

West Nile virus

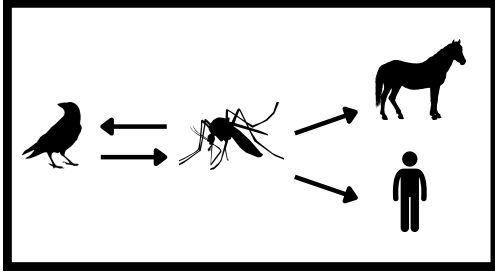
What you should know



West Nile virus (WNV) is a mosquito-borne virus that was first reported in Pennsylvania in 2000. It is found in mosquitoes from Lancaster County every year and can be spread to humans and horses.



West Nile virus



Graphic illustrating the WNV transmission cycle. Notice how horses and humans cannot transmit the virus back to mosquitoes.



Defend your yard and family

Most mosquitoes are weak fliers. If they are biting you around your yard, they are most likely breeding there or at a neighbor's house. Check your yard for containers holding water. There are many unconventional items that hold water like the folds in tarps, clogged rain gutters, corrugated pipes, and wheelbarrows.

Things you can do:

EVERY WEEK

- Tip and toss containers that are holding water.
- Turn containers and wheelbarrows over, so that they cannot collect water.
- Change the water in bird baths.
- Trim bushes and vegetation to reduce adult mosquito resting habitat.
- Avoid excessive outdoor activity at dusk and dawn when Culex mosquitoes are most active.

ONCE A MONTH

- Apply larvicide (kills mosquito larvae) to water that cannot be removed. Mosquito Dunks[®] are safe and effective products sold in most home improvement stores.

WHEN NECESSARY

- Repair any tears or rips in window screens to prevent mosquitoes from entering your home.
- Clean leaves and debris from gutters, which can hold water if they are clogged.
- Recycle old tires, which are perfect habitats for mosquito larvae.



West Nile virus risk

Who is at risk for WNV?

Although everyone is at risk for WNV, people over the age of 50 are at increased risk for a more severe form of the disease. There is no cure or vaccine for humans (there is a vaccine for horses). Additionally, the CDC identified certain medical conditions that increase your risk of becoming infected such as cancer, diabetes, high blood pressure, kidney disease, and organ transplant.

NO symptoms in MOST people

About 80% of people who are infected with WNV will not show any symptoms.

MILD symptoms in SOME people

1 in 5 people infected will develop a mild infection: symptoms include fever, headache, body aches, and skin rash.

SEVERE symptoms in FEW people

1 in 150 people infected will develop a severe infection; symptoms include fever, headache, neck stiffness, disorientation, coma, tremors, convulsions, muscle weakness, paralysis, and possibly death.



Repellents

When applying insect repellents on the skin (not including Permethrin):

- Avoid the eyes and mouth. Do NOT spray the face.
- Do NOT apply repellent to children's hands.
- Keep repellents out of reach of children.
- ALWAYS follow the product label.
- Below is a chart of CDC-recommended repellents:

	DEET	Picaridin	Oil of Lemon Eucalyptus	IR3535	Permethrin
Repels mosquitoes	Yes	Yes	Yes	Yes	Yes
Repels ticks	Yes	Yes	Yes	Yes	Yes
Effectiveness	Highly effective	Highly effective	Highly effective	Moderately effective	Highly effective
Duration of protection	2-8 hours	3-10 hours	2 hours	4-6 hours	5 to 7 washes* <small>*Applied to clothing, not skin</small>
Use on children	Over 2 months	Over 2 months	Over 3 years	Over 2 months	All ages

These products are recommended by the CDC. Always follow the product label for directions. Effectiveness varies depending on the concentration of the ingredients.



Culex mosquitoes



What do they look like?

Culex (pronounced cue-lecks) mosquitoes are small brown mosquitoes that usually feed on birds. They bite from sunset to sunrise. Sometimes they will feed on mammals like humans and horses.

Where do they live?

Culex mosquitoes lay eggs in rafts on the surface of standing water that is nutrient rich. Examples of larval habitats include catch basins/storm drains, retention basins and swales, clogged rain gutters, and sewage treatment plants. Adults will rest in shaded bushes, trees, and other plants.

Are they a health risk?

Yes, these mosquitoes can transmit West Nile virus. You may not notice their bite during dusk or dawn, so it's very important to wear insect repellent.

Mosquito prevention tip #1

Bat boxes are not effective tools for controlling mosquitoes in suburban Pennsylvania. There is no strong evidence that they eat up to 8,000 mosquitoes per night. Although, some bats eat mosquitoes, they most likely prefer larger insects like moths, which provide more energy than small mosquitoes. Also, citronella candles are not recommended for effective mosquito bite prevention. Instead, use a fan to blow mosquitoes away from you.



Asian tiger mosquitoes



What do they look like?

Asian Tiger mosquitoes are black mosquitoes with white stripes on their legs and a distinct stripe down the middle of their thorax (body part where the legs and wings attach to). They are aggressive and bite during the daytime.

Where do they live?

These mosquitoes lay their eggs one-by-one in artificial containers like bird baths, buckets filled with water, tires, and corrugated drain pipes. Adults rest around shaded vegetation. They are Lancaster and Lebanon County's biggest nuisance mosquito.

Are they a health risk?

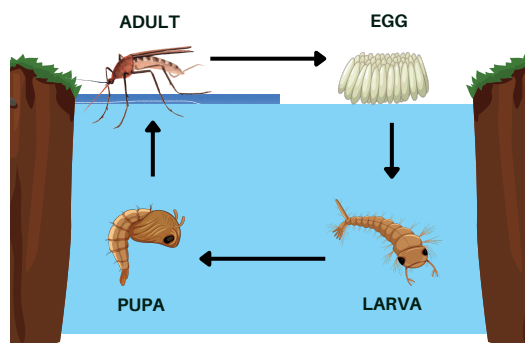
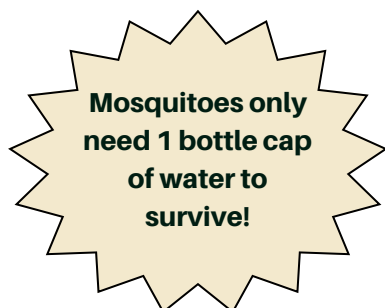
Although these mosquitoes are not normally associated with West Nile virus transmission, they can spread other diseases like Dengue, Zika, and Chikungunya.

Mosquito prevention tip #2

Natural plant oils like lemongrass, cedar oil, and peppermint can cause skin irritations. Many natural plant oil products have not been properly tested for preventing mosquito bites and only prevent mosquito bites for a short amount of time. Instead, use EPA-registered products, which are tested for effectiveness. These effective products contain either DEET, Picaridin, IR3535, Permethrin, and Oil of Lemon Eucalyptus (OLE).



Mosquito life cycle



- There are four life stages in the mosquito life cycle: egg, larva, pupa, and adult.
- Mosquito eggs are laid on the surface of water or in damp areas that will become submerged in water like flood zones and tidal marshes.
- After the egg hatches, larvae feed on microorganisms or plant matter in the water. They come to the surface to breathe air with the tube on the back.
- The larva then turns into a pupa and stops feeding.
- After a few days, the adult mosquitoes grows inside the pupa and emerges into the flying form on the water's surface.
- Only the adult female feeds on blood for her eggs. Both male and female mosquitoes drink nectar from flowers.



About Lancaster County's Mosquito-borne Disease Control Program

The Lancaster County Mosquito-borne Disease Control Program performs larval and adult surveillance to determine the abundance and distribution of mosquito species. We use gravid traps to collect mosquitoes. These mosquitoes are sent to the PA Department of Environmental Protection's lab in Harrisburg to be tested for WNV. In 2022, our technicians set over 570 gravid traps.

If habitat reduction or water management is not practical, we employ biological control methods. Biological pesticides generally have low toxicity to humans and other mammals and few environmental impacts. When biological control is not practical nor effective, we then use EPA registered chemical pesticides administered at low volumes from trucks to suppress adult mosquitoes.

Infestations of mosquitoes or standing water causing mosquito breeding can be reported on the WNV website at www.westnile.state.pa.us

If a dead bird is found, please contact the county coordinator, or visit the website listed above.

For more information about Lebanon County's WNV program, visit www.lccd.org/mosquito-borne-disease-program

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