

Fear Not the Mosquito!

Don't let this summertime nuisance run you and your family indoors. Get all the facts on West Nile Virus.

It's that time of year again for picnics, camping trips, water sports—and mosquitoes. Although the summer months used to evoke excitement among many people, today they seem to evoke fear. Rather than anticipating fun-filled activities with family and friends, many people dread mosquito dodging.

The media has done an effective job of alarming people of the dangers of bug-borne diseases. But the Bible tells us: “God has not given us a spirit of fear, but of power and of love and of a sound mind” (2 Tim 1:7, NKJV). Therefore, fear no mosquitoes! Instead, try arming yourself with knowledge.

Often, people fear things they do not understand. But you overcome fear by seeking understanding (see Prov. 4). Equipped with the correct information, you are prepared to handle these pesky insects and the disease-causing germs that they carry.

The Cause of Disease

West Nile Virus (WNV) is a member of a group of disease-causing viruses called flaviviruses. Examples of well-known diseases caused by flaviviruses are yellow fever and dengue. WNV causes disease in birds, mosquitoes, horses, humans and other mammals.

According to the National Institutes of Health, the WNV was first isolated in Uganda in 1937. Today, it is commonly found in West Asia, Africa and the Middle East. It has also been found in Russia and Australia.

The first U.S. cases occurred in 1999 in New York City. The following years, especially 2003, led to an increase in the number of cases and the spread of the virus to almost every state in the country. For 2005, the Centers for Disease

Control and Prevention (CDC) reports close to 3,000 cases and more than 100 deaths.

With numbers like these, it's understandable why many people fear contracting this disease. The good news is there are things that can be done to prevent WNV. But first, I would like to debunk a few myths about this disease.

Misconceptions About WNV

One common belief is that there is not much that can be done to prevent WNV. However, there is a lot that can be done to reduce the risks. Public health officials recommend many ways to prevent mosquito bites, which ultimately reduces the risks of becoming infected with WNV.

Another myth concerning WNV is that it causes disease in only unhealthy people. The truth is that many cases have been reported among healthy, active people. It is true however, that some groups, such as the elderly, have a higher risk of developing serious illness if infected with WNV.

Some people also believe that they should not be concerned about WNV if they live in areas that have programs for mosquito control. These programs may help tremendously, but everyone should do their part to protect themselves.

The first step is to get the right information. Now that the truth has been revealed, it's time to learn more about the disease and what can be done to prevent it.

Spread and Seasonality

The main reservoir for WNV is birds. Crows and jays have been found to be highly susceptible to WNV infection. If a mosquito bites an infected bird, it can spread the virus by biting another bird, other animal or human.

Although less common, the virus also may be spread through blood transfusions and organ transplants. A mother can pass the virus to her child during pregnancy and through

breastfeeding. The virus cannot be spread from person to person through touching.

Because mosquitoes are more prevalent in the summer months in many parts of the U.S., one would correctly assume that WNV infection is as well. Experts agree that it is a seasonal epidemic—beginning in the summer and continuing into the fall. Although in areas where the temperatures are mild, WNV may be transmitted throughout the year.

Symptoms and Treatments

The CDC reports that almost 80 percent of those infected with WNV will have no symptoms; and up to 20 percent will have mild symptoms. So you see, very few people, approximately less than 1 percent, actually develop severe illness from WNV infection.

People who have symptoms usually develop them between three and 14 days after having been bitten by an infected mosquito. Mild symptoms of WNV infection seem to be similar to those for other infectious diseases: headaches, body aches, fever, swollen glands, nausea and vomiting.

People infected with WNV may also have skin rashes on different parts of the body, including the back and stomach. Though these symptoms don't seem very mild, actually they are.

The symptoms may last from several days to several weeks, but are usually not life-threatening. The form of the disease associated with these symptoms is referred to as West Nile Fever and does not compare to the severe form of the disease, which occurs when the virus affects a person's nervous system.

There may be inflammation of the brain (West Nile encephalitis), inflammation of the membrane around the brain and spinal cord (West Nile meningitis) and inflammation of the brain and membrane surrounding it (West Nile meningoencephalitis).

The following symptoms may occur as a result of "neuroinvasive

disease”:

1. High fever
2. Tremors
3. Disorientation
4. Coma
5. Convulsions
6. Muscle weakness
7. Loss of vision
8. Paralysis

Severe symptoms may last several weeks, as opposed to several days, and neurological effects may be permanent. Also, many of these symptoms can be life-threatening.

Most people that become infected with WNV and display mild symptoms recover fully. To date, there are no West Nile-specific therapies in existence for people with severe symptoms. People with severe symptoms and complications may be hospitalized and are then provided treatment for comfort.

How to Prevent WNV Infection

Avoid mosquito bites. This may be easy for some people, but what about those who seem to be magnets for mosquitoes? It is true that some people naturally draw insects to them more readily. Although this is not well-understood, experts believe this is because of differences in body chemistry.

Compounds that are naturally released from the body through the skin and breath are a byproduct of metabolism. Because each person's metabolism may work a little differently, the compounds and amounts released may vary among people. Carbon dioxide, for example, is known to attract mosquitoes. This compound is released from both the breath and skin and can probably attract mosquitoes from long distances.

There are three basic ways to avoid mosquito bites.

1. Use insect repellent. Insect repellents basically fall into two categories: chemical (man-made) and plant-based. Examples

of chemical repellants are IR3535, Picardin (KBR 3023) and DEET (N,N-diethyl-m-toluamide). The plant-based repellents are comprised of oil of lemon eucalyptus.

Experts at the National Institutes of Health recognize DEET and Picardin as the most effective repellents. The CDC recommends the use of products that have been registered with the U.S. Environmental Protection Agency (EPA). These products have been tested for protection and safety and contain active ingredients such as DEET, Picardin and oil of lemon eucalyptus. Apply insect repellent on exposed skin and clothing. Read and carefully follow the manufacturer's recommendations for use and safety, especially for children.

2. Dress to protect. Wear shirts with sleeves, long pants and socks, especially if you will be in areas known to have great mosquito activity (i.e. near water). If the weather does not permit, consider wearing lightweight clothing that also provides some protection.

3. Avoid contact. Mosquitoes have some predictable behaviors. Your awareness of these behaviors will help protect you. For example, the peak biting times for many types of mosquitoes is from dusk to dawn. You may wish to avoid outdoor activities during these hours.

Also, mosquitoes breed in standing water. Remove containers that hold water from areas around your home to control breeding. Install screens on all doors and windows and prevent them from entering your home.

WNV is a mosquito-borne, disease-causing virus, but there is no need to fear. God has equipped you with the ability to seek knowledge and understanding, the best armor for maintaining your health.

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