



West Nile Virus Facts

ORIGINS: West Nile virus (WNV) is a virus that is transmitted by mosquitoes that affects the nervous system. It has been found in humans, birds, horses, and other animals, in Africa, Eastern Europe, and the Middle East. In 1999, WNV was detected in the United States for the first time, and since then it has spread across the country. In 2002, WNV caused the largest outbreak of mosquito-borne neurological disease recognized in the Western Hemisphere.

TRANSMISSION: West Nile virus exists in nature through a **transmission cycle** involving mosquitoes and birds. Mosquitoes become infected with West Nile virus when they feed on infected birds, which may carry the virus in their blood for a few days. Infected mosquitoes can then transmit West Nile virus to humans and animals when biting to take a blood meal. In rare instances, West Nile virus may be transmitted from human to human through organ donation, blood transfusion, breastfeeding, or from pregnant mother to fetus. These new modes of transmission account for only a small number of cases. **WNV is NOT spread by casual contact such as kissing or touching a person infected with the virus.**

SYMPTOMOLOGY: Most individuals infected with West Nile virus will not have any symptoms or signs of illness. People who do develop illness may experience **mild symptoms** such as fever, headache, and body aches; occasionally a skin rash and swollen lymph glands may be noticed. These symptoms typically appear 3 to 15 days after the bite of an infected mosquito. Less than 1% of persons infected with the virus may develop more severe disease with symptoms such as high fever, neck stiffness, stupor, disorientation, coma, tremors, convulsions, muscle weakness, paralysis, and, rarely, death. People ≥ 50 years of age have the highest risk of developing severe illness. Although most people are at low risk for disease, those who spend a lot of time outdoors have a greater risk of being bitten by an infected mosquito.

TREATMENT: No specific treatment for WNV infection exists at present. In severe cases, people may require hospitalization, which might include treatment with IV fluids, breathing support, and nursing care.

RISK REDUCTION: Maryland citizens can **reduce** their **risk** of becoming infected with West Nile virus by taking the following steps to avoid mosquitoes:

1. Stay indoors at dawn or early in the evening.
2. Wear long-sleeved shirts and long pants when going outdoors.
3. Spray clothing with repellents containing permethrin or DEET (N, N-diethyl-metoluamide), since mosquitoes may bite through thin clothing. An effective repellent should contain 30% DEET. Higher concentrations of DEET do **not** provide additional protection.
4. Apply insect repellent *sparingly* to exposed skin and following all package instructions.
5. Parents should choose the type and concentration of repellent to be used by considering the amount of time that a child will be outdoors, exposure to mosquitoes, and the risk of mosquito-transmitted disease in the area. Persons who are concerned about using DEET or other products on children may wish to consult their health care provider for advice.
6. Ensure that all window screens in your home or business are intact and do not contain holes. Repair any damaged screens.

Mosquito Source Reduction



PRECAUTIONS: Mosquitoes can breed in as little as 1/4 inch of water. In addition to the personal protective measures listed above, Maryland citizens should take the following precautions to **reduce mosquito-breeding** sites around their homes and businesses.

- Remove all discarded tires from your property. If tire removal is not possible, puncture or cut tires to prevent water from collecting in them.
- Dispose of tin cans, plastic containers, ceramic pots, or similar water-holding containers.
- Make sure roof gutters drain properly. Clean clogged gutters in the spring and fall.
- Clean and chlorinate swimming pools, outdoor saunas, and hot tubs. If not in use, keep empty and covered.
- Drain water from pool covers.
- Change the water in birdbaths at least once a week.
- Turn over plastic wading pools and wheelbarrows when not in use.
- Eliminate any standing water that collects on your property.
- Remind or help neighbors to eliminate breeding sites on their property.
- Check for trapped water in plastic or canvas tarps used to cover boats, pools, etc. Arrange the tarp to allow water to drain.
- Pump out bilges in boats. Store canoes and small boats upside down.
- Remove outdoor pet food and water dishes that are not being used.
- Flush livestock water troughs twice a week.
- Do not leave garbage can lids lying upside down. Be sure water does not collect in the bottom of garbage cans or recycle bins.
- Check around construction sites or do-it-yourself improvements to ensure that proper backfilling and grading prevent drainage problems.
- Check ornamental ponds, tree holes, and water-holding low areas for mosquito larvae. Call the nearest Mosquito Control Office if you find, or suspect that mosquito larvae are present.

The Maryland Department of Health and Mental Hygiene is collaborating with the Maryland Department of Agriculture and the Maryland Department of Natural Resources to monitor mosquito, horse, and human populations for evidence of West Nile virus and other arboviruses of public health concern.

For more information about West Nile virus, please contact the Center for Veterinary Public Health at (410) 767-5649 or visit our website at http://edcp.org/html/west_nile.html.

For more information about mosquito control, please contact the Maryland Department of Agriculture at (410) 841 – 5870 or visit <http://www.mda.state.md.us>.