

## What is Eastern Equine Encephalitis (EEE)?

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 eastern or Gulf Coast states. EEE is one of the most severe mosquito-transmitted diseases in the United States with approximately 30% mortality in those with severe illness 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 lowland areas in eastern or Gulf Coast states, 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?

EEEV can result in febrile illness or neurologic disease. Severe cases of EEEV infection may cause encephalitis (an inflammation of the brain) or meningitis (inflammation of the membranes that surround the brain and spinal cord) that results in disorientation, seizures, and coma. Approximately a third of patients who develop EEE die and many of those who survive have long-term physical or mental problems. 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 primarily 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 vaccine or preventive drug 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?

Prevention of mosquito bites is the best protection against EEE:

- 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.

## 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. You can find your local health department at [vdh.virginia.gov/local-health-department/](https://vdh.virginia.gov/local-health-department/).
- Visit the CDC page on Eastern Equine Encephalitis at [cdc.gov/easternequineencephalitis/index.html](https://cdc.gov/easternequineencephalitis/index.html) for more information.

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