

## BACKGROUND

Powassan virus is spread to people through the bite of an infected deer tick (*Ixodes scapularis*). The first reported case in Pennsylvania occurred in 2011, and although still rare, the number of Powassan cases has increased in recent years. Most cases in the United States occur in the northeast and Great Lakes regions from spring through fall when ticks are most active.

## WHO DOES THE ISSUE IMPACT?

Everyone in Pennsylvania should use tick prevention methods since the deer tick is found in all 67 counties and potentially carries other infectious diseases besides Powassan including Lyme Disease, anaplasmosis, and babesiosis.

## COMPLICATIONS

Powassan virus can cause encephalitis (infection of brain) or meningitis (infection of the membranes around the brain and spinal cord). Symptoms of severe disease include confusion, loss of coordination, difficulty speaking and seizures. Approximately one out of ten people with severe disease die. Of those who survive severe disease, approximately half have long-term health problems such as recurring headaches, loss of muscle mass and strength, and memory problems.

## SIGNS AND SYMPTOMS

Many people infected with Powassan do not have symptoms, but for those that develop illness, initial symptoms can include fever, headache, vomiting, and weakness. The time from tick bite to feeling sick ranges from one week to one month.

## CAUSES AND TRANSMISSION

Transmission of Powassan from an infected deer tick occurs after it has been attached and feeding. Ticks become infected when they feed on groundhogs, squirrels, mice or other rodents that have the virus in their blood. Prevent getting sick with Powassan virus by preventing tick bites.

## TESTS AND DIAGNOSIS

The symptoms of Powassan are similar to the mosquito-borne virus, West Nile. Diagnosis is based on clinical signs and symptoms and can be confirmed using specialized laboratory tests. A health care provider will need to collect a blood sample from the patient and have it tested to look for antibodies to Powassan virus or to detect Powassan virus RNA (viral particles).

## TREATMENTS

Unfortunately, there is no vaccine to prevent or medicine to treat Powassan virus. Clinical management is supportive; patients with severe symptoms often require pain control for headaches and rehydration for associated nausea and vomiting.

## WHAT CAN YOU DO?

To prevent Powassan:

- The risk of being bitten by an infected tick can be decreased by using the following precautions:
  - Use insect repellent containing low concentrations (10 to 30%) of diethyltoluamide (DEET) on clothing and exposed skin;
    - Apply DEET sparingly on exposed skin. Do not apply to the face. Do not use under clothing.
    - Do not use DEET on the hands of young children. Avoid applying to areas around the eyes and mouth.
    - Do not use DEET over cuts, wounds or irritated skin. Wash treated skin with soap and water after returning indoors, and wash treated clothing.
    - Avoid spraying in enclosed areas. Do not use DEET near food.
  - Avoid tick-infested areas;
  - Wear light colored clothing so ticks can be spotted more easily;
  - Tuck pant legs into socks or boots, and shirts into pants;
  - Tape the areas where pants and socks meet;
  - Wear a hat, long sleeved shirt and long pants for added protection;
  - Walk in the center of trails to avoid overhanging brush; and
  - Check yourself, family members and pets for ticks after leaving potentially tick infested areas and promptly remove any ticks detected.

If you find a tick:

- If you find a tick attached to your skin, there is no need to panic. There are several tick removal devices on the market, but a plain set of fine-tipped tweezers will remove a tick quite effectively. Prompt and proper tick removal is very important for preventing possible disease transmission.  
(Please see [http://www.cdc.gov/ticks/removing\\_a\\_tick.html](http://www.cdc.gov/ticks/removing_a_tick.html))
  - Use fine-tipped tweezers and protect your fingers with a tissue, paper towel, or latex gloves. Avoid removing ticks with your bare hands.
  - Grasp the tick as close to the skin surface as possible and pull upward with steady, even pressure. Don't twist or jerk the tick; this can cause the mouth-parts to break off and remain in the skin. If this happens, remove the mouth-parts with tweezers. If you are unable to remove the mouth easily with clean tweezers, leave it alone and let the skin heal.
  - After removing the tick, thoroughly disinfect the bite and your hands with rubbing alcohol, an iodine scrub, or soap and water.
  - Avoid folklore remedies such as "painting" the tick with nail polish or petroleum jelly or using heat to make the tick detach from the skin. Your goal is to remove the tick as quickly as possible; do not wait for it to detach.

If you or a family member might have Powassan virus:

- See your healthcare provider if you become ill after having been bitten by a tick or having spent time outdoors participating in activities that may result in tick bites like hiking, camping, yard work, gardening, fishing, hunting, dog walking, etc.



## RESOURCES FOR MORE INFORMATION

PA DOH Vectorborne Disease webpage: [Vectorborne Diseases](#)

CDC Powassan virus website: <https://www.cdc.gov/powassan/index.html>

*This fact sheet provides general information. Please contact your physician for specific clinical information.*

**If you have any questions, contact us at 1-877-PA-HEALTH.**

