

West Nile Virus

Overview

West Nile virus is a disease that mosquitoes transmit. Humans should use an insect repellent that contains DEET to prevent West Nile virus. Apply the repellent whenever outdoors, especially at dawn and dusk when mosquitoes are more likely to be around.

Control the mosquito population. Search for and empty containers that hold water. The activity handout challenges students to pour out the water that may collect in their play equipment and other containers around their homes.

Objective

To develop an awareness of West Nile virus and provide protection information against West Nile virus.

Introduction

1. Introduce yourself to the students; let them know your name, background, and anything else that may interest them and ties into the presentation.
2. Make the students aware that the information you will present to them is important and that they need to pay attention.
3. Inform the students that they will participate in an activity as time allows and they must be responsible during this activity. Stressing responsibility is especially important if you deal with a younger group of students.

Activity

Materials Needed

- Demonstration display poster
- Four sheet activity handout (shown below). Order these from the SDSU Cooperative Extension Service Bulletin Room (688-5628) or copy them from the Web site:
- DEET spray
- DEET wipe-on

Conducting the Activity

Have the children complete the connect-the-dots sheet in the activity handout as the students gather and settle down.

Using the display poster and the second page of the activity handout, discuss with the students the importance of controlling mosquitoes and how West Nile is passed between mosquitoes and some birds. People and some animals can get the disease when infected mosquitoes bite them. To reduce the number of mosquitoes:

- **Drain Standing Water:** mosquitoes lay their eggs in standing water.

Limit the number of places around your home for mosquitoes to breed by getting rid of items that hold water

- **Install or Repair Screens:** some mosquitoes like to come indoors. Keep them

outside with well-fitting screens on both windows and doors. Offer to help neighbors whose screens might be in bad shape.

Demonstrate how students can protect themselves by using DEET.

Children should use repellents with no more than 30% DEET

Do not allow children to apply DEET.

Apply DEET to exposed skin and clothing.

Do not spray near the face or inhale mist.

Use no more DEET than necessary.

When returning indoors, wash exposed skin.

Other methods to protect yourself:

- Wear long-sleeved shirts whenever possible.
- Replace damaged window screens. Some mosquitoes like to come indoors. Keep them outside with well-fitting screens on both windows and doors. Offer to help neighbors whose screens might be in bad shape.
- Avoid being outside at night. The hours from dusk to dawn are peak mosquito biting times for many species of mosquitoes

Rap up and reinforcement main two take-home points

Use DEET to protect yourself.

Reduce mosquito population by removing standing water.

If time allows, complete the word scramble on page four of the Activity Handout.

West Nile Virus Facts

What is West Nile virus?

West Nile virus is a mosquito-borne infection that causes mild flu-like illness or severe encephalitis. Although chances of a person getting encephalitis are small, there are steps you can take to reduce your risk of being bitten by mosquitoes.

What is encephalitis?

Encephalitis is an infection of the brain. The symptoms include headache, high fever, stiff neck, stupor, disorientation, coma, tremors, convulsions, weakness and paralysis. These symptoms may last several weeks, although neurological effects may be permanent.

Should we stay indoors?

It is not necessary to limit any outdoor activities unless local officials advise you otherwise. However, you can and should try to reduce your risk of being bitten by mosquitoes. In addition to

reducing stagnant water in your yard, make sure all windows and doors have screens, and that all screens are in good repair. If WNV is found in your area:

Minimize time spent outdoors between dusk and dawn

Wear shoes, socks, long pants and a long-sleeved shirt when outdoors for long periods of time or when mosquitoes are most active

Use mosquito repellent containing DEET according to direction when you are outdoors

Do all mosquitoes transmit disease?

No. Some mosquitoes do not transmit disease. There have been 43 different species of mosquitoes identified in South Dakota. Of these only 9 species are known infectors of WNV. Other species have been associated with WNV in other states.

Where do mosquitoes live and breed?

The mosquito that commonly transmits WNV lays its eggs in stagnant water, both in natural ground pools and in artificial containers. The eggs become larvae that remain in the water until they mature and fly off. Weeds, tall grass and shrubbery provide an outdoor home for adult mosquitoes. They can also enter houses through unscreened windows or doors or broken screens. Most mosquitoes breed in discarded tires.

When are mosquitoes most active?

Some mosquitoes are most active between dusk and dawn when the air is calm. However, others may be present at any time of day, and feed during the daytime and at dusk.

What bird(s) can carry West Nile virus?

Although most birds can be infected with West Nile virus, crows, blue jays, magpies, hawks, owls and eagles are most likely to die from the virus.

Can you get West Nile virus directly from birds?

There is no evidence that a person can get the virus from handling live or dead infected birds. However, avoid bare-handed contact when handling any dead animals and birds. Use gloves or double plastic bags to place the carcass in a garbage can.

Can other animals become infected?

Yes. WNV can make horses very ill. It can also be detected in dogs, cats, bats, chipmunks, raccoons, skunks, squirrels, and domestic rabbits. It is important to remember that animals cannot transmit WNV to people.

How can I protect my family and myself?

Use mosquito repellent containing DEET according to directions when you are outdoors.

To reduce the mosquito population around your home and property, reduce or eliminate all standing water:

Remove all discarded tires on your property. Used tires have become an important source of mosquito breeding in the nation.

Drill holes in the bottoms of recycling containers that are kept outdoors.

Make sure roof gutters drain properly, and clean clogged gutters in the spring and fall.

Turn over plastic wading pools and wheelbarrows when not in use.

Change the water in birdbaths.

Clean vegetation and debris from edges of ponds.

Clean and chlorinate swimming pools, outdoor saunas and hot tubs.

Drain water from pool covers.

Use landscaping to eliminate standing water that collects on your property.

Is there a vaccine against West Nile encephalitis?

There is no human vaccine for WNV. However, there is a vaccine for horses (Innovator™). This is a killed virus vaccine. The vaccine is administered intramuscularly. A booster dose is administered in three to six weeks after the initial dose. Horses are revaccinated annually. Please see your veterinarian.

Wrap Up

After the activity, discuss with students the West Nile virus facts they just heard. Go over the two main points that the students should take home:

Use DEET to protect them.

Reduce the mosquito population around your home and property by reducing or eliminating all standing water.