West Nile Virus Facts and Insect Bite Prevention – Quick Tips



West Nile Virus first made headlines in the United States after the first case was identified in New York City, nearly two decades ago. And while it was new to this country at the time, West Nile Virus had been on the radar of healthcare officials for years. According to the World Health Organization (WHO), West Nile Virus was first identified in 1937 in the West Nile District of Uganda, and the first appearance in North America was in 1999.

How is West Nile Virus Spread?

Infected mosquitoes spread West Nile Virus. Mosquitoes most commonly pick up the disease from infected birds and go on to infect other animals while feeding on their blood. In a mosquito, the virus is found in the salivary glands which mosquitoes use to anesthetize the skin of the animal on which they are feeding.

West Nile Virus in Humans

According to the Centers for Disease Control and Prevention (CDC), anyone can get infected with West Nile Virus, although some people are at higher risk for infection of the brain or spinal cord. For example, people over the age of 50 are at higher risk for experiencing encephalitis (swelling of the brain) as a result of West Nile Virus exposure.

In terms of the symptoms of West Nile Virus, the CDC says most people (70-80%) who become infected with West Nile Virus do not have any symptoms. About one in five people who are infected will develop a fever with other symptoms such as headache, body aches, joint pains, vomiting, diarrhea, or rash. Most people with this type of West Nile Virus recover completely, but feeling tired and weak can last for weeks or months, according to the CDC.

While the vast majority of those infected with West Nile will have minor symptoms or no symptoms at all, for the unfortunate few it can have serious health consequences. The CDC says that less than 1% of people who are infected will develop a serious neurologic illness such as encephalitis or meningitis (inflammation of the lining of the brain and spinal cord). The symptoms of neurologic illness can include headache, high fever, neck stiffness, disorientation, coma, tremors, seizures, or paralysis. The CDC also reports that

since West Nile Virus was first identified in the U.S. in 1999, more than 1,900 (as of spring 2017) people have died from complications caused by West Nile Virus.

Prevention

Presently, there's no West Nile Virus vaccine. According to the CDC, the best way to prevent diseases spread by mosquitoes is to protect yourself and your family from mosquito bites. They recommend the following:

- Wear long-sleeved shirts and long pants.
- Stay in places with air conditioning and window and door screens to keep mosquitoes outside.
- Treat your clothing and gear with permethrin or buy pre-treated items.
- Use Environmental Protection Agency (EPA)-registered insect repellents and always follow the product label instructions.
    - When used as directed, these insect repellents are proven safe and effective even for pregnant and breastfeeding women.
- Sleep under a mosquito bed net if air conditioned or screened rooms are not available or if sleeping outdoors.

Specifically addressing the EPA registered mosquito repellants, the CDC says that those containing DEET, picaridin, IR3535, and some oil of lemon eucalyptus and para-menthane-diol products provide longer-lasting protection. The EPA registration number means that the insect repellent manufacturer has provided the EPA with technical information on the safety of the product and its effectiveness against mosquitoes. The EPA does not expect the product to cause adverse effects to human health or the environment when used according to the label.

When considering using repellants around children, the CDC offers the following directions:

- Do not use insect repellent on babies younger than two months old.
- Do not use products containing oil of lemon eucalyptus or para-menthane-diol on children younger than three years old.
- Dress your child in clothing that covers their arms and legs.
- Cover cribs, strollers and baby carriers with mosquito netting.
- Do not apply insect repellent onto a child's hands, eyes, mouth, and cut or irritated skin.
- Adults: Spray insect repellent onto your hands and then apply to a child's face.

Mosquito Control

In its' *West Nile Virus in the United States: Guidelines for Surveillance, Prevention, and Control* resource, the CDC says an effective mosquito control program must address both adult mosquitos and mosquito larva. The use of pesticides is an important tool in a comprehensive mosquito control program. And the EPA offers guidance and direction for pesticide use to combat both adult and larval mosquito control.

Source control is another piece of a comprehensive mosquito control plan. Mosquitos need access to water to reproduce so eliminating standing water, even tiny amounts, can have a huge impact on mosquito populations. The CDC says that

source reduction can range from draining roadside ditches to properly disposing of discarded tires and other trash containers. Even standing water in a bottle cap can become a mosquito breeding ground according to the EPA.

OSHA

The Occupational Safety and Health Administration (OSHA) created its *Workplace Precautions Against West Nile Virus* as a resource for employers who have workers that could be exposed to West Nile Virus. OSHA says that workers primarily working outside are at risk, particularly in warmer weather (when mosquitoes are more likely to be present). In regions of the U.S. with warm climates, workers are at risk for a longer period. At risk occupations include farm workers, loggers, landscapers/groundskeepers, construction workers, painters, summer camp workers, pavers and other outdoor workers.

In addition, OSHA says that in at least two cases, laboratory workers handling West Nile Virus-infected fluids or tissues have become infected; therefore, these workers should also take precautions against West Nile Virus infection. An exposure may occur due to a needlestick, an accidental cut, or an existing open wound that comes in contact with infectious fluid or tissues. Laboratory workers who work with West Nile Virus- infected animals or who handle other tissue, fluid or other West Nile Virus-infected material should report to their supervisors if they believe they may have had an exposure that could result in infection. Laboratory workers handling human blood or other potentially infectious materials require protection as described in OSHA's Bloodborne Pathogens Standard, 29 Code of Federal Regulations (CFR) 1910.1030.

Commonly Asked Questions

1. **Where can I get more information on West Nile Virus?**

A: Both the CDC and the WHO have West Nile Virus landing pages where additional information and updates reside.

1. **Is West Nile Virus the same as Zika Virus?**

A: These are two separate viruses that pass to humans primarily through mosquito bites. For information on the Zika Virus see Quick Tips #395.

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