



- West Nile Virus is a bird disease.
- Humans only get WNV from mosquito bites.
- Less than 1 in 10,000 of humans that are infected have any serious disease.
- Avoid Exposure:
 - * Cover up
 - * Use DEET safely
 - * Reduce standing water

Written by:

Graeme Johnson, M.D.

MEDICAL CONSULTANT

SCDDSN

3440 Harden Street Ext.

PO Box 4706

Columbia, SC 29240

PHONE:

803-898-9808

FAX:

803-898-9656

E-MAIL:

gjohnson@ddsn.state.sc.us

EXTRANET:

10-003155/pronet



WEST NILE VIRUS AND ITS SPREAD

Now that we have several cases of West Nile Virus (WNV) infection in birds in South Carolina, it is wise for us to look at this virus. We need to think about some issues of how infections are spread and what we can do to reduce the spread of infection, and protect ourselves and those that we care about at home and at work.

We live with many bugs or organisms. Sometimes they can be helpful, like the bugs that change milk into yogurt. Some bugs we live alongside peacefully like most of the coliform organisms that we all carry in our gut, but some bugs are dangerous and we call them pathogens. Pathogens can cause illness because they get into parts of the body where they are unwelcome. They can cause a negative body response that leads to inflammation, fever, pain, etc. or they may produce toxins of their own that cause damage. There are many ways that infection can be transmitted from one place to another and also many defenses that are possible to stop it. We will look at several ways in our next newsletter. You will notice in that newsletter that the single most important way to stop the spread of infection to ourselves is to wash our hands. This is still the most important step for infection control. It is not the way we stop the spread of West Nile Virus, because West Nile Virus is only spread by mosquito bites. It is an example of a vector-borne infection.

WHAT IS A VIRUS?

A virus is too small to see easily with even most ordinary microscopes. It is a package of RNA or DNA genetic material wrapped in a coat of protein. To multiply, a virus needs to invade a "host" cell and take over its machinery to make more virus particles. While it does this, it irritates the cell processes and leads to a response that changes the way the cells of the body work together. If the virus can infect important cells, it can cause serious illness.

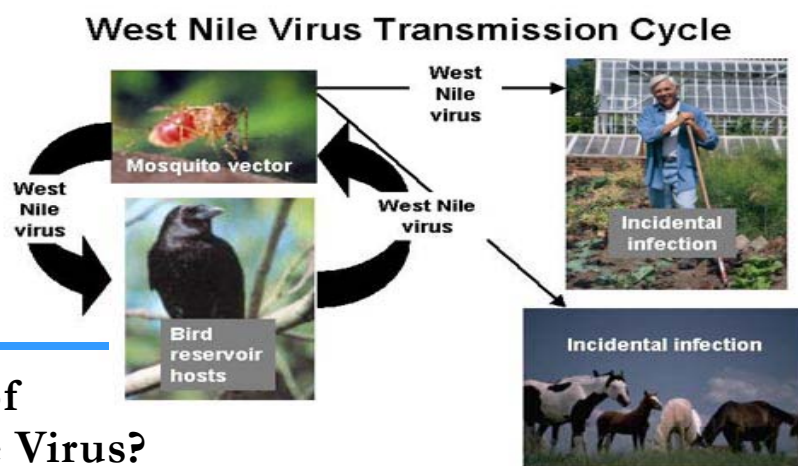
WHAT IS WEST NILE VIRUS?

In nature, the West Nile Virus lives in the cells of birds. Since 1999 it has been found in tests on jays, crows, ravens and raptors (hawks, etc.) in the USA. Mosquitoes become infected after biting a bird that has the virus and the mosquito can then transmit the virus to a human if the insect bites the human. The virus can only be spread by the mosquito bite and is not spread from person to person even by close social or care-giving activities.

WHAT HAPPENS IF THE WEST NILE VIRUS IS TRANSMITTED TO A HUMAN?

If a person is bitten by an infected mosquito, they will not necessarily get sick. Most people (99%) do not become ill. Most people do not have symptoms. Of those 1% who do get ill, most have a mild illness of fever, headache, body aches and swollen glands 3 - 15 days after the bite. In a smaller number (less than 1 in 10,000) of persons the virus can possibly infect the brain cells and cause encephalitis. Encephalitis causes headaches, high fever, muscle weakness, stiff neck, confusion and disorientation. It may progress to paralysis and can be fatal. If a flu-like illness develops to include these problems, then encephalitis caused by WNV or other

viruses is possible and medical care is needed immediately. Persons who are over 50 years old or persons with reduced immunity are more likely to have this rare complication with WNV. At present, we are hearing a lot about the seriously ill persons. The news does not tell us of the many people with minor or no symptoms.



How can we reduce the risk of being infected with West Nile Virus?

There is no vaccine for West Nile Virus. The protection against the virus is to prevent mosquito bites.

Mosquitoes bite exposed skin. They are active in the hours of dusk to dawn in areas where there are tall grasses or bushes, and are more likely to be around if there is standing or slow-moving water nearby. Therefore, your risk is reduced if you do not go into these areas overnight. If we have well fitting, well maintained screens on doors and windows, we can also reduce our contact with active mosquitoes.

If you are outside in risk areas, it would be wise to wear protective clothing - socks, long pants, long sleeved, but loose fitting shirts (with cuffs are best). You can reduce your attractiveness to mosquitoes that may

wish to bite you by wearing repellents. Tests have shown that Skin So Soft is not very effective and has no effect after 15 minutes. The recommended repellents for use on exposed skin contain DEET. Concentrations up to 30% may be used, but as skin absorption can occur, the American Academy of Pediatrics recommends restricting concentration for children to below 10%. They also suggest adults (not children) apply repellents using their hands to do so, not direct from bottle or spray and avoid areas around the eyes and mouth. Use all products according to labels and store safely. All users should reduce the chance of absorption as much as possible by not using repellents under clothes, washing it off after use, avoiding use on irritated or cut skin or transfer into the mouth - areas where absorption would increase.

CDC Website

WHAT NEEDS TO BE DONE TO REDUCE MOSQUITOES?

As the West Nile Virus is only spread by mosquitoes, then no mosquitoes would mean no West Nile Virus spread to humans, but as we all know that would be almost impossible in South Carolina. There are county abatement programs to control mosquitoes, but we can all help if we reduce favorite places for mosquitoes to hang out and breed. Anywhere there is standing water can allow

mosquito wigglers to grow and create a crop of flying pests. Therefore, we need to remove discarded tires, unblock rain gutters, drain cans, pots and buckets, turn over wheelbarrows, and chlorinate or cover swimming pools when not in use. This will help reduce the population of mosquitoes that could bite an infected bird then us, and cause a risk of illness with WNV.



WHAT ABOUT BIRDS?

Some birds that are infected with the West Nile Virus die. DHEC has been testing birds found dead for the virus and this is the information that tells us we have West Nile Virus in the crows, jays and ravens of South Carolina. We really do not need more information, but if you wish to know,

you can ask DHEC to consider testing crows, jays or ravens that die. You should always handle any dead animal with gloves. In this case, the virus is only known to be transmitted by mosquito bites, but there will be other bugs present on the dead bird.



Remember:

1. We are not at high risk for the nasty disease of West Nile Virus - Encephalitis.
2. Flu is more dangerous for us.
3. We can reduce the risk mosquito borne disease by sensible management:
 - * avoid exposure
 - * cover up
 - * use repellent
 - * reduce mosquito breeding grounds
4. Anyone who develops flu-like illness that then becomes weak, confused or has a stiff neck needs medical assessment whether they have been bitten by a mosquito or not.