

What you need to know to protect yourself

What is an arbovirus?

The term “arbovirus” is derived from the phrase “arthropod-borne.” Mosquitoes and ticks are examples of arthropods. When they feed on a bird or mammal, they may pick up a virus along with the blood meal. Examples of these viruses that can be found in Arkansas include West Nile Virus, St. Louis Encephalitis, and Eastern Equine Encephalitis.

How do you get the virus?

These viruses are transmitted to humans through the bite of an infected mosquito or tick. Most birds and small mammals usually do not get sick; rather, they maintain and “store” the virus. Although these viruses are maintained in bird and small mammal populations all year round, human disease tends to be seasonal, occurring during times of mosquito activity. Infected mammals or birds cannot directly transfer arboviral disease to people; it can only be transmitted when an infected mosquito takes a blood meal. Not all mosquitoes have a virus in them, but certainly, the more mosquito bites you get, the greater your risk of catching a disease.

What are the symptoms of arboviral encephalitis?

Symptoms of human arboviral infections typically begin within 14 days following the insect bite and consist of fever, headache, rash, muscle and joint aches, listlessness, possibly encephalitis (swelling of the brain, the most dangerous symptom) and, sometimes death. The good thing is that most people that get bitten by an infected mosquito **do not** get sick. There is no specific treatment for arboviral infections. Avoiding mosquitoes is the best prevention.

MOSQUITO BIOLOGY

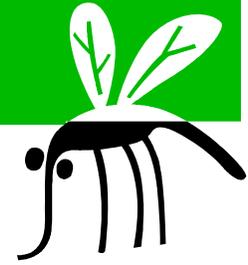
Mosquitoes are carriers (or vectors) of many diseases around the world. Malaria, yellow fever, dengue fever, and viral encephalitis are some of the most common. Malaria and yellow fever was once found throughout the southern United States but have been stopped in this country as a result of mosquito control, medical treatment, and improved living conditions. Mosquitoes are insects that are in the same order as houseflies and all true flies. There are four stages of growth in the mosquito life cycle - egg, larva, pupa, and adult. The eggs of some types of mosquitoes are laid on water and hatch in one or two days. Eggs of other types of mosquitoes are laid in places that are dry but will fill with water. These eggs may survive years before hatching. Larvae hatch from the eggs and live, feed, and grow in the water. Fully grown larvae change into the pupae. During the pupal stage, feeding stops and changes occur that lead to the adult stage. Adults emerge from the pupae, leave the water and take to the air. The cycle from egg to adult mosquito may take as little as a week. Soon after becoming adults, male and female mosquitoes mate. Only the female mosquito takes a blood meal - this is required to produce her eggs. Each type of mosquito may prefer blood from a different kind of animal - birds, frogs, deer, and humans. There are more than 55 types of mosquitoes in Arkansas. Many of these are not a problem because they do not attack humans. Adult mosquitoes may live about 2 -3 weeks, or they can over winter. A female may lay up to 12 batches (each batch consisting of hundreds of eggs).

MOSQUITO CONTROL

Mosquitoes breed in any body of water, from small containers such as tin cans to large bodies of water like lakes or marshes. All these breeding places create a variety of mosquito problems. Controlling mosquitoes after they have become adults requires the spraying of insecticides repeatedly over large areas. The best way to prevent mosquito problems before they get started is to perform larval control. They may include: eliminating breeding sites, or using biological controls such as bacteria that kill the mosquito larvae or introducing predators such as fish.

Removing breeding sites

- Dispose of tin cans, plastic containers, ceramic pots or similar water-holding containers.
- Remove all discarded tires on your property. Used tires have become the most common mosquito-breeding site in the country.
- Drill holes in the bottoms of recycling containers that are kept outdoors.



- Make sure roof gutters drain properly, and clean clogged gutters in the spring and fall.
- Turn over plastic wading pools and wheelbarrows when not in use.
- Change the water in bird baths.
- Clean vegetation and debris from the edges of ponds.
- Clean and chlorinate swimming pools, outdoor saunas and hot tubs.
- Drain water from pool covers.
- Use landscaping to eliminate stagnant water that collects on your property.

PERSONAL PROTECTION

- _ Make sure all windows and doors have screens, which are in good repair
- _ Stay indoors when mosquitoes are more active
- _ Wear protective clothing outdoors when mosquitoes are more active
- _ Use mosquito repellent containing 20 to 30% DEET, or picaridin, or oil of eucalyptus when it is necessary to be outdoors

Types of arboviral encephalitis

Eastern Equine Encephalitis

Humans, horses, pheasants, and emus are all very susceptible to EEE. Only a few human cases of EEE have ever been reported in Arkansas. Infected children are the most likely to have severe illness or die. EEE is considered the most severe arboviral encephalitis; the fatality rate can approach 70% in susceptible people. Those individuals who do recover frequently have permanent, disabling side effects. In recent years, Arkansans have seen sporadic outbreaks in horses and emus. Horses that are infected with EEE will show symptoms such as walking in circles, unbalanced, head drooping and convulsion. Emus that are infected with EEE will have bloody diarrhea. There is no vaccine for routine use in humans but one is available for horses and emus and can prevent EEE if vaccinated regularly.

St. Louis Encephalitis

SLE does not cause disease in animals; it is strictly a human disease. Large outbreaks of SLE have sporadically occurred throughout the U.S. The symptoms are typically milder, with most people experiencing flu like symptoms. Those that are primarily affected are the elderly. Arkansas experiences sporadic cases of SLE, most going unreported. The largest outbreak in recent years was in 1991 when it hit Pine Bluff resulting in 28 hospitalized with five deaths all over the age of 60.

West Nile Virus

WNV was first recognized in the Western Hemisphere in the summer of 1999, when an outbreak occurred in the New York City (NYC) area, infecting 62 people and causing seven deaths. Many different bird species (especially American crows) and mammals, including 25 horses in NY, also became infected. Many of the infected animals died. In 2000, the virus spread geographically; 12 states and the District of Columbia reported positive findings. In September 2001, four blue jays found dead in three Arkansas counties (Union, Saline, and Sebastian) were diagnosed with the virus. Prior to the NYC outbreak, this virus had primarily been reported in South Africa, Middle East, and southwestern Asia. WNV is like SLE in that most infected people show no symptoms. Symptoms include: headache, fever, rash, stiff neck, muscle and joint pain nausea, vomiting, diarrhea and neurological disease or encephalitis. Elderly individuals (> 50 years of age) may be at greater risk of developing severe illness and encephalitis. No vaccine is currently available for humans, but one has become available for horses. Symptoms in horses are similar to symptoms found in horses infected with EEE.

NEED MORE INFORMATION?

Contact your local health unit or the Division of Epidemiology at the Arkansas Department of Health at (501) 661- 2893 or 800-554-5738.