

# Eastern Equine Encephalitis (EEE) in Pennsylvania

## VECTOR MANAGEMENT



Pennsylvania  
Department of  
Environmental Protection



### What is Eastern Equine Encephalitis (EEE)?

EEE is an extremely rare but serious and often fatal viral infection that causes encephalitis (inflammation of the brain). It is spread to humans, horses, and other mammals through the bite of an infected mosquito. The first human cases were documented in Massachusetts in 1938. Since then, there have been sporadic small regional outbreaks usually near the preferred habitat (freshwater hardwood swamps) of the transmitting mosquito. Today, EEE is present in North America and the Caribbean.

### How common is EEE in Pennsylvania?

EEE is rare in Pennsylvania as there has only been one human case documented in the last twenty years. In addition to people, horses, birds (domestic or wild), and mosquitoes have tested positive for EEE in Pennsylvania. EEE is more commonly found outside the Commonwealth in the Great Lakes region and Atlantic/Gulf Coast states. In the US, there is an average of 11 cases documented annually.

### How is EEE diagnosed?

Your health care provider will evaluate signs and symptoms and determine if you have a travel history in an area where EEE virus is known to circulate. A blood or spinal fluid sample may be submitted for laboratory testing.

### How is EEE treated?

There is currently no vaccination or cure for EEE in people. Treatment is to alleviate symptoms which includes supportive therapy and intravenous fluids.

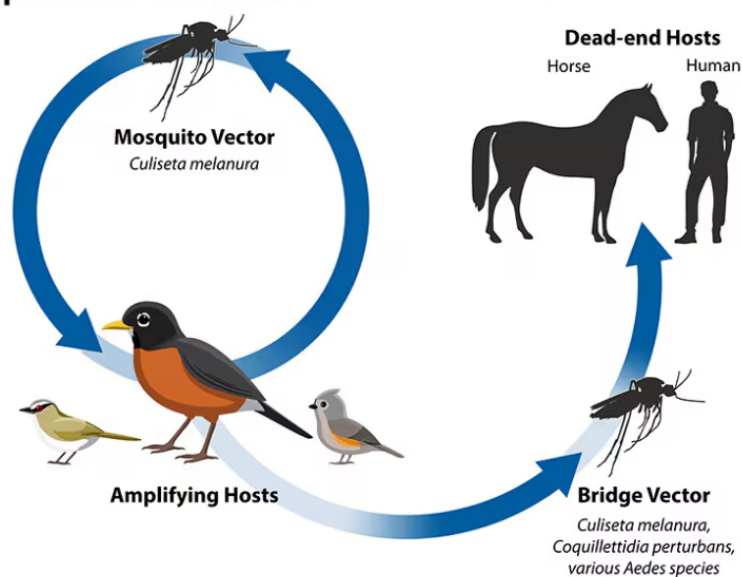
### How serious is it?

Although rare, EEE is fatal to 30% of people who develop neurological disease approximately 2 - 10 days after onset of symptoms. Of those who recover, many are left with long term neurological issues. Those that develop febrile illness usually fully recover in 1-2 weeks if the central nervous system is not involved.

### Eastern Equine Encephalitis Transmission

The Eastern equine encephalitis virus **cycles between mosquitoes and birds**. The *Culiseta melanura* mosquito, which primarily bites birds, is responsible for spreading the virus among birds. The virus then multiplies in the birds' bloodstream.

People and other animals, like horses, become infected with the virus when mosquito species that feed on many kinds of animals, feed on infected birds and then bite people. People and horses are considered **dead-end hosts** because unlike birds, they don't develop high levels of virus in their bloodstream and cannot pass the virus on to other biting mosquitoes.



CS 318140

# Eastern Equine Encephalitis (EEE) in Pennsylvania

## VECTOR MANAGEMENT



Pennsylvania  
Department of  
Environmental Protection



### Who is at risk to contract EEE?

Anyone who works or spends a lot of time outside in endemic areas is potentially at risk. Anyone can become infected, but those with underdeveloped or compromised immune systems and people under the age of 15 and over the age of 50 should especially take precautions.

Unlike other viruses (i.e. the common cold), EEE is unable to transfer to humans through the air or from skin to skin contact. It also cannot be transferred directly from infected animals to humans.

### What else is being done for protection against mosquitoes?

The Pennsylvania Department of Environmental Protection and fifty county vector programs implement an integrated pest management plan (IPM). This plan incorporates mosquito surveillance, public outreach and education, source reduction, and larval and adult control to limit mosquito populations. This reduces the transmission of mosquito-borne disease and allows the public to enjoy outdoor spaces.



### PROTECT YOUR HOME AGAINST MOSQUITOES



### What precautions can I take?

Because EEE is transmitted by mosquitoes, the best prevention method is to reduce the chance of mosquito bites.

Wear long sleeves and pants when outdoors at dusk or dawn as this is the time of day when mosquitoes are most active. The risk of contracting EEE is highest from late July through September.

Residents living in areas with freshwater hardwood swamps or boggy areas nearby should take extra precautions to prevent mosquito bites. Using an EPA approved insect repellent such as DEET, picaridin, or oil of lemon eucalyptus when spending time outdoors is recommended.



Please visit our website at  
[www.dep.pa.gov/westnile](http://www.dep.pa.gov/westnile)