



Salem/Cumberland County Health Department
WEST NILE VIRUS
(PUBLIC HANDOUT)

What are West Nile virus, West Nile fever, and West Nile encephalitis?

West Nile Virus is a flavivirus commonly found in Africa, West Asia, and the Middle East. It is closely related to St. Louis encephalitis virus found in the United States. The virus can infect humans, birds, mosquitoes, horses, and some other mammals.

West Nile fever is a mild disease in people, characterized by flu-like symptoms. West Nile fever typically lasts only a few days and does not appear to cause any long-term health effects.

More severe diseases due to a person being infected with this virus can be West Nile encephalitis, West Nile meningitis or West Nile meningoencephalitis. Encephalitis refers to an inflammation of the brain, meningitis is an inflammation of the membrane around the brain and the spinal cord, and meningoencephalitis refers to inflammation of the brain and the membrane surrounding it.

Is the disease seasonal in its occurrence?

In the temperate part of the world (i.e., between latitudes 23.5 degrees and 66.5 degrees north and south), West Nile



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encephalitis cases occur primarily in the late summer or early fall. In the southern climates where temperatures are milder, West Nile virus can be transmitted year round.

Who is at risk for getting West Nile encephalitis?

All residents of areas where virus activity has been identified are at risk of getting West Nile encephalitis; persons over 50 years of age have the highest risk of severe disease. It is unknown if those with immune systems deficiencies are at increased risk of West Nile Virus disease.

What are the symptoms of West Nile Virus infection?

Most people who are infected with the West Nile virus will not have any type of illness. It is estimated that 20% of the people who become infected will develop West Nile fever: mild symptoms, including:

- Fever
- Headache
- Body aches
- Occasional skin rash on the trunk of the body and swollen lymph glands.



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The symptoms of severe infection (West Nile encephalitis or meningitis) include:

- Headache
- High fever
- Neck stiffness
- Stupor
- Disorientation
- Coma
- Tremors
- Convulsions
- Muscle weakness
- Paralysis

It is estimated that 1 in 150 persons infected with the virus will develop a more severe form of the disease.

What is the incubation period (i.e., time from infection to onset of disease symptoms) in humans for West Nile encephalitis?

Usually 3-14 days.



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How long do symptoms last?

Symptoms of mild disease will generally last a few days.

Symptoms of severe disease may last several weeks, although neurological effects may be permanent.

If I think I have symptoms of West Nile virus, what should I do?

Contact your health care provider if you have concerns about your health. If you or your family members develop symptoms such as high fever, confusion, muscle weakness, and severe headaches, you should see your doctor immediately.

How do health care providers test for West Nile virus?

Your physician will first take a medical history to assess your risk for West Nile virus. People who live in or traveled to areas where West Nile virus activity has been identified are at risk of getting West Nile encephalitis; persons older than 50 years of age have the highest risk of severe disease. If you are determined to be at high risk or have symptoms of West Nile encephalitis, your provider will draw a blood sample and send it to a commercial or public health laboratory for conformation.



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How is West Nile encephalitis treated?

There is not specific treatment for West Nile virus infection. In more severe cases, intensive supportive therapy is indicated, often involving hospitalization, intravenous fluids, assistance with breathing, prevention of other infections, and good nursing care.

What can I do reduce my risk of becoming infected with West Nile virus?

Here are some preventative measures you and your family can take:

- ✓ Apply insect repellent sparingly to exposed skin. The more DEET a repellent contains the longer it can protect you from mosquito bites. A higher percentage of DEET does mean that your protection is better – just that it will last longer. DEET concentrations higher than 50% do not increase the length of protection. Choose a repellent that provides protection for the amount of time you will be outdoors.
- ✓ Spray clothing with repellents containing permethrin or DEET since mosquitoes may bite through thin clothing. Do not apply repellents containing permethrin directly to



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exposed skin. If you spray your clothing, there is no need to spray repellent containing DEET on the skin under your clothing.

- ✓ When possible, wear long-sleeved shirts and long pants whenever you are outdoors.
- ✓ Place mosquito netting over infant carriers when you are outdoors with infants.
- ✓ Consider staying indoors at dawn, dusk, and in the early evening, which are peak mosquito biting times.
- ✓ Install or repair window and door screens so that mosquitoes cannot get indoors.

Help reduce the number of mosquitoes in areas where you work or play, by draining sources of standing water. In this way, you reduce the number of places mosquitoes can lay their eggs and breed.

- ✓ At least once or twice a week, empty water from flowerpots, pet food and water dishes, birdbaths, swimming pool covers, buckets, barrels, and cans.
- ✓ Check for clogged rain gutters and clean them out.
- ✓ Remove discarded tires, and other items that could collect water.



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- ✓ Be sure to check for containers or trash in places that may be hard to see, such as under bushes or under your home.

Is there a vaccine for West Nile encephalitis?

No, but several companies are working towards developing a vaccine.

How do people get infected with West Nile virus?

The principle route of human infection with West Nile virus is through the bite of an infected mosquito. There are other methods of becoming infected with West Nile virus, which include organ transplants and possibly blood transfusions. It is important to remember that these other methods represent a very small proportion of cases.

If I live in an area where birds or mosquitoes with West Nile virus have been reported and a mosquito bites me, am I likely to get sick?

No. Even in areas where the virus is circulating, very few mosquitoes are infected with the virus. Even if the mosquito is infected, less than 1% of people who get bitten and become



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infected will get severely ill. The chances that you become severely ill from any mosquito bite are extremely small.

Can you get West Nile encephalitis from another person?

No. West Nile encephalitis is NOT transmitted from person-to-person. For example, you cannot get West Nile virus from touching or kissing a person who has the disease, or from a health care worker who has treated someone with the disease.

Is a woman's pregnancy at risk if she gets infected with West Nile virus?

There is one documented case of mother-to-child transmission of West Nile virus in humans. Although the newborn in this case was infected with West Nile virus at birth and had severe medical problems, it is unknown whether the West Nile virus infection itself caused these problems or whether they were coincidental. More research will be needed to improve our understanding of the relationship – if any – between West Nile virus infection and adverse birth outcomes.

Nevertheless, pregnant women should take precautions to reduce their risk for West Nile virus by avoiding mosquitoes, using protective clothing and repellents containing DEET.



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How long does the West Nile virus remain in a person's body after they are infected?

There is no scientific evidence indicating that people can be chronically infected with West Nile virus. What remains in a person's body for long periods of time are the antibodies and "memory" white blood cells (T-lymphocytes) that the body produces to the virus. These antibodies and T-lymphocytes last for years, and may last for the rest of a person's life. Both antibodies and T-lymphocytes provide future protection from the virus.

Repellent Use and Safety

Why should I use repellent?

Insect repellents help people reduce their exposure to mosquito bites that may carry potentially serious viruses such as West Nile virus, and allow them to continue to play and work outdoors.

When should I use repellent?

Apply when you are going to be outdoors and will be at risk for getting bitten by mosquitoes.



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What time of the day should I wear mosquito repellent?

Many of the mosquitoes that carry the West Nile virus are especially likely to bite around dusk and dawn. If you are outdoors around these times of the day, it is important to apply repellent. In many parts of the country, there are mosquitoes that also bite during the day, and these mosquitoes have also been found to carry West Nile virus. The safest decision is to apply repellent whenever you are outdoors.

How often should repellent be reapplied?

Follow the directions on the product you are using in order to determine how frequently you need to reapply repellent. Sweating, perspiration or getting wet may mean that you need to re-apply more frequently. If you are not being bitten, it is not necessary to re-apply repellent. Repellents containing a higher concentration of active ingredient (such as DEET) provide longer-lasting protection.

Which mosquito works the best?

The most effective repellents contain DEET, which is an ingredient used to repel pests like mosquitoes and ticks.



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DEET has been tested against a variety of biting insects and has been shown to be very effective.

Why does CDC recommend using DEET?

The Centers for Disease Control (CDC) recommend using DEET. DEET is the most effective and best-studied insect repellent available. Studies using humans and mosquitoes report that only products containing DEET offer long-lasting protection after a single application.

Is DEET safe?

Yes, products containing DEET are very safe when used according to the directions. Because DEET is so widely used, a great deal of testing has been done. DEET has been tested for both short-term and long-term health effects. Over the long history of DEET use, very few confirmed incidents of toxic reactions to DEET have occurred when the product is used properly.



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What are some general considerations to remember in order to use products containing DEET?

Always follow the recommendations appearing on the product label.

- Use enough repellent to cover exposed skin or clothing. Don't apply repellent to skin that is under clothing.
- Do not apply repellent to cuts, wounds, or irritated skin.
- After returning indoors, wash treated skin with soap and water.
- Do not spray aerosol or pump products in enclosed areas.
- Do not apply aerosol or pump products directly to your face. Spray your hands and then rub them carefully over the face, avoiding eyes and mouth.

Is DEET safe for pregnant or nursing women?

There are no reported adverse events following use of repellents containing DEET in pregnant or breastfeeding women.



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**Are there any risks due to using repellents containing
DEET?**

Use of these products may cause skin reactions in rare cases. If you suspect a reaction to this product, discontinue use, wash the treated skin, and call you local poison control center. There is a new national number to reach a **Poison Control Center** near you: **1-800-222-1222**.