of those who survive have mild to severe brain damage. Fortunately, most persons exposed to EEEV do not develop noticeable symptoms.

How soon after exposure do symptoms appear?

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

How is Eastern Equine Encephalitis diagnosed?

Diagnosis of EEE is based on tests of blood or spinal fluid. These tests typically look for antibodies that the body makes against the viral infection.

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. Severe illnesses are treated by supportive therapy which may include hospitalization, respiratory support, intravenous (IV) fluids, and prevention of other infections.

How can Eastern Equine Encephalitis be prevented?

There is no vaccine or preventive drug for EEE. Avoiding mosquito bites is the main source of prevention.

- 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 the directions on the package.
- 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.

How can I get more information about Eastern Equine Encephalitis?

- If you have concerns about Eastern Equine Encephalitis, contact your healthcare provider.
- Call your local health department. A directory of local health departments is located at the [VDH Local Health Districts page](#).
- Visit the Centers for Disease Control and Prevention website at [the CDC's page on eastern equine encephalitis](#).

October 2018

Opens pdf to download

Opens document to download

Opens in a new window

External link will open in new window. Click link to exit Virginia Department of Health Website.