

## WHAT IS WEST NILE VIRUS?

West Nile (WN) virus is a mosquito-borne virus that has been found in parts of Asia, eastern Europe, Africa, and the Middle East. The virus was first detected in the United States (U.S.) in 1999 in New York City.

The majority of people and animals that are infected with the virus have a mild illness or no symptoms. In rare cases, the virus can cause a more serious condition called encephalitis, an inflammation of the brain. The elderly are at a higher risk for disease caused by WN virus. At the end of 2002 a total of 39 states had reported WN virus activity involving 3,955 cases. The virus is expected to move into the remainder of the US in 2003.

## HOW DO PEOPLE AND ANIMALS GET WEST NILE VIRUS?

WN virus is transmitted to people and animals by infected mosquitoes. Only certain species of mosquitoes are actually infected. A mosquito first acquires the infection by feeding on a bird with the virus in its blood. The virus lives in the mosquito and is transmitted to a new host in the mosquito's saliva when the insect bites a person or animal.

Humans and horses are accidental hosts for WN Virus. Human-to-human transmission does not occur. The virus is most prevalent from May to October when mosquitoes are most abundant.



## WHICH ANIMALS GET WEST NILE VIRUS?

An infected mosquito can bite any animal, but not all animals will become infected. The disease most often affects birds, but occasionally causes disease in other animals as well.

### *Birds*

Wild birds are the animals from which the mosquito vector primarily acquires the virus. Infection has been reported in more than 70 bird species. Although many birds that are infected with WN virus will not appear ill, WN virus infection can cause serious illness and death in some birds. The most severe illness are seen among the corvid birds, which include crows, jays, ravens, and magpies. American crows constitute the majority of birds reported dead due to WN virus.



### *Horses*

Horses are also susceptible to WN virus. The disease does not seem to be specific to a particular breed or age of horse. Clinical signs of disease consist of central nervous system abnormalities similar to those caused by infection with eastern equine encephalitis (EEE) and western equine encephalitis (WEE). EEE and WEE vaccines are available for horses and are recommended for use in the spring. An equine WN virus vaccine recently became available for horses. For more information, see [http://www.cdfa.ca.gov/ahfss/ah/wnv\\_info.htm](http://www.cdfa.ca.gov/ahfss/ah/wnv_info.htm).



## MOSQUITO CONTROL

Even if you live in an area where West Nile Virus has been reported, and you are bitten by mosquitoes, the chances you will become ill from any one mosquito bite is extremely small. Even if the mosquito is infected, less than 1% of the people who become infected will get severely ill. But to further reduce the odds of getting infected, it is suggested the following steps be taken to eliminate the number of mosquitoes in your area.

- ⇒ Avoid outside activity at dawn and dusk during the mosquito season (May to October). This is particularly important for the elderly and small children.
- ⇒ Wear protective clothing (long pants and long sleeves) and apply insect repellent when outside.
- ⇒ If you choose to use repellent, pick one that contains the chemical DEET. This product has been in general use for more than 40 years and is still considered the single most effective product, according to mosquito researchers. Avoid breathing repellent spray.
- ⇒ Make sure that doors and windows have tight fitting screens. Repair or replace screens that have tears or holes in them.
- ⇒ Woodland pools and small bodies of water can produce an enormous number of mosquitoes. In addition to the use of mosquito fish, most nurseries carry a biological control product to put in these small lakes and ponds. This microbial pesticide *Bacillus thuringiensis israelensis*, B.t.i. for short, releases a natural chemical that kills feeding mosquito larvae.

## MOSQUITO CONTROL (continued)

- ⇒ Stop mosquitoes before they take wing. Mosquitoes breed in standing water and a typical backyard can generate thousands of mosquitoes a week. Since several species of mosquitoes prefer to bite close to their breeding sites, getting rid of “skeeter nurseries” on your property can help. Elimination of all standing water is the key to preventing mosquitoes from breeding around the home. Even the smallest amount of water can be the source of a large number of mosquitoes. Make sure gutters, pipes, and other water sources drain away from your house. Drain away water that collects in pools and spa covers, flower pots or barrels. Even water containers for pets should be changed daily.
- ⇒ For permanent water basins such as bird baths, ornamental ponds and fountains, consider stocking them with mosquito fish (scientific name *Gambusia affinis*) that feed on mosquito larvae. Your County Agricultural Commissioner can help with sources of these fish. The common guppy, available at pet stores, is another skeeter eater, though it's a bit more fragile for outdoor life.
- ⇒ Be careful not to over-water or over-irrigate lawns and gardens. Saturated lawns and gardens can become virtual mosquito factories.

## FOR MORE INFORMATION

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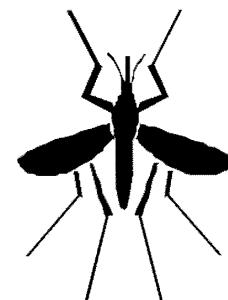
Department of Health Services  
Vector-Borne Disease Section  
2135 Akard Avenue, Room 13  
Redding, CA 96001  
(530) 225-2071

Department of Pesticide Regulation  
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## MOSQUITO CONTROL TO LIMIT EXPOSURE TO WEST NILE VIRUS



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