



Town of Concord EEE FAQ's

The threat of Eastern Equine Encephalitis (EEE) is in the news and its presence is increasing throughout Massachusetts. In order to ensure the safety of our community members, the Town of Concord is taking precautionary measures to help citizens avoid unnecessary contact with mosquitoes in public outdoor facilities by canceling recreational activities between dusk to dawn, the time when mosquitoes that carry the EEE virus are biting.

Eastern Equine Encephalitis (EEE) is a rare but serious disease caused by a virus, which is spread by infected mosquitoes. The EEE virus can cause inflammation or swelling of the brain (encephalitis). There have been seven human and nine veterinary reported cases in Massachusetts, one of which is in the neighboring community of Sudbury.

1. Why isn't Concord being aerially sprayed?

The threat or risk of EEE in Concord is currently at "moderate" according to the Massachusetts Department of Public Health (MDPH), which does not warrant aerial spraying. The risk level is determined by results of mosquito surveillance conducted by East Middlesex Mosquito Control Project (EMMCP), who traps and tests for EEE-positive mosquitos. Concord has a contract with EMMCP that conducts surveillance of mosquito populations carrying EEE (and West Nile Virus) as part of its services. Past Board of Health (BOH) and Town Meeting decisions have noted that aerial spraying is not the most effective response to mosquito-borne illness; that implementing personal protection and limiting exposure to mosquitoes from dawn to dusk is more efficient and effective.

The response plan is determined based on the public health Risk Level that MDPH assigns to each town based on current information. Please find below the Town of Concord's responses based on recommendations from these agencies.

- On September 9, MDPH advised the Town that it should cancel evening activities after 6:00 pm. The Town announced all public outdoor facilities would be closed from dusk to dawn until further notice.
- On September 12, EMMCP recommended that Concord conduct localized spraying at public schools and Town playgrounds. The Town, on behalf of the School Department and BOH, will be contracting with EMMCP to perform localized spraying at outdoor public facilities including parks and schools as soon as possible.

The pesticide that EMMCP plans to use is: trade name - Mavrik Perimeter; active ingredient - tau-fluvalinate; EPA# 2724-478.

Can I spray my own property?

Yes, you can ground spray your own property. Residents can hire private contractors to spray their own properties. All pesticide applications should be done by a licensed pesticide applicator in accordance with label directions for that pesticide.

2. **How is the risk level determined?**

The Massachusetts Department of Public Health uses data from arbovirus surveillance to assess human risk levels.

Risk levels are defined for "focal areas". Focal areas frequently, but not always, incorporate multiple communities, towns, or cities. Factors considered in the assessment of human risk and the outlining of a particular focal area include: mosquito habitat, virus isolations in surveillance specimens from previous years, human population densities, type and timing of recent isolations of virus in mosquitoes, occurrence of human case(s) in the current or previous years, current and predicted weather patterns, and seasonality of conditions needed to present risk of human disease.

MDPH has a detailed Arbovirus Surveillance and Response plan for EEE and West Nile Virus (WNV). This plan outlines a tiered public health response based on the results of mosquito surveillance and veterinary and human cases of EEE or WNV. The response plan is available at <https://www.mass.gov/lists/arbovirus-surveillance-plan-and-historical-data>.

There is a science and methodology in the control of mosquitos that begins with trapping and identifying species, evaluating quantities, and testing for diseases, most commonly EEE and West Nile Virus. There are multiple traps set in locations that are determined by an entomologist based on prime mosquito breeding habitats (in this case, mosquitoes that breed in red maple and white cedar swamps). Testing is conducted weekly and continues until the first deep hard frost.

For more in depth information on how EEE spreads to humans, please see [the additional information below](#).

3. **How will the decision to aerial spray or not aerial spray be made?**

If the threat level in Concord reaches high or critical, the Massachusetts Department of Public Health (MDPH) may mandate aerial spraying. As noted above, localized ground spraying will be implemented by the Town in consultation with the MDPH and EMMCP.

4. **I have mosquitos in my yard all day. Why only limit activity from dusk until dawn?**

Several mosquito species that are known to transmit EEE to humans are most actively biting during early evening hours. Other mosquito species that can transmit EEE are active daytime biters, especially in shady areas out of bright sunlight.

At times of high EEE risk, residents are reminded to avoid activity from dusk to dawn, and to wear insect repellants during outside activities, especially when in shady, wooded areas.

5. **How can I protect myself and loved ones?**

The localized ground spraying does not provide total protection and is not a substitute for the best practices everyone should be observing. Personal protection to prevent mosquito bites is critical. There is no vaccine or preventive drug. We encourage the community to take the following precautions:

- a. 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.
- b. Avoid areas with mosquito activity.
- c. Avoid spending time outdoors between dusk and dawn when mosquitoes are most active.
- d. Wear long sleeves and pants when weather permits.
- e. Have secure, intact screens on windows and doors to keep mosquitoes out.
- f. 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 being used.

Please understand that this is a developing situation which will continue to change as risk levels in both Concord and our neighboring communities continue to evolve over time. The Town is in close communications with the Massachusetts Department of Public Health and is monitoring the situation very closely. If you continue to have questions, please send them to srask@concordma.gov or call (978) 318-3275.

Additional information about EEE:

Eastern equine encephalitis virus is native to the Massachusetts environment and is naturally found in some bird species living in and around fresh-water swamp habitats. These habitats also support populations of the primary mosquito vector, *Culiseta melanura*, which feeds predominantly on birds. The swamp habitats, which support large populations of *Cs. melanura* and are the initial source of EEE, are known as enzootic foci. The virus has a cycle of natural infection among bird populations with occasional "incidental" symptomatic infections in susceptible species, including humans.

The appearance of EEE in late June or early July coincides with the hatching of highly susceptible bird populations. The virus is circulated among the bird populations by *Cs. Melanura*. Initially, a relatively smaller proportion of birds and mosquitoes carry the virus; throughout the mosquito season, continuous transmission between mosquito vectors and bird reservoir hosts increases the proportion of infected birds and mosquitoes leading to an overall greater amount of virus present in the environment. This is called the virus amplification cycle. Depending on when virus circulation begins, the size of the *Culiseta* populations, weather conditions, and other factors, this virus amplification cycle may eventually spill over and involve secondary, or "bridge", mosquito vectors that feed on both birds and mammals. In the Northeast, these bridge vectors are mosquito species, such as *Coquillettidia perturbans*, *Ochlerotatus* (formerly *Aedes*) *canadensis*, and *Aedes vexans*. These bridge vectors are presumed to be responsible for the transfer of EEE to incidental hosts, including mammals such as humans, and horses.

Human cases are more likely when multiple factors indicate that risk is increasing in a given place at a given time. Identification of EEE in the enzootic mosquito vector, *Cs melanura*, is useful for determining areas of virus amplification and as a proxy measure of the amount of EEE virus in the environment.