

## ANSWERS TO COMMON QUESTIONS

**Q. How do people get the West Nile virus?**

**A.** After being bitten by a mosquito that is infected with West Nile virus.

**Q. Can you get the West Nile virus from a person?**

**A.** No. West Nile Virus can only be contracted through the bite of an infected mosquito.

**Q. Can you get West Nile virus from birds?**

**A.** There is no evidence that a person can get the virus from handling live or dead infected birds. West Nile Virus can only be contracted through the bite of an infected mosquito.

**Q. What happens if you're infected with the West Nile virus?**

**A.** Most infected people show no symptoms or have mild symptoms of disease. Mild symptoms include fever, headache, and body aches, often with skin rash and swollen lymph glands. More severe cases can be marked by headache, high fever, stiff neck, disorientation, coma, tremors, paralysis and, death.

**Q. How fatal is this disease?**

**A.** Approximately 10% of the *symptomatic* cases result in death. Fatalities are more likely in people over the age of 50.

**Q. What is the treatment?**

**A.** There is no known cure for West Nile fever. However, the symptoms can be lessened through proper medical attention.

**Q. How common is West Nile virus?**

**A.** In 1999, there were 62 confirmed cases of West Nile fever in the U.S. (all in the New York City area). These were the first recorded cases of this infection in North America. It is not known how common WNV is or will become in the U.S.; however, in Europe WNV has caused sporadic human cases or outbreaks, occurring at irregular intervals.

## PERSONAL PRECAUTIONS

To reduce the annoyance of mosquito bites and prevent transmission of mosquito-borne infections, a few common sense measures should be followed. These include:

- Avoid shaded areas where mosquitoes may be resting
- Limit evening outdoor activity when mosquitoes are most active
- Wear protective clothing such as long-sleeved shirts and pants
- Use insect repellents. Repellents that contain 20-30% DEET can be very effective in preventing insect bites. Use repellents only as directed; using more DEET than necessary will not improve protection but may increase the likelihood of adverse reactions. Do not use repellents on infants. Caution children to avoid getting repellents in their eyes. As with all products, the user should follow the manufacturer's usage recommendations.

Finally, mosquito populations can be reduced on your property and in your neighborhood by eliminating standing water that collects in unused birdbaths, boats, buckets, tires, unused pools, roof gutters and other containers.

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*For additional information regarding the public health aspects of WNV, please contact your personal physician or local health department.*

*For more information regarding mosquitoes, their biology or their control contact:*

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# WEST NILE VIRUS



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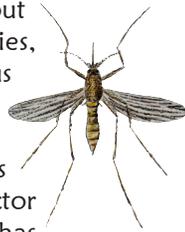
## WHAT IS WEST NILE VIRUS?

West Nile virus (WNV) is a mosquito-borne virus and is closely related to St. Louis encephalitis (SLE) virus. SLE virus is most prevalent in the southeastern and mid-western United States. However, WNV is typically found in Africa, Europe, and Asia (primarily in countries bordering the Mediterranean Basin). Infection with this virus does not always result in clinical disease. Studies have shown that normally only a small percentage of humans infected with the virus will show symptoms of disease. The general symptoms of West Nile fever, resulting from infection with WNV, range from fever, rash, and headache to meningitis, encephalitis, coma, and death.

## VECTORS OF WNV

WNV is transmitted primarily through the bite of an infected mosquito. It has been isolated from at least 43 species of mosquitoes throughout the world. In most countries, mosquitoes belonging to the genus *Culex* are the primary vectors. In the United States, the common house mosquito (*Culex pipiens*) is considered to be the principal vector species. In addition, WNV has occasionally been reported from ticks, most notably bird-feeding ticks (*Ornithodoros* and *Argas spp.*).

*Culex pipiens* is the principle mosquito species found in urban and suburban environments. The larvae are commonly found in polluted water collecting in roadside ditches, catch basins, artificial containers such as tires, and in swimming pools that are in a state of disuse. Although *Culex pipiens* prefer avian hosts for a bloodmeal, these mosquitoes will readily bite humans and other mammals.



## WNV TRANSMISSION CYCLE

WNV infections are characterized by a bird-mosquito cycle. In Europe, transmission of WNV has two basic cycles: a rural cycle, and an urban cycle. Viral circulation most frequently begins in a rural cycle, being passed between birds (primarily wetland bird species) and bird-feeding mosquitoes. On occasion it enters an urban cycle, in which domestic or passerine birds and mosquitoes that prefer to feed on both birds and humans circulate the virus. This European transmission cycle is similar to that of St. Louis encephalitis virus in the United States. Therefore, WNV in the United States is thought to have a similar mode of transmission.

## VERTEBRATE HOSTS

Wild birds are the principal hosts of WNV. WNV has been isolated from a variety of avian species, including crows, ducks and pigeons. Birds are able to maintain a long-term infection. Consequently, migratory birds are considered to be instrumental in transporting the virus to new areas. Mammals are less important in maintaining WNV infections. However, WNV has been isolated from several mammalian species. These species include cattle, horses, dogs, and lemurs. Of these animals, only lemurs have been shown to be capable of passing WNV to uninfected mosquitoes during the blood-meal. Finally, certain species of frogs have been shown to maintain the virus and to be able to pass the virus to feeding mosquitoes.

## WNV IN HUMANS

When people become infected with WNV, they are quite often asymptomatic, showing no signs of illness or disease. However, in some individuals an influenza-like illness often follows. In humans, the virus has an incubation period of 3 to 10 days. Therefore, symptoms may appear suddenly and are often characterized by high fever, headache, backache, fatigue, and nausea. There is no known treatment for

persons infected with WNV nor is there a vaccine. Most people recover from infection completely within two weeks. However, approximately 10% of the clinical cases are fatal. Fatal cases are more prevalent in people greater than 50 years of age. When infected, humans are unable to pass the infection to uninfected mosquitoes or other humans.

## WNV IN BIRDS

Birds do not normally show any symptoms of WNV infection. Rather they serve as natural reservoirs of the virus and are able to pass the virus to feeding mosquitoes. However, some avian species appear to be susceptible to the virus, displaying varying degrees of infection. Chickens, crows, ducks, gulls, and pigeons have been reported to show signs of illness ranging from encephalitis to death.

## WNV IN HORSES

Horses infected with WNV have been reported as having encephalitis with a moderate to high fatality rate in Europe and North Africa. Symptoms may include fever, staggering gait, weakness, and paralysis. Horses have been shown to occasionally have high levels of virus circulating in their blood (viremia). However, research currently indicates that it is doubtful they play a significant role in passing this infection to feeding mosquitoes.

## WNV IN OTHER MAMMALS

Several other mammal species are known to show symptoms of disease due to WNV infection. Sheep, hamsters, mice, and some species of monkeys display a variety of symptoms ranging from mild illness to death. However, other mammals (such as pigs, rabbits, and dogs) appear resistant to infection and show no signs of illness or disease.

