

FAQ Eastern Equine Encephalitis and Horses

Eastern Equine Encephalitis (EEE), is a viral disease of wild birds that is transmitted to horses by mosquitoes. The virus is found near wetland habitats along the eastern seaboard from New England to Florida.

The virus responsible for EEE attacks the central nervous system of its host and horses are particularly susceptible to the infection. Onset is abrupt, and horse cases are almost always fatal. Symptoms include unsteadiness, erratic behavior and a marked loss of coordination. There is no effective treatment and seizures resulting in death usually occur within 48-72 hours after an animals first indication of illness.

EEE is not new to New York, but the disease is poorly understood by the average horse owner. A vaccine is available, but a surprisingly high number of valuable animals go unvaccinated each year. This fact sheet has been designed to answer the most commonly asked questions regarding EEE.

Where does EEE come from?

EEE virus occurs naturally in a wide variety of songbirds. Studies conducted in New York State implicate song sparrows, grey catbirds, wood thrushes, robins, black capped chickadees, catbird, and red-eyed vireos in virus transmission. EEE virus normally appears in local bird populations shortly after the nesting season is over in the spring. Mosquitoes transmit the infection from bird to bird during the early summer months and infections usually peak sometime in August. In some years, the virus remains in local bird populations and does not pose a health threat to horses or humans. When mosquito populations are high however, transfer from birds to horses and/or humans is possible. In a typical outbreak year, horse cases begin to appear in unvaccinated animals in mid-summer. All equine cases are the result of mosquitoes which have fed on infected birds and then feed on unvaccinated horses.

Does EEE represent a serious health threat to humans?

Human cases of EEE are very rare, averaging less than 5 cases per year in the United States. The disease, however, produces serious illness when it is contracted via mosquito bite and the probability of recovery is less than 50%. In overt cases, the virus produces an illness that begins with low fever, headache and stiff neck. As the disease progresses, the patient can fall into coma with death as a likely outcome. Recovery is possible but individuals that do recover usually do so with brain damage. Children appear to be more susceptible to overt cases than adults.

Can humans contract EEE directly from horses?

The virus that causes EEE cannot be passed from horses to humans by contact, body fluids, or any other physical mechanism. Moreover, horses do not circulate sufficient virus in the blood stream to re-infect mosquitoes. EEE is only acquired from mosquitoes that have previously fed on infected birds. A sick horse does not pose a health threat to its human owners. A sick horse is an indication that the local bird population is circulating virus and that local mosquitoes are making contact with the infection. Transmission is not possible from horse to horse, horse to human, or even horse to mosquito. Virtually the only way that EEE can be acquired is via the bite of a mosquito that has fed upon an infected bird.

What is the best method of protecting my horse?

The virus that produces EEE in horses is widespread in wild bird populations and professional vaccination is the only method available to protect horses from the disease. *Vaccinations should be administered by a licensed veterinarian to assure that viable vaccine is utilized and injections are properly administered.*

Mistakes in vaccination protocol by well-meaning horse owners can result in ineffective protection in an animal that was thought to be risk free. All too frequently, owner vaccinated horses develop overt cases indicating that the animal was improperly vaccinated or was vaccinated with vaccine that had lost its protective properties. Properly administered vaccinations are effective for only one year, thus, booster shots are required on an annual basis. Newly vaccinated animals require a 2 shot series administered 2-4 weeks apart before protection can be guaranteed. Foals should be revaccinated during summer to ensure protection during the first year of life. It is recommended in the face of a fall epidemic, horses vaccinated in March should have a booster shot later in the season.

What is the best method of protecting my family if my horse develops EEE?

Although viral transmission is not possible from horse to human, a sick horse is an indication that the virus is present in local mosquitoes. There is no human vaccine available for routine usage, thus mosquito avoidance is the best protection in an area where EEE is known to be present. Have your family and employees avoid mosquito-infested areas and use insect repellants when exposure is unavoidable. Eliminating water-holding containers from your property (buckets, tires, and other receptacles) will reduce mosquito breeding in the immediate vicinity. Horse troughs provide excellent mosquito breeding habitat and should be flushed out at least once a week to reduce mosquitoes near the paddock area.

What should I do if my horse develops symptoms?

Suspect horse cases should be reported to your veterinarian as soon as possible. Your veterinarian will diagnose the infection and take blood or tissue samples for confirmation. Euthanasia may be necessary because the disease is fatal in unvaccinated horses. The veterinarian may request permission to obtain a brain sample since brain tissue is the only certain way to confirm the diagnosis. Some horse owners are reluctant to report suspect cases for fear of quarantine. There is no quarantine for EEE. Quick reporting of a suspect case could provide valuable information for protecting the public from EEE.

From Rutgers Cooperative Extension Fact Sheet #FS737

Please contact the Oneida County Health Department at 798-5064 with any questions.