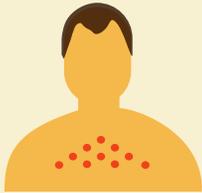


## SYMPTOMS OF MOSQUITO-BORNE ILLNESSES



### EASTERN EQUINE ENCEPHALITIS

EEE symptoms include an abrupt onset of chills, fever, generally unhealthy feeling, joint pain, and muscle pain. Signs and symptoms in patients with encephalitis (brain inflammation) are fever, headache, irritability, restlessness, drowsiness, loss of appetite, vomiting, diarrhea, bluish discoloration, convulsions, and coma.



### WEST NILE VIRUS

Severe West Nile Virus symptoms can include high fever, headache, neck stiffness, stupor, disorientation, coma, tremors, convulsions, muscle weakness, vision loss, numbness, and paralysis. Milder symptoms can include fever, headache, body aches, nausea, vomiting, swollen lymph glands, or rash on the chest, stomach, and back.



### ZIKA VIRUS

Common symptoms of Zika include fever, rash, joint pain, headache, muscle pain, and pink eye. Zika can also be spread from pregnant mothers to their unborn children, and can cause birth defects.

## AT-RISK POPULATIONS



**Anyone who works or plays outdoors, such as athletes, hikers, gardeners, and landscapers**



**Elderly**



**Pregnant women (Zika virus)**



**Children**



**Anyone with a weakened immune system**



**Travelers (Zika virus)**

EVERYTHING YOU  
NEED TO KNOW ABOUT

MOSQUITOES

&

TICKS



# MOSQUITOES

Climate change can cause heavier precipitation, longer warm seasons, and warmer winters. This can make the environment more hospitable to certain types of mosquitoes. Mosquitoes can carry or spread many diseases, including West Nile Virus (WNV), Eastern Equine Encephalitis (EEE), and Zika Virus. The species of mosquitoes that carry WNV and EEE are found in Rhode Island and bite until the first heavy frost (usually the end of October). The species of mosquitoes that carry Zika, chikungunya, dengue fever, malaria, and Yellow Fever are not established in Rhode Island right now. Rhode Islanders traveling to other areas can come in contact with these mosquitoes.

## PROJECTIONS

### Climate change is expected to influence mosquitoes and the viruses they carry.

Changes in precipitation and temperature may alter the primary habitat and range of mosquitoes, and impact survival and spread of viruses transmitted from mosquitoes to humans.

West Nile Virus and Eastern Equine Encephalitis may become more common with climate change.

## WHAT YOU CAN DO



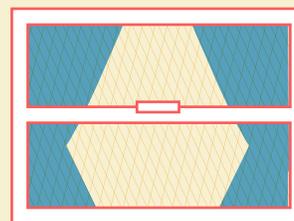
### CLOTHING

When spending time outside during warm weather, wear long-sleeved shirts/pants whenever possible, especially if outside during dawn or dusk.



### DUMP STANDING WATER

Remove any water from unused swimming pools, wading pools, boats, planters, trash and recycling bins, tires, and anything else that collects water, and cover them.



### SCREENS

Put screens on windows and doors. Fix screens that have holes.



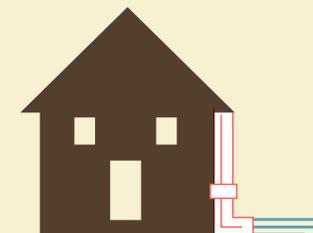
### NETTING

Put insect netting over strollers and playpens.



### BUG SPRAY

Use EPA-approved bug spray with one of the following active ingredients: DEET (20-30% strength), picaridin, IR3535, and oil of lemon eucalyptus or para-menthane-diol. Do not use DEET on infants.



### CLEAN GUTTERS

Remove anything around your house and yard that collects water. Clean gutters and downspouts to ensure proper drainage.

## TICK-BORNE ILLNESS AND SYMPTOMS



### TICKS CAN CARRY

Lyme disease, anaplasmosis, ehrlichiosis, babesiosis, powassan and Rocky Mountain spotted fever (rare in Rhode Island).

### COMMON SYMPTOMS

can include tiredness, body/muscle aches, joint pain, fever, rash, stiff neck, and facial paralysis. The type and severity of symptoms vary with the specific disease.

### SYMPTOMS CAN START

as soon as a few days after being bitten or as late as a few months after a tick bite. Some people may have no symptoms at all.

### EARLY DIAGNOSIS

is helpful in successfully treating tick-borne diseases. It is important to contact your healthcare provider if you are experiencing any of these symptoms.

## TICKS

Ticks are found throughout Rhode Island. Tick-borne diseases are transmitted through the bite of an infected tick. You are most likely to be bitten by a tick in the spring, summer, or fall; however, ticks can survive in the winter if temperatures are above freezing. Warmer winters could increase the number of ticks and the risk for spreading tickborne diseases like Lyme disease, babesiosis, anaplasmosis, ehrlichiosis, Rocky Mountain spotted fever, and Powassan.

Ticks can be infected with bacteria, viruses, or parasites. If you are bitten by an infected tick, you may become infected. Ticks usually are found in tall grass and leafy areas and often attach themselves to you in your armpits, groin, waistline, or in your hair.

## AT-RISK POPULATIONS

 People who spend recreational time outdoors

 Outdoor workers

 Pet owners

 Gardeners

## DATA AND PROJECTIONS

900+

### CASES PER YEAR

Lyme disease is extremely common in Rhode Island.



Rhode Island has the fourth-highest rate of Lyme disease in the country.

## FOR MORE INFORMATION:

Everything You Need to Know About Mosquitoes & Ticks is part of the Rhode Island Department of Health's series, *Climate Change and Your Health: A Guide for Rhode Islanders*. To read the full booklet, visit [www.health.ri.gov/climate\\_change](http://www.health.ri.gov/climate_change).

[www.health.ri.gov/ticks](http://www.health.ri.gov/ticks)

[www.health.ri.gov/mosquito](http://www.health.ri.gov/mosquito)

RIDOH Health Information Line: 401-222-5960



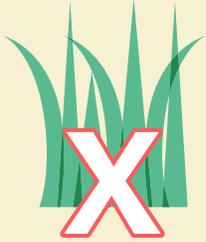
Changing temperature and precipitation patterns could make conditions more hospitable for ticks.



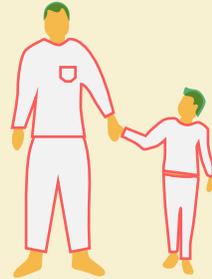
Washington County has the highest rate of Lyme disease in the state; nearly twice the rate of Newport and Bristol counties.

## WHAT YOU CAN DO

### AVOID DIRECT CONTACT WITH TICKS



Avoid wooded and brushy areas with high grass and leaf litter and walk in the center of trails.



Wear long pants and long sleeves whenever possible. Wear light colored clothing so you can see the ticks more easily.



Tuck your pants into your socks so ticks don't crawl under your clothes.

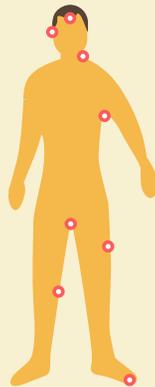


Use products that contain permethrin on shoes and clothing.



When outdoors, use repellents containing 20% DEET, picaridin, IR3535, some oil of lemon eucalyptus or para-menthane-diol. Follow the directions on the package.

**Where to look:**  
Along your hairline  
Ears  
Back of your neck  
Armpits  
Groin  
Behind the knees  
Legs  
Between your toes



**Deer Tick actual size:**  
Nymph ● Adult Male ● Adult Female ●

## WHAT YOU CAN DO

### CHECK FOR TICKS



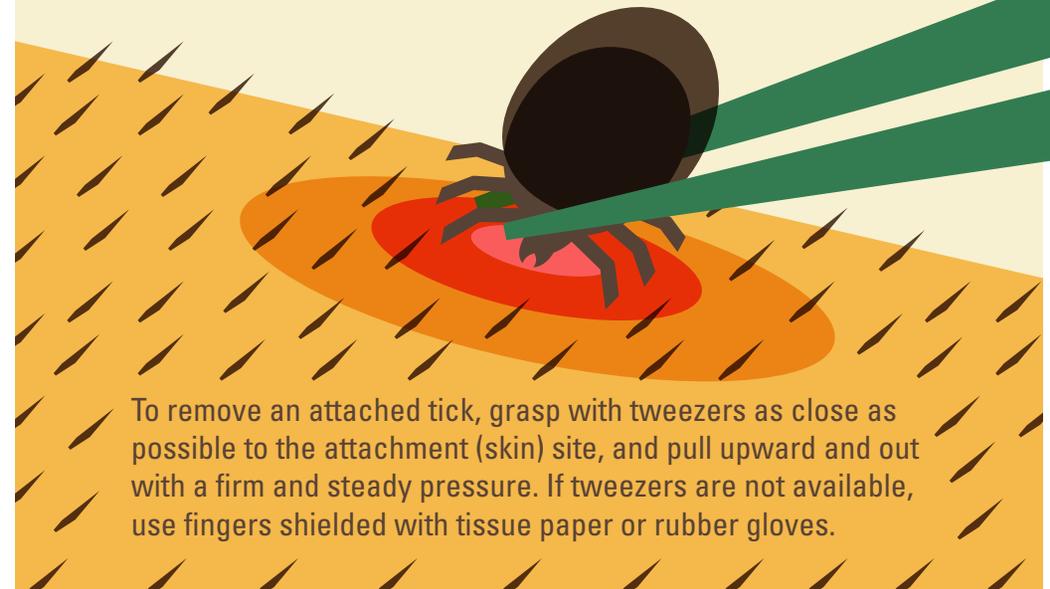
Bathe or shower as soon as possible after coming indoors (preferably within 2 hours) to wash off and more easily find ticks that are crawling on you.

Conduct a full-body tick check using a hand-held or full-length mirror to view all parts of your body upon return from tick-infested areas.



Examine gear and pets. Ticks can ride into the home on clothing and pets, then attach to a person later, so carefully examine pets, coats, and day packs.

### REMOVE TICKS FROM YOUR BODY



To remove an attached tick, grasp with tweezers as close as possible to the attachment (skin) site, and pull upward and out with a firm and steady pressure. If tweezers are not available, use fingers shielded with tissue paper or rubber gloves.