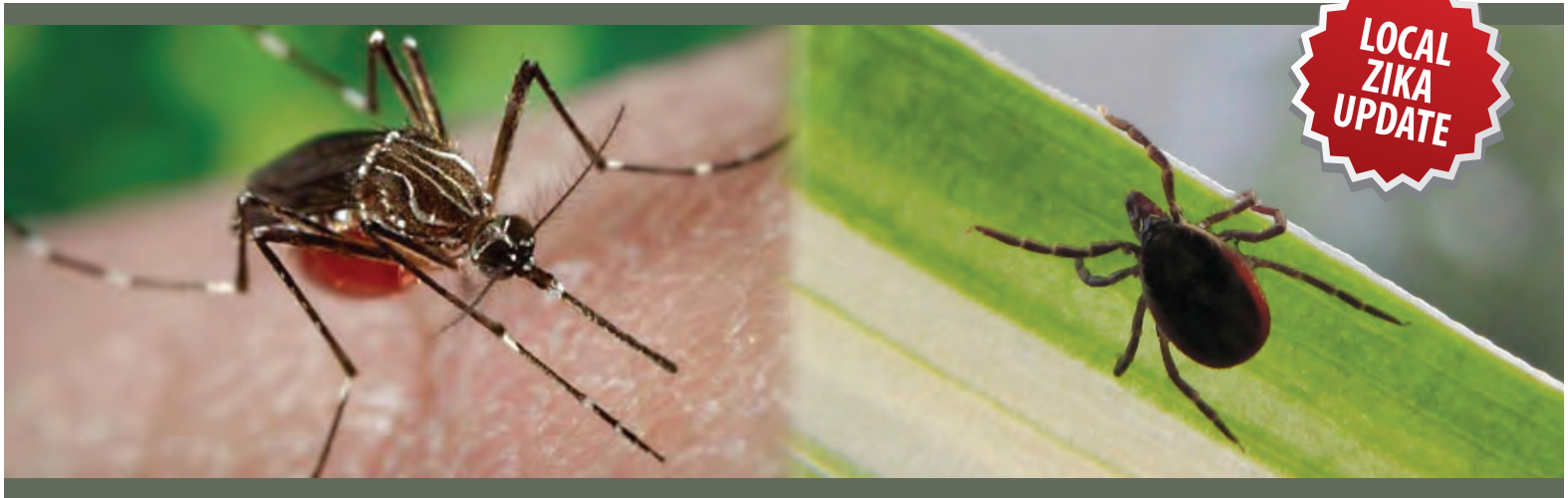


Onondaga County Health Department
welcomes you to

FIGHT the BITE in CNY

A Forum on Mosquitoes and Ticks



Thursday, June 30, 2016 • 1:00-2:30 pm

John H. Mulroy Civic Center | Carrier Theater
421 Montgomery Street, Downtown Syracuse

**VISIT US
ONLINE**

Print-ready documents and links to more information will be
available at www.ongov.net/health/fightthebiteforum.html

Enjoy our presentations by local and statewide experts:
Public and Global Health • Mosquito and Tick-Borne Diseases
Surveillance and Control • Personal Protection

Presentations will be followed by interactive table discussions

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Thursday, June 30, 2016 • 1:00-2:30 pm

John H. Mulroy Civic Center | Carrier Theater | 421 Montgomery Street, Syracuse

AGENDA

1:00 - 1:10 Welcome and Opening Remarks

Indu Gupta, MD, MPH, Commissioner
Onondaga County Health Department

1:10 - 1:40 Overview of Vector Borne Diseases

Bryon Backenson, Deputy Director
Bureau of Communicable Disease Control
New York State Department of Health

1:40 - 1:55 The A to Z of Insect-Borne Illnesses

Timothy Endy, MD, MPH, Chief of Infectious Disease
SUNY Upstate Medical University

1:55 - 2:00 Role of the Onondaga County Health Department and Closing Remarks

Quoc Nguyen, MD, Medical Director
Onondaga County Health Department

2:00 - 2:30 Education Stations, Lobby Area

Zika: Prevention and Local Update *Onondaga County Health Department*
Personal Protection Measures *Onondaga County Health Department*
Mosquito Trapping and Surveillance *Onondaga County Health Department*
Local Tick Surveillance *SUNY College of Environmental Science and Forestry*
Signs, Symptoms, and Tick Removal *SUNY Upstate Medical University*
Habitat and Landscape Management *Cornell Cooperative Extension*

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FIGHT the BITE in CNY

A Forum on Mosquitoes and Ticks

RESOURCE MATERIALS PACKET CONTENTS:

Onondaga County Health Department:

- Fight the BITE: Protect yourself from Mosquito Borne Diseases
- Zika Virus Fact Sheet
- Zika Virus & Pregnancy
- Frequently Asked Questions About Aerial Mosquito Spraying
- Protect Yourself from Lyme Disease
- Onondaga County Health Department Facebook card

New York State Department of Health:

- Mosquito Bite Prevention for Travelers

U.S. Centers for Disease Control and Prevention (CDC) - CDC's Response to Zika:

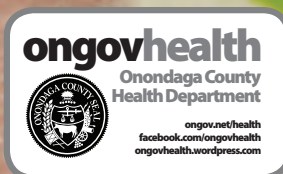
- CDC's Division of Vector-Borne Diseases
- What We Know and What We Don't Know (infographic)
- Zika: The Basics of the Virus and How To Protect Against It
- PREGNANT? Read this before you travel
- Stay Healthy on the Road to RIO Protect Yourself from Zika

For more information visit:

- www.ongov.net/health
- www.health.ny.gov/diseases/zika_virus
- www.health.ny.gov/diseases/west_nile_virus
- www.health.ny.gov/diseases/eastern_equine_encephalitis
- www.cdc.gov/zika
- www.cdc.gov/westnile
- www.cdc.gov/EasternEquineEncephalitis



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Mosquito bites...

can spread diseases like West Nile Virus (WNV) and Eastern Equine Encephalitis (EEE). It is spread when an infected mosquito bites a person. The mosquitoes that transmit Zika Virus have never been found in Onondaga County.

Who is at risk of getting infected with WNV and EEE?

Anyone living in an area where WNV and EEE is present in mosquitoes can get infected.

What is the risk of getting sick?

WNV- Most people who get infected with WNV do not develop symptoms or become sick. People over 50 are at a higher risk to get severe illness.

EEE-Adults over age 50 and children younger than 15 are the most at risk of becoming severely ill from infection with EEE.

What are the symptoms?

Signs and symptoms may include:

- Headache
- Body aches
- Vomiting
- Diarrhea
- High fever
- Chills
- Nausea
- Neck stiffness
- Confusion
- Tremors (shaking)
- Seizures
- Muscle weakness
- Coma

Talk with your healthcare provider if you have been bitten by a mosquito and have any of these symptoms.

Use Insect Repellent Safely

- Always follow the label directions.
- Do NOT let children touch repellents. Put a small amount of repellent on your hands and apply it to your child.
- Use just enough repellent to cover exposed skin. Do NOT use repellents containing permethrin directly on your skin.
- Do NOT spray repellent on the skin under your clothing.
- Do NOT spray repellent directly on your face, especially near the eyes or mouth.
- Apply a small amount of repellent near the ears.
- Do NOT use repellent on cuts, wounds, or irritated skin.
- Do NOT spray repellent in enclosed areas.
- After returning indoors, wash your treated skin with soap and water.

If you have a reaction to a repellent, wash the treated skin with soap and water and call your local Poison Control Center.

For more information, go to:

www.cdc.gov/westnile

www.cdc.gov/eee

<http://www.ongov.net/health/mosquitoborne>

Sources: CDC and EPA

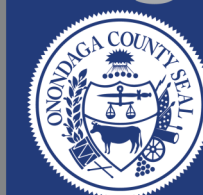


Protect yourself from Mosquito Borne Diseases

435-1649

Vector Mosquito Control Program

ongovhealth



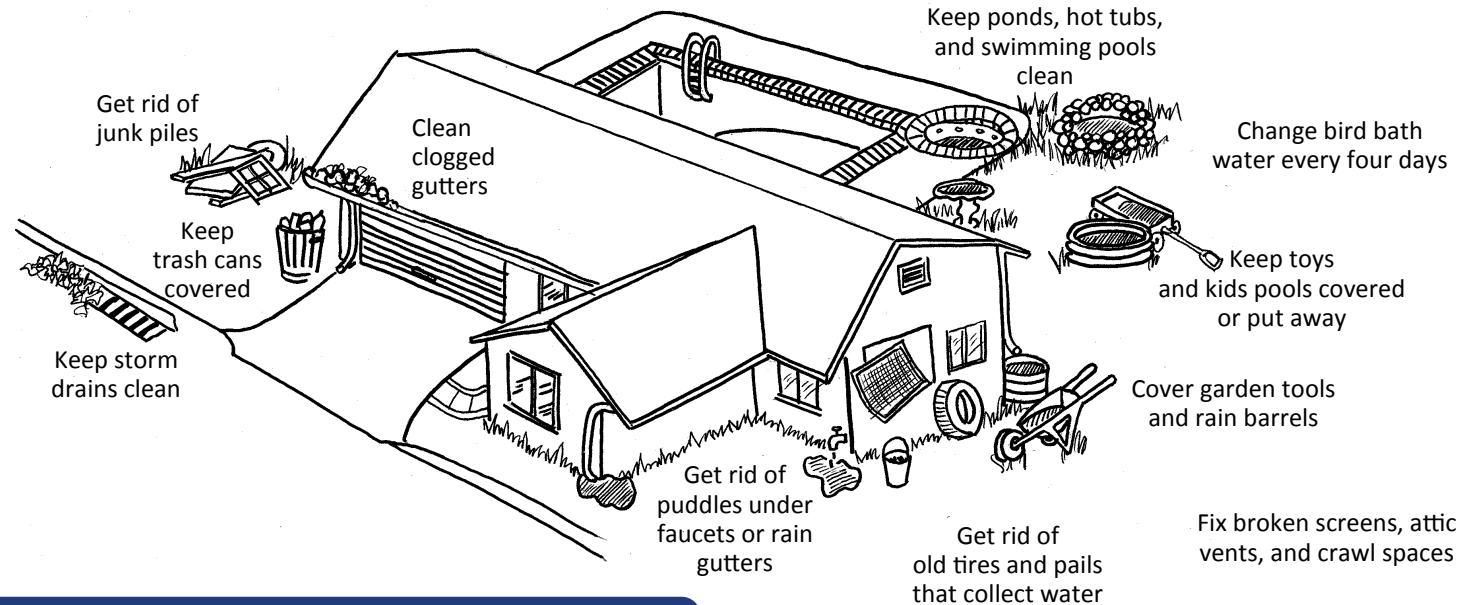
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Clean Up Mosquito Breeding Sites...



Keep mosquitoes out!



Protect Yourself From Mosquito Bites...

Get rid of water!

- Get rid of any standing water around your home because mosquitoes need water to breed.

Don't let them in!

- Be sure windows and doors have screens and fix any broken screens.

Protect yourself when outdoors!

- If you spend time outdoors, wear long pants, a long-sleeved shirt, shoes, and socks. Spray clothing and shoes with products containing permethrin.

Use a mosquito repellent!

- Use an EPA-registered insect repellent. Look for "DEET, picaridin, IR3535, and some oil of lemon eucalyptus and para-menthane-diol products because they last longer.

For more information about West Nile Virus or EEE, call the Onondaga County Health Department's Division of Environmental Health or visit: www.ongov.net/health/mosquitoborne

435-1649



Zika Virus Fact Sheet



What is Zika virus?

Zika virus is spread by an infected day time biting mosquito of the Aedes family. These mosquitoes are found in Southern and some Southeastern states of the US, Mexico, Central and South America, and in the Caribbean. Currently, there is no local spread of Zika virus by mosquitoes in the continental United States, but cases have been reported in returning travelers from outbreak countries. Zika virus can also be spread by sex, mother to baby, and blood transfusion. Onondaga County does not have Aedes mosquitoes, so at present there is no risk for mosquito transmission of Zika locally.

What are the symptoms of Zika virus infection?

In most cases, Zika virus is a mild illness and most people may not realize they have been infected. Only about 20% of infected people show symptoms. Common symptoms are fever, joint pain, rash, red eyes, and muscle pain. Symptoms usually appear within 2 to 7 days after being bitten. Chikungunya and Dengue virus infections, which are also transmitted by the same mosquitoes, may cause the same symptoms.

There are no specific medical treatment, and there is no vaccine.

Who should be tested for Zika virus infection?

- **All pregnant women** who have traveled to an area where there is active ongoing Zika virus transmission should consult their medical provider for testing **even if they have no symptoms.**
- **Anyone who has symptoms** such as fever, joint pain, rash, red eyes, and muscle pain **within 4 weeks of travel to an affected area** should consult their medical provider for testing.

Your health care provider will work with your local Health Department for any further investigation.

What conditions may be linked to Zika virus infection?

There have been reports of negative fetal outcomes including fetal loss and babies born with a small head (microcephaly), and Guillain-Barre Syndrome (a paralysis illness that can be severe) in areas where Zika virus infection are ongoing.

What should you do if you are pregnant or trying to be pregnant?

The CDC **strongly recommends** that women of child bearing age and pregnant women **postpone travel** to areas where there is active ongoing Zika virus transmission until further notice. Those who do travel to those areas should talk to their doctor first and **strictly follow steps to prevent mosquito bites during the trip.** If you become sick within 4 weeks of travel, seek care immediately and inform your provider of your recent travel history.

How can you protect yourself from getting Zika virus?

If you are traveling to areas with active ongoing Zika virus transmission:

- Protect yourself against mosquito bites, both indoors and outdoors.
- Stay in dwellings with good screened windows and doors.
- Use insect repellent safely. Follow the instructions on the product label.
- Wear protective clothing such as long pants, long sleeved shirts, and socks to cover exposed skin.

If you develop symptoms of Zika virus (fever, joint pain, rash, red eyes, and muscle pain) and have recently traveled, call your healthcare provider immediately.



Zika Virus & Pregnancy Fact Sheet

What is Zika virus?

Zika virus is spread by an infected daytime mosquito of the Aedes family. These mosquitoes are found in southern and some southeastern states of the United States (US), Mexico, Central and South America, and in the Caribbean.

Currently, there is no local spread of the Zika virus by mosquitoes in the continental US, but cases have been reported in returning travelers from outbreak countries. The Zika virus can also be spread by sex, mother to baby, and blood transfusions. Onondaga County does not have Aedes mosquitoes, so currently there is no risk for mosquito transmission of the Zika virus locally.

Is it safe for a pregnant woman to travel to a country with ongoing transmission of Zika virus?

If at all possible, until further notice, postpone travel to areas where there is active ongoing Zika virus transmission. If you must travel, it is recommended that you protect yourself against mosquito bites, both indoors and outdoors by using personal protection measures. Once you return, consult your health care provider for testing, even if you have no symptoms.

What is the effect of Zika virus infection on the pregnancy?

In the current outbreak, pregnant women infected with Zika virus can have fetal losses, poor pregnancy outcomes, and newborns with microcephaly (small head because of an underdeveloped brain). Zika virus infection can also cause Guillain-Barré Syndrome, a paralysis illness that can be severe and deadly.

If a woman is not pregnant and is bitten by an infected mosquito, will her future pregnancies be at risk?

The Zika virus only stays in the blood of an infected person for about a week. There is no evidence that the Zika virus can cause birth defects in future pregnancies. If you have recently traveled to an area with ongoing Zika virus transmission and if you are now trying to become pregnant, consult your health care provider.

Is it safe for pregnant or nursing women to use insect repellent?

Using an insect repellent is safe. Pregnant women and those breastfeeding should use an EPA registered insect repellent. Follow the instructions on the product label.



How can you protect yourself from getting the Zika virus?

If you are traveling to areas with active ongoing Zika virus transmission use personal protection measures:

- Protect yourself against mosquito bites both indoors and outdoors.
- Stay in dwellings with intact screened windows and doors, and with air conditioning.
- Use insect repellent safely. Follow the instructions on the product label.
- Wear protective clothing such as long pants, long sleeved shirts, and socks to cover exposed skin.

The Zika virus has been found in semen, so if your partner is from or has traveled to an area where the Zika virus is ongoing, be sure to use condoms during sex throughout your pregnancy.

If you develop symptoms of the Zika virus (fever, joint pain, rash, red eyes) and have recently traveled, call your health care provider immediately.

Frequently Asked Questions About Aerial Mosquito Spraying



Why does the Onondaga County Health Department conduct aerial spraying for mosquitos?

The aerial spray is done in an attempt to interrupt the virus cycle in the mosquito population. Reducing the number of mosquitoes (although it is temporary) can reduce the number of mosquitoes available to transmit virus to humans.

Does the Onondaga County Health Department ever do truck spraying for mosquitos?

Truck spraying is not an effective way to kill mosquitoes in the Cicero Swamp. Spraying while driving around the perimeter of the swamp will not penetrate deep enough into the wooded areas. However, truck spraying is occasionally used in select neighborhood areas as a supplement to the aerial spraying or in areas other than the Cicero Swamp location, when a mosquito virus is found in a trap.

How does the Onondaga County Health Department determine when aerial spraying for mosquitos should occur?

The decision to spray is based on several factors including the number of mosquitoes found in mosquito surveillance traps and the presence of virus in the mosquitoes (West Nile virus and/or Eastern Equine Encephalitis virus). All spraying decisions are made with assistance from the New York State Department of Health (NYSDOH) and the New York State Department of Environmental Conservation (NYSDEC).

How many times per season does the Onondaga County Health Department do aerial spraying for mosquitos?

There is no set number of aerial sprays per season. The number of mosquitos present, along with the presence of virus, will guide decisions about spraying. There may be some years when no aerial spraying is performed due to low mosquito numbers and because there is no virus found in the trapped mosquitos.

What are the pesticides used for aerial mosquito spraying?

The pesticides used for aerial mosquito spraying are Anvil 10+10 ULV or Duet. These products are specifically used for the control of adult mosquitoes in outdoor residential and recreational areas. They contain sumithrin and piperonyl butoxide as active ingredients. Sumithrin is a man-made pyrethroid insecticide that can also be found in other pesticide products used indoors and on pets to control ticks and insects, such as fleas and ants. Product labels can be found at: www.ongov.net/health/mosquitoborne.html

Are the pesticides used for aerial spraying safe for humans and pets?

Pesticides are applied at very low concentrations to control mosquitoes. According to the NYSDOH (www.health.ny.gov/publications/2738/), it is unlikely that adverse health effects will occur as a result of this use for most people. However, some people may experience health effects, therefore, take steps to minimize your exposure to the pesticide by remaining indoors and closing your windows during the spraying.

Are residential areas sprayed?

The aerial spraying does not target any residential areas. There are several residential neighborhoods at the edge of the Cicero Swamp shown on our spray map and although the contractor does not spray directly over these areas, we include them because of possible drift. There are a number of single homes in the spray area and these are also indicated on the spray map.



Protect Yourself from Lyme Disease

**Lyme disease is spread by a bite from an infected deer tick.
Not all ticks are infected, but it is still important
to stay away from ticks.**

In Your Yard:

- Keep ticks away by mowing your lawn often and remove brush. Stack wood neatly and in dry areas.
- Keep playground toys, decks, and patios away from wooded areas.
- Keep deer away by not feeding deer on your property, make a barrier to keep deer from going onto your yard, and get rid of plants that attract deer.

When Outdoors:

- Wear light colored clothes, long pants, long sleeves, and socks. Tuck in your shirt and tuck pant legs into your boots or socks.
- Check for ticks after being outdoors, even when you are in your own yard.
- Bathe or shower (preferably within 2 hours) after coming indoors.
- Wash and dry clothing at a high temperature to kill any ticks that may remain on your clothing.

Use Repellent When Outdoors:

- Follow the label directions. Do not spray repellent in enclosed areas.
- Put a small amount of repellent on your hands and apply it to your child. Do not let children touch repellents. Repellents containing DEET should not be used on children under two months old.
- Use insect repellent containing a 20-30% concentration of DEET on clothes and on bare skin. Use just enough repellent to cover exposed skin.
- Do NOT use repellents containing permethrin directly on your skin.
- Do NOT spray repellent directly on your face, especially near the eyes or mouth. Apply a small amount of repellent near the ears. Do NOT use repellent on cuts, wounds, or on irritated skin.
- Wash your treated skin with soap and water after returning indoors. If you have a reaction to a repellent, wash the treated skin with soap and water right away and call your doctor.

Check for Ticks:

- Do a full body tick check on yourself, your children, and your pets after being outdoors.
- Check your body for ticks especially your scalp, neck, armpits, groin, and ankles.
- Look carefully when checking for ticks because they can be as small as a poppy seed.

How to Remove a Tick:

- Take tweezers to the tick's head or mouth, where it enters the skin.
- Pull the tick firmly up, in a steady motion, away from the skin.
- Clean the bite with soap and water, rubbing alcohol, or hydrogen peroxide.
- Keep a record of the date, time, and where you were bitten.
- Get rid of the tick by placing it in a container of rubbing alcohol.
- Learn more at: www.health.ny.gov/diseases/communicable/lyme/tickfree/



When to Call Your Health Care Provider:

If you had a tick bite and develop any of the symptoms below:

- A skin rash known as "bulls eye" is commonly seen on thighs, groin, trunk, and armpits. It appears from 3-30 days with an average of 7 days. Other symptoms may include fever, fatigue, chills, headache, muscle and joint aches, and swollen lymph nodes.
- Serious long-term complications can range from arthritis to facial palsy, headache, meningitis, neuropathy, impaired memory, and heart rhythm irregularities.

For more information, call 435-3280 or visit:

- www.ongov.net/health/lyme.html
- www.health.ny.gov/diseases/communicable/lyme/
- www.cdc.gov/lyme

HEALTH TIP



**Protect yourself
ALL year, but ticks
are most active from
April to September**



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Protect Yourself from Lyme Disease:

1. Do not walk through brush and high grasses.



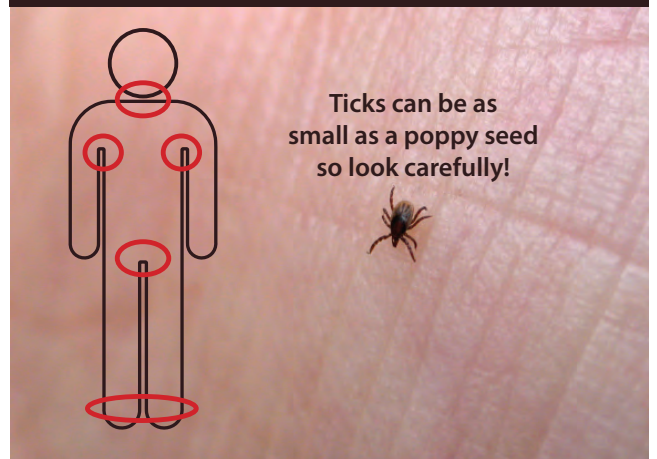
2. Use repellents with DEET or permethrin. Follow the product label instructions.



3. When outdoors, wear long sleeves and pants. Tuck in your shirt and tuck pant legs into boots or socks.



4. Check your body for ticks, especially your neck, armpits, groin, and ankles.



5. Get ticks off using these steps:

- T** Take tweezers to tick's head or mouth, where it enters skin.
- I** In a steady motion, pull the tick firmly up, away from skin.
- C** Clean the bite with soap and water, rubbing alcohol, or hydrogen peroxide.
- K** Keep a record of the date, time, and where you were bitten. Flush the tick down the toilet. Never crush a tick with your fingers.



Mosquito Bite Prevention for Travelers



Mosquitoes spread many types of viruses and parasites that can cause diseases including chikungunya, dengue, Zika, and malaria.

Protect yourself and your family from mosquito bites. Here's how:



Cover up!

Wear long sleeved shirts and pants.



Use an EPA-registered insect repellent.

Follow the label instructions carefully.



If you are travelling with a baby or child:

Do not use insect repellent on babies younger than 2 months of age.

Dress children in clothing that covers arms and legs.



Keep mosquitoes out of your hotel room or lodging.

Look for air conditioning or screens on windows and doors.



Pregnant women should not travel to Zika areas.

If you *must* travel, take extra precautions.

Learn more:

**Zika Virus
Mosquitoes and Disease
Zika Information Line**

https://www.health.ny.gov/diseases/zika_virus/
http://www.health.ny.gov/diseases/west_nile_virus/
1-888-364-4723



**Department
of Health**

KNOW ZIKA VIRUS

**Pregnant women should not travel to Zika areas.
Zika may cause harm to your baby.
If you or your partner *must* travel, you should know:**



Before You Travel

Talk to your health care provider about the risks of Zika.

Learn how to protect yourself from mosquito bites.

When Traveling

Avoid travel to places where Zika is present.

Otherwise, use an insect repellent, wear protective clothes, and stay indoors when possible.

If You Have Traveled

If you are pregnant, you can get tested.

Talk to your health care provider about Zika and testing.

If Your Sex Partner Has Traveled

Zika can be transmitted through unprotected sex.

If you are pregnant and your partner traveled to a Zika area, you should not have sex. If you do have sex, your partner should wear a condom correctly from start to finish.

If you had unprotected sex during pregnancy with a partner who traveled to a Zika area, you can get tested.

Talk to your health care provider about Zika and testing.

Get the FAQs on Zika Virus:

www.health.ny.gov/zika

Hotline: 1-888-364-4723



**Department
of Health**

Zika: The Basics of the Virus and How To Protect Against It



About Zika

Zika virus spreads to people primarily through the bite of an infected *Aedes* species mosquito (*Ae. aegypti* and *Ae. albopictus*). People can also get Zika through sex with a man infected with Zika and it can be spread from a pregnant woman to her fetus. People can protect themselves from mosquito bites and getting Zika through sex. This fact sheet explains who's most affected and why, symptoms and treatment, and how to protect against Zika.

How Zika Spreads

The mosquitoes that carry Zika are aggressive daytime biters, but they can also bite at night. A mosquito becomes infected when it bites a person already infected with Zika. That mosquito can then spread the virus by biting more people.



Zika virus can also spread:

- ◆ During sex with a man infected with Zika.
- ◆ From a pregnant woman to her fetus during pregnancy or around the time of birth.
- ◆ Through blood transfusion (likely but not confirmed).

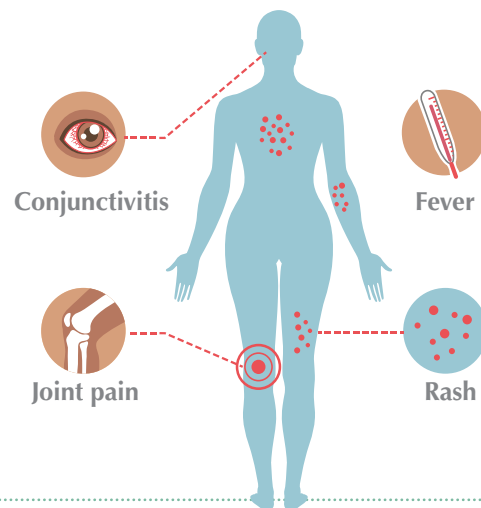
Current Zika Outbreak

Zika outbreaks are currently happening in many countries and territories. The mosquitoes that can become infected with and spread Zika live in many parts of the world, including parts of the United States.

[Specific areas where Zika virus is spreading](#) are often difficult to determine and are likely to change over time. If traveling, please visit the [CDC Travelers' Health website](#) for the most recent travel information.

Zika Symptoms

Many people infected with Zika won't have symptoms or will only have mild symptoms. The most common symptoms are fever, rash, joint pain, or red eyes. Other common symptoms include muscle pain and headache. Symptoms can last for several days to a week. People usually don't get sick enough to go to the hospital, and they very rarely die of Zika. Once a person has been infected with Zika, they are likely to be protected from future infections.



Why Zika is Risky for Some People

Zika infection during pregnancy can cause fetuses to have a birth defect of the brain called microcephaly. Other problems have been detected among fetuses and infants infected with Zika virus before birth, such as defects of the eye, hearing deficits, and impaired growth. There have also been increased reports of Guillain-Barré syndrome, an uncommon sickness of the nervous system, in areas affected by Zika.



How to Prevent Zika

There is no vaccine to prevent Zika. The best way to prevent diseases spread by mosquitoes is to protect yourself and your family from mosquito bites. Here's how:



- ♦ Wear long-sleeved shirts and long pants.
- ♦ Stay in places with air conditioning and window and door screens to keep mosquitoes outside.
- ♦ Take steps to control mosquitoes [inside and outside your home](#).
- ♦ Treat your clothing and gear with permethrin or buy pre-treated items.
- ♦ Use [Environmental Protection Agency \(EPA\)-registered](#) insect repellents. Always follow the product label instructions.
 - » When used as directed, these insect repellents are proven safe and effective even for pregnant and breastfeeding women.
 - » Do not use insect repellents on babies younger than 2 months old.
 - » Do not use products containing oil of lemon eucalyptus or para-menthane-diol on children younger than 3 years old.
- ♦ Mosquito netting can be used to cover babies younger than 2 months old in carriers, strollers, or cribs to protect them from mosquito bites.
- ♦ Sleep under a mosquito bed net if air conditioned or screened rooms are not available or if sleeping outdoors.
- ♦ [Prevent sexual transmission of Zika by using condoms or not having sex.](#)



What to do if You Have Zika

There is no specific medicine to treat Zika.

Treat the symptoms:

- ♦ Get plenty of rest.
- ♦ Drink fluids to prevent dehydration.
- ♦ Take medicine such as acetaminophen to reduce fever and pain.
- ♦ Do not take aspirin or other non-steroidal anti-inflammatory drugs.
- ♦ If you are taking medicine for another medical condition, talk to your healthcare provider before taking additional medication.



To help prevent others from getting sick, strictly follow steps to prevent mosquito bites during the first week of illness.



CDC's Division of Vector-Borne Diseases



DVBD Priority Diseases

- Dengue hemorrhagic fever
- Ehrlichiosis & Anaplasmosis
- Lyme disease
- Plague
- Q fever
- Rocky Mountain spotted fever
- Tularemia
- West Nile virus and other mosquito-borne viruses

www.cdc.gov/ncezid/dvbd

Key DVBD Functions

- Lead agency for prevention and response to viral and bacterial vector-borne disease.
- Coordinates nationwide disease surveillance. Identifies and responds to changes in disease patterns.
- Serves as national diagnostic reference laboratory, supporting state laboratory networks to quickly identify the cause of epidemics.
- Responds to vector-borne disease epidemics with science-based guidance and leadership.

Billions of people around the world, including Americans, are at risk from viruses and bacteria transmitted by mosquitoes, ticks, fleas and other vectors. The most widely known vector-borne diseases in the U. S. are West Nile virus, Lyme disease and Rocky Mountain spotted fever. Dengue virus, a major health problem in Puerto Rico, infects as many as 400 million worldwide each year, some fatally. As rapid global travel and changing land use increase, the risk of rare or new vector-borne pathogens to emerge and cross borders also increases. For example, West Nile virus, which was unknown in the U. S. before 1999, infected 5,674 Americans in 2012.

Vector-borne diseases are especially difficult to predict, prevent or control. Only a few have vaccines. Mosquitoes and ticks are notoriously difficult to reach and often develop resistance to insecticides. Adding to the complexity, almost all vector-borne pathogens are zoonoses, meaning they can live in animals as well as in humans.

Our Role in Preventing Vector-Borne Diseases

The Division of Vector-Borne Diseases (DVBD) is a national and international leader in the prevention and control of infections from vector-borne viruses and bacteria. Our strength is a uniquely skilled staff that includes physicians, veterinarians, entomologists, zoologists, epidemiologists, molecular biologists, and laboratory diagnosticians. DVBD's core vector-borne disease activities include:

- ◇ Develop cutting-edge laboratory technology for the rapid identification and diagnosis of emerging pathogens.
- ◇ Develop innovative vaccines and vaccine implementation strategies.
- ◇ Train and assist front-line disease surveillance and response staff.
- ◇ Develop clinician education programs, such as a dengue case management course now required for medical licensure in Puerto Rico.
- ◇ Detect mosquito-borne diseases through the ArboNET surveillance system and tick-borne diseases through the TickNET system. Both systems further DVBD's surveillance, research, and prevention efforts in collaboration with state and local health departments.
- ◇ Closely collaborate with state, local, and tribal health departments, industry, and international partners, such as the World Health Organization, to rapidly detect and implement timely, effective responses to known and newly identified pathogens.

Responding to Epidemics and Assessing Human Risk

DVBD both responds to epidemics and constantly strives to develop better tools to predict, prevent and control risk. We have the unique capability, expertise, and mandate to fill this role at a time when vector-borne disease are emerging and spreading. A few recent emergency responses are:

- Q fever infections associated with a goat farm in Washington State
- Dengue in the Marshall Islands, Kenya, and Tanzania
- Yellow fever epidemic in Uganda
- Bacterial infections among inmates at a Louisiana prison
- Assessment of dengue among American missionaries returning from Haiti
- Rocky Mountain spotted fever, a tick-borne disease, in the Navajo Nation
- Evaluation of adult mosquito control during a West Nile virus epidemic in Texas



*As a division of CDC,
DVBD reduces the
threat and burden
from vector-borne
diseases everywhere.*

DVBD Leadership

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Assistant Director for Policy
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SPartridge@cdc.gov

DVBD Locations

Fort Collins, Colorado

- Office of the Director
www.cdc.gov/ncepid/dvbd
- Arboviral Diseases Branch
www.cdc.gov/westnile
- Bacterial Diseases Branch
www.cdc.gov/lyme

3156 Rampart Road
Foothills Campus
Fort Collins, CO 80521

San Juan, Puerto Rico

- Dengue Branch
www.cdc.gov/dengue

2 Calle Cañada
San Juan, Puerto Rico 00920-3860

Atlanta, Georgia

- Rickettsial Zoonoses Branch
www.cdc.gov/RMSF

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General Inquiries

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Leading the Way with Innovative Research

DVBD research focuses on prevention and control strategies that can reach the targeted disease or vector at multiple levels while being mindful of cost-effective delivery that is acceptable to the public and cognizant of the world's ecology. Current research includes vaccine development, vector control, and public and healthcare provider education.

A Gene that Stops Lyme Disease Infection

DVBD discovered a gene that, when inactivated, prevents the bacteria that causes Lyme disease from producing an infection in the host animal following a tick bite. The finding was the first demonstration of a gene from the Lyme disease bacteria that is essential to the transmission from ticks to rodents. Understanding how the organism functions in ticks and mammals may help identify new targets for vaccines and other therapeutics.

Plague Bedside Test Saves Lives

In October 2012, a Ugandan farmer experienced the sudden onset of a very high fever and a painful swelling in his left groin. A traditional healer immediately referred the man to a local clinic where a sample was taken and tested with a diagnostic “dipstick” test for plague developed by CDC’s laboratory in Colorado. Within 15 minutes the test yielded a positive result. The patient was promptly enrolled in a CDC-sponsored trial evaluating the effectiveness of ciprofloxacin for treatment of plague. The patient received the study drug, and within a day his fever had resolved. Within three days he was back working in his field, growing food to support his wife and young children. This life-saving test is inexpensive to produce and yields results in hours, not days.

Promising Dengue Vaccine

Dengue is the most common arthropod-borne virus in the world. DVBD has partnered with Inviragen, Inc., a Colorado-based company, to manufacture a dengue vaccine candidate named DENVax. The vaccine is showing promising results in Phase II human clinical trials taking place in Puerto Rico, Colombia, Singapore, and Thailand. If the Phase II trial continues to proceed well, they will begin studies to test the ability of the dengue vaccine to prevent illness in late 2013/early 2014.

Lyme Disease Bait Boxes Commercially Available

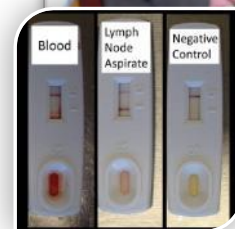
DVBD scientists pioneered the development of eco-friendly “bait boxes” to control the spread of Lyme disease from rodents to ticks by applying a tiny amount of pesticide to the rodent. These bait boxes are placed in residential yards and other populated areas and can decrease the number of Lyme-disease carrying ticks that threaten humans.

CDC Patents Plant-Based Repellent and Insecticide

DVBD and academic partners are inventors on patents for nootkatone – a natural compound found in the essential oil of Alaska yellow cedar trees, citrus fruits and herbs. Studies show nootkatone to be an effective repellent and insecticide. CDC has licensing agreements with commercial partners to investigate development of nootkatone products as insecticides and repellents.



Clinicians caring
for a plague patient



Dipstick test used to rapidly
test patient lymph node
samples for plague



Antibiotic bait boxes became
available to the public in 2011 and
are registered by EPA in 22 states

What precautions should be taken by residents in the spray area?

If you live in the spray area, stay indoors during spraying and your keep windows closed for one hour after the spraying is complete. Keep your pets indoors if possible. Set your window air conditioners to circulate indoor air. It is safe to use your central air conditioning. Remove children's toys that are outdoors, any outdoor furniture, and clothes from outdoor clotheslines. If you are driving during the spraying, close your car window and car vents. After the spraying, rinse your garden vegetables before eating. If clothes or toys were left outdoors during spraying, wash them thoroughly with soap and water and launder the clothes before wearing.

Why does aerial spraying sometimes get postponed due to weather?

Certain circumstances may reduce the effectiveness and accuracy of the application such as wind over 10 mph or rain occurring during spraying or soon after. The permit granted to us by the NYSDEC specifically states that spraying cannot occur if there is a fifty percent or greater chance of a rain in the forecast during the scheduled time of spraying, or within four hours after. The reason for this is to prevent pesticides from getting into wetlands, near-by areas, and bodies of water in storm water runoff. Also, according to the product label, air temperature during application must be at least 50 degrees F.

Are there other factors as to why spraying may be postponed?

In addition to weather conditions, spraying may be postponed due to mechanical failure of the plane or other factors out of the spray contractor's control.

What company is doing the aerial spraying for Onondaga County?

Currently, the company doing the aerial spraying is Clarke Environmental Mosquito Management Inc.

Does the Onondaga County Health Department do aerial spraying for "comfort" only?

The Health Department does not spray for comfort. Spraying will only occur if virus is present or if the number of mosquitoes and conditions are present which would indicate a public health threat.

After the aerial spraying, do I still need to protect myself from mosquitoes?

Yes, always use personal protection when you are outdoors throughout the season until there is a frost by covering up and using mosquito repellent. Also, continue to reduce mosquito breeding grounds by getting rid of standing water on your property. To learn more visit: www.ongov.net/health/mosquitoborne.html

Do you have to wait until you find evidence of West Nile virus or EEE virus before considering aerial spraying?

We do not have to wait to find evidence of disease before spraying. Our NYSDEC permit allows us to consider spraying either when virus is found in mosquitoes or "when there is a substantial peak in mosquito activity earlier in the season which generally precedes an upsurge in virus activity and increases the potential for occurrence of human cases of mosquito-borne disease".

How do you inform the public that spraying will happen?

Residents who live in the spray area will be contacted by phone through the Reverse 911 system. Spraying will also be announced through the media (television, radio, newspaper) as well as on the Health Department website www.ongov.net/health and Facebook page: www.facebook.com/ongovhealth. A map of the spray area can be found at: www.ongov.net/health/documents/SprayMapCicero.pdf

How can I get more information or details about the pesticides that are used?

You may call our Mosquito Control office at 435-1649 for more information or for a copy of the pesticide labels. Product labels can also be found at: www.ongov.net/health/mosquitoborne.html

Sources:

New York State Department of Health www.health.ny.gov/

New York State Department of Environmental Conservation www.dec.ny.gov/

WHAT WE KNOW



AND WHAT WE DON'T KNOW.



What we know



Zika can be passed from a pregnant woman to her fetus.



Infection during pregnancy can cause certain birth defects.



Zika is spread mostly by the bite of an infected *Aedes* species mosquito.

These mosquitoes are aggressive daytime biters. They can also bite at night.



Zika is not currently found in the continental US. The mosquitoes that can carry Zika are found in some areas of the US.



Because the mosquitoes that spread Zika virus are found throughout the tropics, outbreaks will likely continue.



There is no vaccine or medicine for Zika.

What we don't know



If there's a safe time during your pregnancy to travel to an area with Zika



If you do travel and are bitten

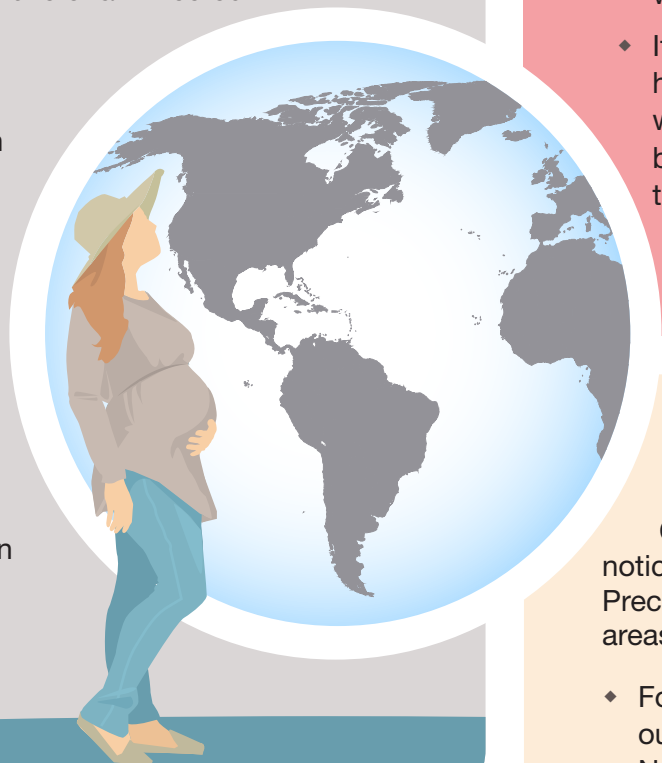
- How likely you are to get Zika
- How likely it is that your baby will have birth defects from the infection

PREGNANT? Read this before you travel



What we know about Zika

- ◆ Zika can be passed from a pregnant woman to her fetus.
- ◆ Zika infection during pregnancy can cause certain birth defects.
- ◆ Zika is spread mostly by the bite of an infected *Aedes* species mosquito.
 - » These mosquitoes are aggressive daytime biters. They can also bite at night.
- ◆ There has been no local transmission of Zika in the continental US.
- ◆ There is no vaccine to prevent or medicine to treat Zika.
- ◆ Zika can be spread by a man to his sex partners.



What we don't know about Zika

- ◆ If there's a safe time during your pregnancy to travel to an area with Zika.
- ◆ If you do travel and are infected, how likely it is that the virus will infect your fetus and if your baby will have birth defects from the infection.

Travel Notice

CDC has issued a travel notice (Level 2-Practice Enhanced Precautions) for people traveling to areas where Zika virus is spreading.

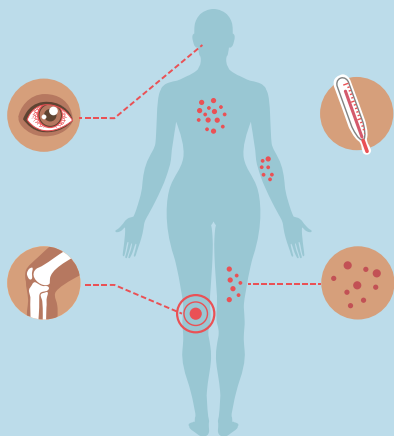
- ◆ For a current list of places with Zika outbreaks, see CDC's Travel Health Notices: <http://wwwnc.cdc.gov/travel/page/zika-travel-information>
- ◆ This notice follows reports in Brazil of microcephaly in babies of mothers who were infected with Zika virus while pregnant.

Symptoms of Zika

Many people with Zika won't even know they have it. The illness is usually mild with symptoms lasting for several days to a week.

The most common symptoms of Zika are:

- ◆ Fever
- ◆ Rash
- ◆ Joint Pain
- ◆ Conjunctivitis (red eyes)



U.S. Department of
Health and Human Services
Centers for Disease
Control and Prevention

CDC recommends special precautions for pregnant women and women trying to become pregnant

Pregnant?

Delay travel to areas with Zika.

Pregnant women and their male partners should strictly follow steps to prevent mosquito bites.

If you have a male sex partner who lives in or travels to an area with Zika, you should use condoms the right way every time you have sex, or do not have sex during the pregnancy.

If you develop the symptoms of Zika, see a healthcare provider right away for testing.



Trying to become pregnant?

Women trying to become pregnant and their male partners should strictly follow steps to prevent mosquito bites.

Talk to your healthcare provider about plans to become pregnant.

Your Best Protection: Prevent Mosquito Bites

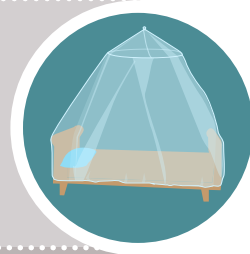
Clothing

- ♦ Wear long-sleeved shirts and long pants.
- ♦ Treat clothing and gear with permethrin or purchase permethrin-treated items.
 - » Treated clothing remains protective after multiple washings. See product information to learn how long the protection will last.
 - » If treating items yourself, follow the product instructions carefully.
- ♦ Do NOT use permethrin products directly on skin. They are intended to treat clothing.



Indoor Protection

- ♦ Stay in places with air conditioning or that use window and door screens to keep mosquitoes outside.
- ♦ Sleep under a mosquito bed net if air conditioned or screened rooms are not available or if sleeping outdoors.



Repellent

Use Environmental Protection Agency (EPA)-registered insect repellents. When used as directed, these insect repellents are safe and effective for pregnant and breastfeeding women.

- ♦ Always follow the product label instructions.
- ♦ Reapply as directed.
- ♦ Do not spray repellent on the skin under clothing.
- ♦ If you are also using sunscreen, apply sunscreen before applying insect repellent.
- ♦ Use a repellent with one of the following active ingredients: DEET, picaridin, IR3535, and oil of lemon eucalyptus or para-menthan-diol.



STAY HEALTHY ON THE ROAD TO RIO PROTECT YOURSELF FROM ZIKA



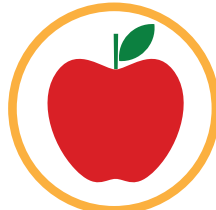
Be Prepared

- See a doctor 4-6 weeks before travel
- Get recommended vaccines and medicines
- Enroll in the Smart Traveler Enrollment Program (STEP)



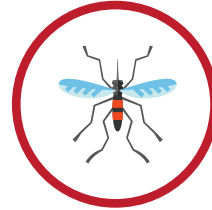
Stay Safe

- Monitor warnings and alerts from the US Department of State.
- Don't drink too much alcohol and don't use drugs.
- Ride only in marked taxis that have seatbelts.
- Use condoms if you have sex (vaginal, anal, or oral).



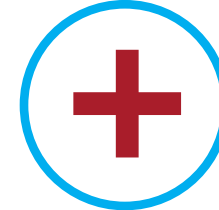
Eat & Drink Smart

- Eat food that is cooked and served hot.
- Eat raw fruits and vegetables only if they can be peeled or washed in clean water.
- Don't drink tap water, drinks with ice, or drinks diluted with tap water.
- Download our "Can I Eat This?" app.



Prevent Bug Bites

- Use insect repellent on exposed skin. **It works!** Look for the following active ingredients: DEET, picaridin, IR3535, OLE, PMD
- Wear long-sleeved shirts and long pants when possible.
- Use permethrin-treated gear and clothing.
- Stay in air conditioned or screened-in rooms.



Stay Healthy and Help Protect Others After Your Trip

- See a doctor if you get sick and mention your travel.
- Prevent mosquito bites for 3 weeks to avoid spreading Zika.
- Men: Protect your sex partners after travel. Use condoms for at least 8 weeks, or for at least 6 months if you get sick. If your partner is pregnant, use condoms throughout her pregnancy or do not have sex.



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For more information visit www.cdc.gov/travel