



## Frequently asked questions about Eastern Equine Encephalitis (EEE)

**From the Branch-Hillsdale-St. Joseph Community Health Agency**

### **What is Eastern Equine Encephalitis?**

Eastern equine encephalitis (EEE) is a mosquito-borne viral disease. EEE virus occurs in the eastern half of the United States where it causes disease in humans, horses, and some bird species. Because of the high mortality rate, EEE is regarded as one of the most serious mosquito-borne diseases in the United States.

### **How do people become infected with EEE?**

- EEE is transmitted to humans through the bite of an infected mosquito. It generally takes from 3 to 10 days to develop symptoms of EEE after being bitten by an infected mosquito.
- The main EEE transmission cycle is between birds and mosquitoes.
- Transmission to horses or humans requires mosquito species capable of creating a “bridge” between infected birds and uninfected mammals
- Horses are susceptible to EEE and some cases are fatal. EEE infections in horses, however, are not a significant risk factor for human infection because horses are considered to be “dead-end” hosts for the virus (i.e., the amount of EEE in their bloodstreams is usually insufficient to infect mosquitoes).

### **What type of illness can occur?**

- Many persons infected with EEE have no apparent illness. In those persons who do develop illness, symptoms range from mild flu-like illness to EEE (inflammation of the brain), coma and death.
- The mortality (death) rate from EEE is approximately one-third, making it one of the most deadly mosquito-borne diseases in the United States.
- There is no specific treatment for EEE; optimal medical care includes hospitalization and supportive care (for example, expert nursing care, respiratory support, prevention of secondary bacterial infections, and physical therapy, depending on the situation).
- Approximately half of those persons who survive EEE will have mild to severe permanent neurologic damage.

### **How many and where have human EEE cases occurred?**

- Approximately 220 confirmed cases in the US 1964-2004
- Average of 5 cases/year, with a range from 0-15 cases
- States with largest number of cases are Florida, Georgia, Massachusetts, and New Jersey.
- EEE transmission is most common in and around freshwater hardwood swamps in the Atlantic and Gulf Coast states and the Great Lakes region.
- Human cases occur relatively infrequently, largely because transmission takes place in and around swampy areas where human populations tend to be limited.

### **Who is at risk for developing EEE?**

- Residents of and visitors to endemic areas (areas with an established presence of the virus)
- People who engage in outdoor work and recreational activities in endemic areas

- Persons over age 50 and younger than age 15 seem to be at greatest risk for developing severe EEE when infected with the virus.

#### **How can people avoid EEE infection?**

- A vaccine is available to protect horses.
- People should avoid mosquito bites by employing personal and household protection measures, such as using an EPA-registered repellent (bug spray) according to manufacturers' instructions, wearing protective clothing, avoiding outdoor activity when mosquitoes are active (some bridge vectors of EEE are aggressive day-biters), and removing standing water that can provide mosquito breeding sites. For more information about preventing mosquito-borne disease see the West Nile Virus portion of our web site (go to Environmental Health)

#### **Will I have immunity if I have had it before?**

- EEE infection is thought to confer life-long immunity against re-infection with EEE.

#### **How is EEE monitored?**

- Human EEE cases are reportable by state health departments to the CDC. Reports of infected horses, mosquitoes, and birds are also collected.
- National human EEE case report data for 1964-2004 are posted on this website, by state, as is a map of reported human cases from 1964-2004.

#### **Are there more cases of EEE now? If so, why?**

- Risk of exposure to EEE-infected mosquitoes may increase as the human population expands into natural areas where the virus circulates (e.g., near hardwood, freshwater swamps in the eastern and north-central United States).

#### **Is there treatment for those who have been exposed?**

- No human EEE vaccine is currently licensed and it is unlikely that one will be available in the foreseeable future.
- No specific drug treatment for EEE is available.

**You can also visit us on the web for information about EEE and other communicable diseases as well as a variety of health related topics of interest at:**

[www.bhsj.org](http://www.bhsj.org)

**Or call your local Health Department office**

**Coldwater  
517-279-9561**

**Hillsdale  
517-437-7395**

**Sturgis  
269-659-4013**

**Three Rivers  
269-273-2161**