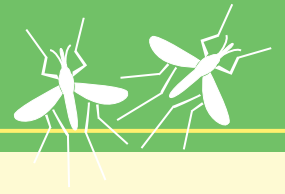




# Mosquito-borne Disease in Florida



## What is an arbovirus?

Arboviruses are viruses spread to people by insect or tick bites. In Florida, we find West Nile virus (WNV), Eastern Equine Encephalitis virus (EEEV), and St. Louis Encephalitis virus (SLEV). These viruses are spread by mosquitoes and can cause serious illnesses in people.

## Are arboviral illnesses common in Florida?

Over the years, SLEV had been the most common cause of arboviral disease in Florida until the arrival of WNV in 2001. West Nile virus infection is now the most common human arboviral disease acquired in the state. More than 200 people have gotten seriously ill during outbreaks of WNV and SLEV disease. Such outbreaks do not occur every year. Usually, no more than five people a year are found with EEEV disease in Florida.

## How do people become infected with arboviruses?

An infected mosquito spreads viruses through its bite. The virus mainly passes back and forth between birds and mosquitoes. Sometimes an infected mosquito will bite a person or a horse instead of a bird. People cannot catch an arbovirus from casual contact with an infected person.

## What are the symptoms of arboviral illness?

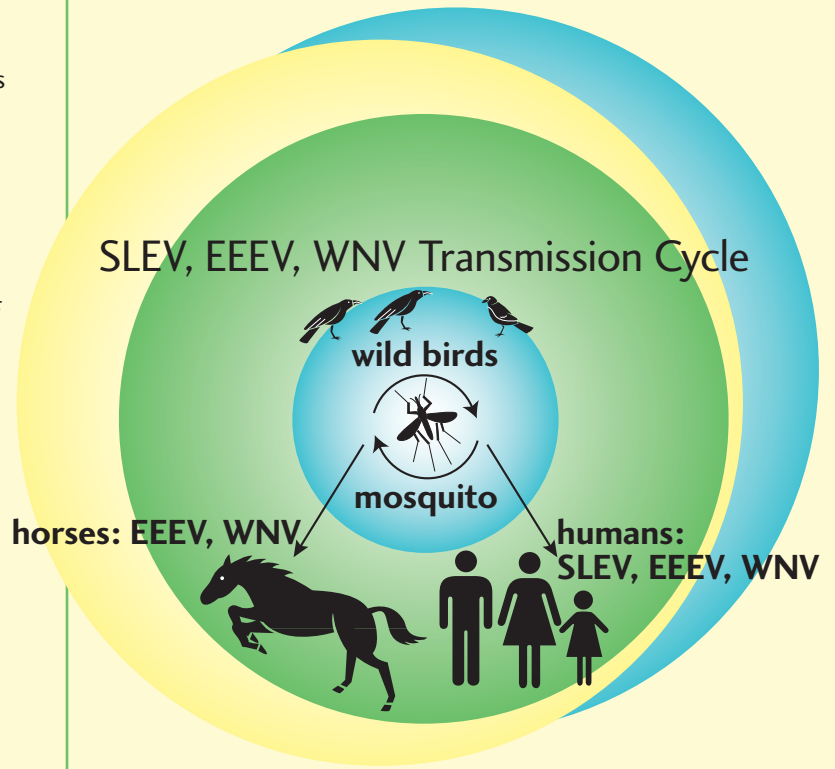
Most people infected with an arbovirus do not even get sick. For the small number who do become ill, it can take two to 14 days after the bite of an infected mosquito before they become sick. Symptoms may include fever, headache, tiredness, dizziness, and confusion. WNV may also cause a rash or muscle weakness. People 50 years old and older are more likely to have brain swelling from SLEV or WNV infections but this can occur in younger people too. Anyone infected with EEEV may also develop brain swelling, but children develop illness most commonly. Severe infections with any of the arboviruses can be fatal. A person who thinks they may have an arbovirus infection should see a doctor as soon as possible. The doctor may order laboratory testing to see if an arbovirus caused the illness. Although there is no cure for arboviruses, there is treatment for some of the symptoms.

## What do we do to limit the spread of mosquito-borne illness?

Animals and mosquitoes are watched closely for signs of arbovirus. Chicken flocks called sentinel chickens are kept in many counties. Blood from the chickens is tested to look for signs of arboviruses. If arbovirus activity is increased and mosquitoes are biting, mosquito control efforts will generally increase. Press releases and public education will remind people to protect themselves from mosquito bites.

## What about other animals?

Horses can also become ill from EEEV and WNV. Sick horses are sometimes the first sign that an arbovirus is in an area. Dead birds are another clue that WNV may be circulating. Please report dead birds at [www.myfwc.com/bird/](http://www.myfwc.com/bird/), or contact your county health department or local Florida Fish and Wildlife Conservation Commission (FWC) office. Avoid handling sick or dead animals with bare hands.



## What can I do to protect my family and myself from mosquito-borne disease?

The best way to reduce the risk of getting ill is to avoid getting mosquito bites by practicing the 'Drain and Cover' prevention message below.

### DRAIN and COVER

- DRAIN standing water to stop mosquitoes from multiplying**
- Drain water from garbage cans, house gutters, buckets, pool covers, coolers, toys, flower pots or any other containers where sprinkler or rain water has collected.
  - Discard old tires, drums, bottles, cans, pots and pans, broken appliances and other items that aren't being used.
  - Empty and clean birdbaths and pet's water bowls at least once or twice a week.
  - Protect boats and vehicles from rain with tarps that don't accumulate water.
  - Maintain swimming pools and keep appropriately chlorinated. Empty plastic swimming pools when not in use.
- COVER skin with clothing or repellent**
- **CLOTHING** Wear shoes, socks, and long pants and long-sleeves. This type of protection may be necessary for people who must work in areas where mosquitoes are present.
  - **REPELLENT** Apply mosquito repellent to bare skin and clothing.
  - Always use repellents according to the label. Repellents with DEET, picaridin, oil of lemon eucalyptus, and IR3535 are effective.
  - Use mosquito netting to protect children younger than 2 months old.
- COVER doors and windows with screens to keep mosquitoes out of your house**
- Repair broken screening on windows, doors, porches, and patios.

To report pesticide-related illness or injury, call 1-800-606-5810.

Florida Department of Health, Division of Disease Control and Health Protection, Bureau of Epidemiology

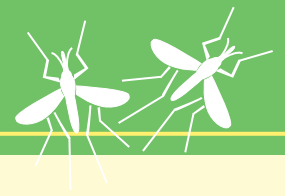
For more information, visit our website at <http://www.floridahealth.gov/diseases-and-conditions/mosquito-borne-diseases/index.html>

You may also call 850-245-4401 during office hours.





# Mosquito Proofing Your Home



The best way to prevent mosquito-borne disease is to avoid mosquito bites. By following the mosquito hygiene checklist and the 'Drain and Cover' prevention, you can help protect yourself and your family from mosquito-borne disease.

## Rid the wrigglers—lose the larvae

Mosquitoes lay their eggs where there is moisture. It takes only a few days for an egg to grow into an adult mosquito, which can live for several weeks. During that time, an adult female mosquito can lay many eggs. In order to produce eggs, the adult female seeks a host (such as a bird, a horse, or a human) to provide a blood meal. Some species of adult mosquitoes can fly two miles from their breeding sites (even further if blown by the wind). Elimination of mosquito breeding sites is one of the keys to prevention.

- Remove standing water in old tires, buckets, garbage cans or any other containers.
- Clean out gutters. Check flat roofs that may have poor drainage.
- Cover barrels and trash containers tightly with a lid or with a fine mesh screening material.
- Empty plastic wading pools at least once a week. Store them indoors when not in use.
- Change the water in bird baths and pets' water bowls at least once a week.
- Empty the water in plant pots at least once a week.
- Turn over or remove empty plastic pots.
- Remove old tires or drill holes in those used in playgrounds to drain.
- Level the ground around your home so water can run off.
- Fill in holes or depressions near your home that collect water.
- Pick up all beverage containers and cups.
- Store boats covered or upside down.
- Check tarps on boats or other equipment that may collect water.
- Pump out bilges on boats.
- Treat standing water with products that kill mosquito larvae. These are available at home improvement stores and garden centers.
- Fill in tree holes and hollow stumps that hold water.
- Stock your water garden with mosquito-eating fish like minnows, gambusia, goldfish or guppies.
- Remove vegetation or blockages in drainage ditches so that water can flow through.
- Repair screening on windows, doors, porches and patios.

## A word about "Zappers"

Some gadgets intended to work as mosquito control methods do not do a very good job. For example, "bug zappers" do not work well to control biting mosquitoes. They may actually attract more mosquitoes into your yard, and they kill beneficial insects as well. Various birds and bats will eat mosquitoes, but there is little evidence that this cuts down on the number of mosquitoes around homes. Electronic mosquito devices don't stop mosquitoes from biting people either.

## Repellent information

- Always read label directions carefully for the approved usage before applying a repellent to skin. Some repellents are not suitable for children.
- Products with concentrations of up to 30 percent DEET are generally recommended. Other EPA-approved repellents contain picaridin, oil of lemon eucalyptus, or IR3535. These products are generally available at local pharmacies. Look for active ingredients to be listed on the product label.
- Apply insect repellent to exposed skin or onto clothing, but not under clothing.
- In protecting children, read label instructions and be sure the repellent is age-appropriate. According to the CDC, mosquito repellents containing oil of lemon eucalyptus should not be used on children under the age of 3 years. DEET is not recommended on children younger than 2 months old.
- Infants should be kept indoors or mosquito netting should be used over carriers when mosquitoes are present.
- If additional protection is necessary, apply a permethrin repellent directly to your clothing (but not your skin). Again, always follow the manufacturer's directions.

For more information, see the CDC's guidelines:

[http://www.cdc.gov/ncidod/dvbid/westnile/qa/insect\\_repellent.htm](http://www.cdc.gov/ncidod/dvbid/westnile/qa/insect_repellent.htm) or  
EPA guidelines: <http://cfpub.epa.gov/oppref/insect/>

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