

Bucks County Department of Health (BCDH) West Nile Disease Control Program Overview

There are approximately 60 species of mosquitoes in PA. The main species that we are concerned with are the *Culex pipiens/restuans* species, which predominately carry the West Nile Virus, and are most active at dawn and dusk.



House Mosquito (*Culex* sp.) <http://www.idph.state.il.us/envhealth/pcmosquitoes.htm>

How do we treat breeding areas? We treat areas of standing water that are breeding mosquitoes with products called larvicides. The larvicide stops the mosquito larvae from becoming pupae or emerging as adults. Depending on which type of larvicide and the environment it is used in, the larvicide can be effective from 7 days to 180 days. Some of our commonly used Larvicides are:

Altosid XR Briquets <https://www.centralmosquitocontrol.com/all-products/altosid/altosid-xr-briquets>

Natular XRT Briquets <https://www.clarke.com/product/natular-larvicide/>

Fourstar Granules and Briquets <https://www.centralmosquitocontrol.com/labels>

Spheratax WSP <https://www.arbico-organics.com/product/Spheratax-WSP>

VectoMax <https://azelisaes-us.com/product/vectomax-fg/>

We take great care and caution in the proper application of these products.

How do we conduct surveillance? Gravid traps: black basin with smelly water attracts adult mosquitoes looking to lay their eggs. The box on top contains a fan and a net that traps the mosquitoes. This is the trap that primarily attracts and catches the species that carry WNV.

BG traps: Black plastic cylinder with a cooler of dry ice above it. The adult mosquitoes are attracted to the CO₂ emanating from the dry ice and the lure in the trap that mimics human scent. The fan traps the mosquitoes in the net.



[The picture on the left is a Gravid Trap, and the picture on the right is a BG Trap.](#)

What do we do with adult mosquitoes, specifically ones that test positive for WNV?: When we set a trap, we send the adult mosquitoes to the Department of Environmental Protection lab in Harrisburg where they are counted, identified, and tested for West Nile Virus. If we get a high number of mosquitoes in a trap, we first try and find if there is any standing water to potentially be removed or treated, which is where the adults would be breeding. If the mosquitoes from a trap test positive for WNV, we will consider doing a ULV (ultra-low volume) truck spray. This Department only conducts adult mosquito sprays when the risk of the West Nile Virus reaches a threshold whereby a substantial threat to the public health exists. Our Clarke Cougar ULV mosquito sprayer is calibrated yearly to insure that the proper application rate of the adult mosquito product is dispensed by the sprayer. We currently use Clarke Duet product.

[\(https://www.clarke.com/mosquito-products/adulticides/duet-adulticide/\)](https://www.clarke.com/mosquito-products/adulticides/duet-adulticide/) at an application rate of 0.75 oz of product sprayed per acre of land. **The BCDH always gives at least two days' notice to all municipalities and the public prior to conducting any sprays on public property, and we also contact all hypersensitive individuals and beekeepers in the spray area.**

Lyme Disease Overview

Lyme disease as well as other tick-borne diseases are a very serious problem not only in Bucks County, but throughout the state. Bucks County averages about 400 cases per year. However, tick populations are extremely difficult to control because they live and breed throughout nature and unlike mosquitoes, do not breed in standing water. Therefore, the best tactic to avoid contracting Lyme disease is to avoid getting bit.

The blacklegged tick, also known as the deer tick, transmits the Lyme disease bacterium through its bite. Certain precautions can be taken to prevent tick bites along with being aware of what areas and conditions ticks are most likely to be found.

Tick Info:

The blacklegged tick, or deer tick, is often found in wooded and grassy areas.

Most humans are infected with the Lyme disease bacterium through the bites of immature ticks, called nymphs, which feed in the spring and summer months.

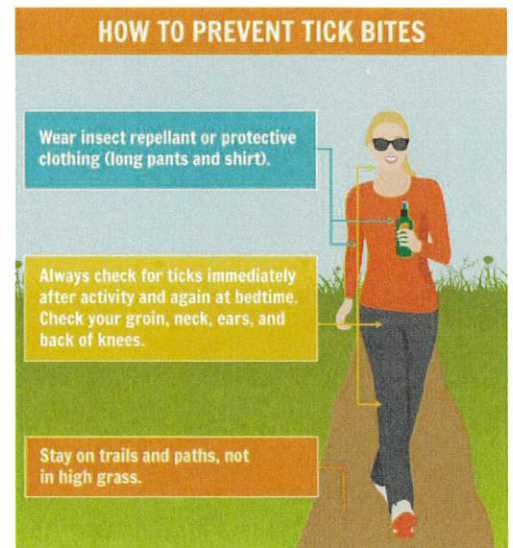
Ticks are often found attached to humans in the groin, armpits, and scalp areas, however they can attach anywhere on the body. In most cases the tick must be attached for 36-48 hours or more before the Lyme disease bacterium can be transmitted.

Ticks can be avoided by wearing long sleeved light colored clothing, pants tucked into socks, and using insect repellent. Clothing can be treated with 0.5% permethrin which is effective in repelling ticks. See the websites listed on the bottom of the following page to find the best repellent(s) for you.

The Trexler Game Preserve in Lehigh County has an informational sign at their trail entrances which is an excellent example of the measures that can be taken to educate the community. Other measures that can be taken by local agencies to prevent tick bites are cutting back foliage on paths and maintaining wider trails. This is important as ticks primarily attach onto people by using a questing technique, as shown in the picture below, whereby ticks climb to the top of foliage and attach to people or animals as they brush past. Having wide trails that are well maintained to keep brush back from the trails can safeguard the public and their pets against ticks!



Blacklegged Tick (*Ixodes scapularis*)



<https://www.cdc.gov/lyme/transmission/index.html>