

### **What is West Nile virus?**

West Nile virus is a mosquito-borne virus that is commonly found in Africa, West Asia, and the Middle East. It is closely related to St. Louis encephalitis virus found in the United States. While the virus mainly infects mosquitoes and birds, mosquitoes can transmit the virus to people and other animals. The virus was first identified in the West Nile district of Uganda in 1937. It was first reported in the United States in 1999, when 62 cases and 7 deaths in humans from West Nile virus infection were reported in the New York City area.

### **Should the West Nile virus be a concern for people in Iowa?**

Yes. Since 1999, when the virus was only identified in New York City, West Nile has spread across the continental United States establishing itself as far west as California. The virus was identified in a dead crow in the eastern part of Iowa in September 2001. At the end of 2002, 40 states had reported human cases of West Nile infection, with Iowa having verified 54 West Nile cases including two deaths. Other monitoring activities in Iowa identified West Nile positive birds, chickens, horses, and mosquitoes in 2002. During 2003, Iowa experienced an increase in humans infected with West Nile virus, with 147 confirmed cases, including 6 deaths. The number of Iowans infected in 2004, dropped to 23 confirmed cases, including two deaths.

### **How is West Nile virus spread?**

Mosquitoes can get the West Nile virus when feeding on infected birds. Mosquitoes can then spread the virus to people through a bite. West Nile virus cannot be spread by person-to-person contact such as kissing, touching, or caring for an infected person. West Nile virus can also rarely be transmitted to humans who receive infected organs by transplantation or who receive transfusions of infected blood or blood products. Today testing of donated blood has reduced the risk of getting WNV from blood transfusions.

### **Is a person that is bitten by a mosquito in an area known to have West Nile virus likely to get infected?**

No. The chance of getting infected with the virus is low. Even in areas where the virus is circulating, very few mosquitoes are infected with the virus and not all mosquitoes can successfully transmit the virus. Most people who become infected with West Nile virus following a mosquito bite do not develop any symptoms.

### **What are the symptoms of West Nile virus?**

Most people who are infected with West Nile virus either have no symptoms or experience mild illness such as fever, headache, and body aches before fully recovering. Some persons may develop a skin rash and swollen lymph glands. In <1% of infections, particularly in the elderly, West Nile virus can cause serious disease, such as encephalitis (inflammation of the brain) or meningitis (inflammation of the lining of the brain and spinal cord). These conditions may result in permanent brain damage, or on rare occasions, can be fatal. Symptoms of severe disease can include severe headache, high fever, stiff neck, confusion, loss of consciousness, tremors, muscle weakness, and paralysis.

### **How is an infection with West Nile virus diagnosed and treated?**

A healthcare provider can diagnose West Nile virus through special tests. There is no vaccine or specific treatment, though a physician may prescribe medications to reduce symptoms. In severe cases, hospitalization may be required. Persons who have been exposed (i.e. bit by a mosquito), but have not developed symptoms do not need to be tested. Your healthcare provider should be contacted if you develop severe symptoms.

### **How can an infection with West Nile virus be prevented?**

Protect yourself from mosquito bites and eliminate mosquito-breeding sites:

- Limit outdoor activities during prime mosquito hours of dawn and dusk.
- Wear light colored, long-sleeved shirts and long pants whenever you are outdoors for long periods of time or when mosquitoes are most active.
- Use insect repellents containing DEET or permethrin. Updated guidance in 2005 includes repellents containing picaridin and oil of lemon eucalyptus to be effective against mosquitoes. Permethrin repellents should be applied to clothing only and should not be used on the skin.
- Products containing up to 30% DEET have been shown to be the most effective and are safe for adults, including pregnant women and children over 2 months of age. DEET should be applied sparingly only to exposed skin and should not be used underneath clothing. Although no definitive studies exist in scientific literature about what concentration of DEET is safe for children, the American Academy of Pediatrics

recommends using formulations containing no more than 30% DEET on infants older than 2 months of age and children. The safest approach for infants and children under 2 years is to minimize exposure to mosquitoes, use insect repellents that have a DEET concentration of 10% or less, and properly follow the manufacturer's label directions for application. Repellents containing oil of lemon eucalyptus should not be used in children under the age of three.

- Make sure doors and windows have tight fitting screens. Repair or replace screens that have holes or tears.
- Eliminating mosquito-breeding sites (they breed by laying eggs in standing water) by removing sources of standing water in outdoor areas where you work or play. Specific activities include the following:
  - Turning over or removing items where rainwater can collect, such as ceramic pots, toys, buckets, tires, wading pools, and tarps covering firewood and boats;
  - Changing water in birdbaths and pet bowls every 3-4 days;
  - Making sure roof gutters are clean and in good repair;
  - Repairing leaky outdoor faucets, air conditioners, and hoses; and
  - Stocking ornamental ponds with mosquito dunks or fish that eat mosquito larvae.

### **Is donating blood or getting blood transfusions or organ transplants safe?**

Donating blood is safe and individuals are still encouraged to donate. However, those individuals who present with symptoms of West Nile, or who are experiencing any kind of illness, will not be allowed to donate blood. Blood centers are taking precautions to be sure that donors who have been diagnosed with West Nile have fully recovered before being allowed to donate. All blood banks are using screening of West Nile virus and will dispose of positive blood. Persons who develop symptoms of West Nile virus infection within four weeks of receiving a blood transfusion or organ transplantation or whose symptoms begin in the weeks following the blood or organ donation are advised to contact their physician. More information on blood donations and testing can be obtained from the Food and Drug Administration (<http://www.fda.gov/cber/safety/westnile.htm>).

### **Can West Nile virus be spread by breastfeeding?**

There has been one possible case of West Nile virus that was transmitted to a newborn through breast milk. Because the health benefits of breast-feeding are well established, and the risk for West Nile virus transmission through breast-feeding is unknown, women are still encouraged to breast feed. As always, lactating women who are ill or who are having difficulty breast-feeding for any reason should contact their healthcare provider.

### **Can a West Nile infected pregnant woman infect her unborn child?**

There have been reports of mother-to-fetus transmission of West Nile virus in humans. Pregnant women should take precautions to reduce their risk for West Nile virus and other arboviral infections by avoiding mosquitoes, wearing protective clothing and using repellents containing DEET. It is not recommended that pregnant women or newborns be screened for West Nile.

### **What should I do if I find a dead bird?**

Finding a dead bird near your home does not necessarily put you at increased risk for West Nile virus. West Nile virus infection is not likely to be transmitted by direct contact with dead birds. Dead birds, however, can carry a variety of diseases, and should never be handled with bare hands. Use gloves to carefully place dead birds in double-plastic bags and then place in the outdoor trash or bury.

### **Can animals be infected with West Nile virus?**

Animals become infected the same way that humans become infected – through the bite of an infected mosquito. Horses can experience severe and fatal disease like humans, and cats and dogs can also become infected, but rarely develop disease. Animals infected with West Nile virus do not spread the disease to humans. Contact your veterinarian to arrange for vaccination of your horses or if you suspect your pet or animal might have been infected with West Nile virus.

### **Where can additional information regarding WNV be found?**

- Iowa Department of Public Health at <http://www.idph.state.ia.us> and 866-WNV-IOWA (866-968-4692)
- University Hygienic Laboratory (UHL) <http://www.uhl.uiowa.edu>
- Centers for Disease Control and Prevention <http://www.cdc.gov/>
- Iowa State University's Department of Entomology <http://www.ent.iastate.edu/medent>