



# Ticks, Lyme Disease and West Nile Virus Tool Kit for LTCH/RH/CLS - RVH IPAC Hub

Ashley Allan RN, BScN, CIC - June 2023

# TICK TALK

If you spend time outdoors (forests, wooded areas, tall grass and/or shrubs) for work or play, you should be aware of ticks and Lyme disease.

## What are Ticks?

Ticks are parasites that feed on warm-blooded hosts by biting them. **Blacklegged ticks** are a species of tick that is known to carry Lyme disease. Ticks are small and hard to see. They attach themselves to humans and animals and feed on their blood. They can range in size depending on how long they have been feeding.



Adult female blacklegged tick at various stages of feeding.

# HOW TO REMOVE A TICK

Following the steps below will help you to safely remove a tick from your body:

**Do not crush or damage the tick** because it could cause Lyme bacteria to pass from the tick into your bloodstream.

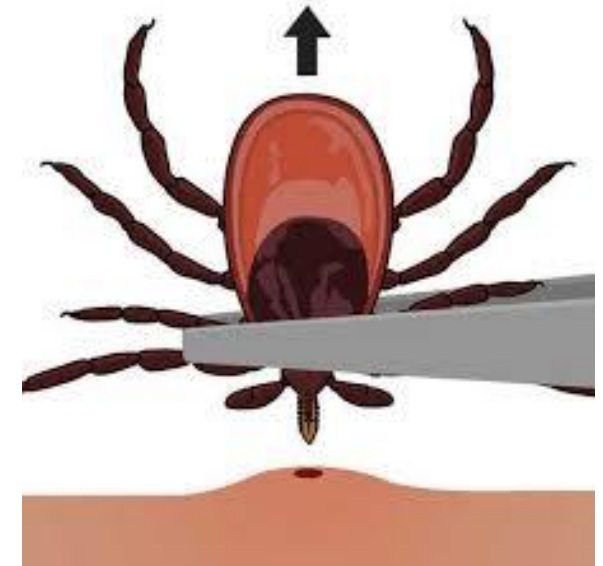
1. Use fine-tipped tweezers and grasp the tick as close to your skin as possible.

2. Pull the tick straight out, gently but firmly.

- **Do not** jerk or twist the tweezers while pulling the tick out.
- **Do not** squeeze the tick – you might crush it.

3. Once you have removed a tick, wash your skin with soap and water and then disinfect your skin and your hands with rubbing alcohol or an iodine swab.

4. Before disposing of the tick, call or check the website of your **local public health** unit to get advice on how to identify the tick. You can also submit a photo of the tick to **etick.ca** for identification.



# LYME DISEASE

## What is Lyme Disease?

Lyme disease is caused by the bacteria *Borrelia burgdorferi*. Lyme disease is a vector-borne disease transmitted to humans (and pets) through a bite of an infected blacklegged tick. Lyme disease is the most common vector-borne disease in Canada

There are many species of ticks and not all ticks carry the bacteria that causes Lyme disease. However, it may only take one bite from an infected tick to make you sick.

An infected blacklegged tick needs to **attach/feed for at least 24 hours to transmit Lyme disease to a person**. You cannot tell if a tick is infected with Lyme disease just by looking at it, therefore treat all blacklegged ticks the same.

Lyme disease is **NOT** known to have human-to-human transmission.

# LYME DISEASE SYMPTOMS

## Lyme Disease Symptoms:

### Early Symptoms:

An expanding skin rash (most commonly reported) that typically begins at the site of the tick bite called **erythema migrans**. It slowly grows over several days, and can be:

- Circular or oval-shaped
- Look like a target or bull's eye

Other early signs and symptoms include fever, chills, fatigue, headache, swollen lymph nodes, and/or muscle and joint aches.

### Late Symptoms:

Later symptoms of Lyme disease can appear days to months after an infected tick bite, and may include more rashes, dizziness, severe headaches, migratory pain that spreads (in joints, bones, muscles, tendons), arthritis, and memory loss.



# LYME DISEASE DIAGNOSIS AND TREATMENT

## Diagnosis:

Diagnosing Lyme disease can be challenging as symptoms vary from person to person. Symptoms of Lyme disease can also be similar to other illnesses. A diagnosis of Lyme disease is based on:

- Symptoms
- Travel history
- Blood tests
- Exposure to blacklegged ticks



## Treatment:

Lyme disease is treated with antibiotics. The earlier you receive treatment for Lyme disease, the greater the chance of a successful recovery.

# LYME DISEASE RISK AREAS IN ONTARIO

## Know Your Ticks

### American Dog Tick



does **Not** transmit Lyme disease

### Blacklegged Tick (Deer Tick)



can transmit Lyme disease



# WEST NILE VIRUS (WNV)

WNV is a viral infection that is spread by mosquitos. Cases of WNV occur during mosquito season, which starts in the spring and continues through fall.

- **Most people** infected with WNV do not develop any symptoms.
- About 1 in 5 people who are infected with WNV develop a **Febrile illness**. Other symptoms such as headache, body aches, joint pain, vomiting, diarrhea, or rash may occur. Most people with febrile illness recover completely, but fatigue and weakness can last for weeks or months.
- About 1 in 150 people who are infected with WNV develop a **severe illness** affecting the central nervous system such as encephalitis (inflammation of the brain) or meningitis (inflammation of the membranes that surround the brain and spinal cord).

## Did you know?

West Nile Virus (WNV) was first isolated in a woman in the West Nile district of Uganda in 1937. Human infections from WNV have been reported in many countries around the World for over 50 years.



# WEST NILE VIRUS (CONT.)

## Transmission:

Human infection is **most often** the result of bites from infected mosquitoes. Mosquitoes become infected when they feed on infected birds (reservoir host). The virus eventually gets into the mosquito's salivary glands where it can be injected into humans and animals and multiply/ potentially cause illness.

## Treatment:

There are no vaccines or medications to treat WNV. Treatment is supportive for patients with severe illness and can involve hospitalization, intravenous fluids, respiratory support, and/or prevention of secondary infections.

# WEST NILE VIRUS (CONT.)

## Prevention:

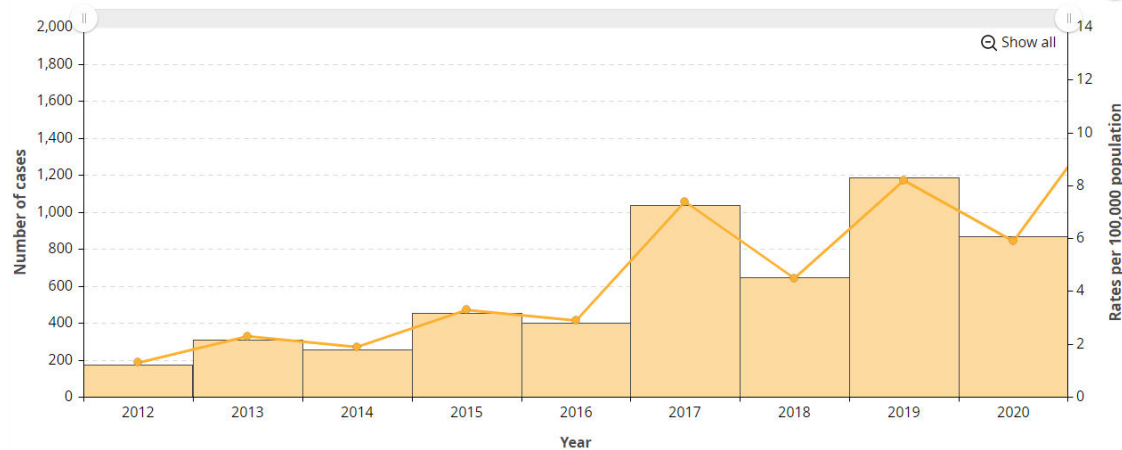
- Wear insect repellent
- Wearing long sleeved shirts and long pants to prevent mosquito bites.
- Tuck shirt/socks into pants to minimize exposed skin.
- Ensuring doors/windows remain closed at home or and while camping (if the window does not have a an insect screen).



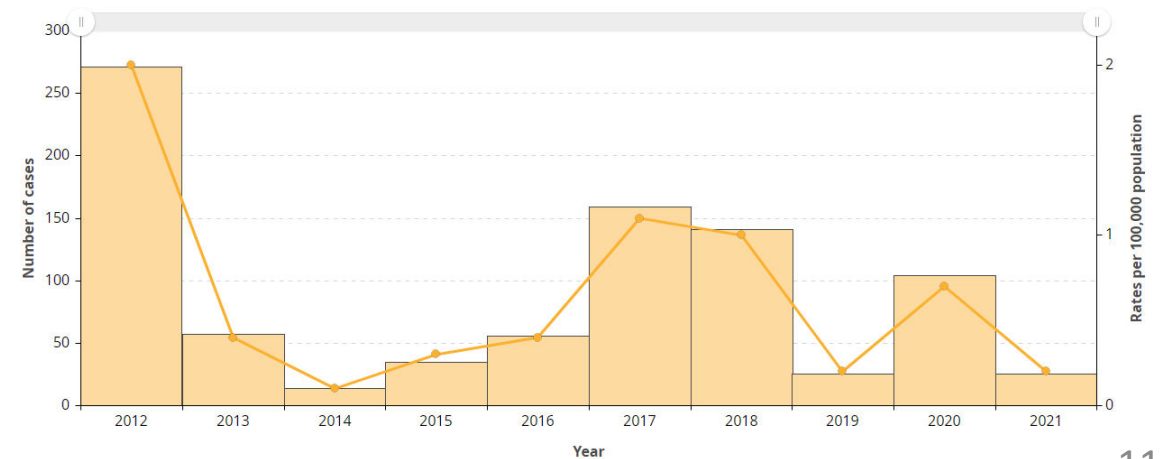
# SURVEILLANCE AND REPORTING

**Lyme disease** and **West Nile virus illness** are designated as diseases of public health significance and are reportable under the *Ontario Health Protection and Promotion Act*.

### Cases and rates of Lyme Disease in Ontario



### Cases and rates of West Nile virus illness in Ontario



# QUESTIONS

Please contact your RVH IPAC Hub liaison.

Ashley Allan

email: [allana@rvh.on.ca](mailto:allana@rvh.on.ca)

Jessie Must

email: [mustj@rvh.on.ca](mailto:mustj@rvh.on.ca)

Mustansir Diwan

email: [diwanm@rvh.on.ca](mailto:diwanm@rvh.on.ca)

Lauren Parsons

email: [parsonsl@rvh.on.ca](mailto:parsonsl@rvh.on.ca)



# REFERENCES

Government of Canada. Lyme Disease: How to Remove and Identify a Tick. Available at: [Lyme disease: How to remove and identify a tick - Canada.ca](#). Accessed May 24, 2023.

Ministry of Health. Lyme Disease. Available at: [Lyme disease | ontario.ca](#). Accessed May 23, 2023.

Public Health Ontario. Infectious Disease Trends in Ontario. Available at: [Infectious Disease Trends in Ontario | Public Health Ontario](#). Accessed May 26, 2023.

Public Health Ontario. West Nile Virus. Available at: [West Nile Virus | Public Health Ontario](#). Accessed May 24, 2023.

Simcoe Muskoka District Health Unit. Lyme Disease. Available at: [Lyme Disease \(simcoemuskokahealth.org\)](#). Accessed May 24, 2023.

World Health Organization. West Nile Virus. Available at: [West Nile virus \(who.int\)](#). Accessed May 25, 2023.