

Public Health

Department of Entomology

MOSQUITOES IN AND AROUND THE HOME

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More than 50 species of mosquitoes are present in Indiana. The biting of most is simply annoying. However, certain species (especially in the genera *Culex* and *Aedes*) can threaten public health because of their ability to transmit viruses that cause human disease. Several such viruses have caused disease outbreaks in various parts of the U.S. over the last few years.

Mosquito-borne viruses that have been of concern in Indiana include those that are responsible for causing such diseases as St. Louis Encephalitis, La Crosse fever, Eastern equine encephalitis, Western equine encephalitis, and West Nile virus. Wild birds serve as the reservoir. Mosquitoes feed on infected birds and transmit the virus to other birds. The virus becomes widespread in the wild bird population by midsummer, when mosquitoes are abundant. Some mosquitoes may become infected and transmit the virus to non-bird hosts such as people and horses between July and late October.



Female mosquito feeding.

WHERE AND HOW MOSQUITOES DEVELOP

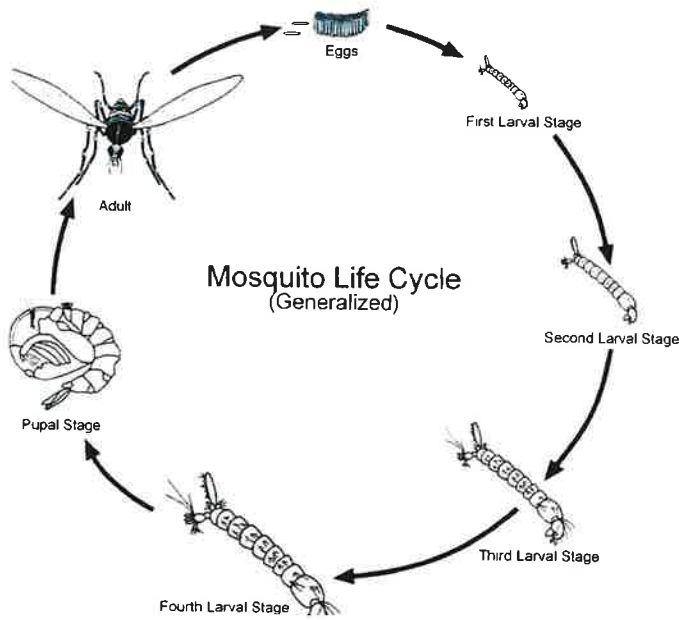
Mosquitoes always develop in water, but the type of breeding place varies with the species of mosquito. Common breeding places are flood waters, woodland pools, slow-moving streams, ditches, marshes, and around the edges of lakes. Other mosquitoes develop in tree cavities, rain barrels, fish ponds, bird baths, old tires, tin cans, guttering, catch basins or any container that holds water. Diseases such as West Nile virus and Zika are transmitted by these container breeding mosquitoes.



Old discarded tires are a breeding ground for mosquitoes.

LIFE CYCLE

After taking a blood meal, each female mosquito lays up to 400 eggs on the surface of water or where water is likely to accumulate. Eggs may hatch in less than 3 days. Larvae (wigglers) mature in 7-10 days before changing into pupae (tumblers). Two or three days later, adult mosquitoes emerge. The entire life cycle may be completed in as few as 10 days, if temperatures are ideal.



Note: Each larval (wiggler) is larger than the previous one. Larval and pupal stages are aquatic. (Illustration by: Scott Charlesworth, Purdue University)

ELIMINATING BREEDING PLACES

The most effective control of mosquitoes around the home is to prevent them from breeding. This can be done by eliminating or altering existing breeding sites as follows:



Improperly maintained gutters are habitats for nuisance and vector mosquitoes.

1. Remove and dispose of tin cans, old tires, or any other containers that may hold water.
2. Make weekly inspections of the water in flower pots and plant containers. If mosquito larvae are seen, change the water. Also, be sure to loosen soil in flower pots regularly to ensure that water penetrates through the soil instead of forming a stagnant pool on the surface for mosquitoes to breed in.
3. Change the water in bird baths and wading pools once or twice a week. Drain wading pools when not in use.
4. Stock garden and lily ponds with top-feeding minnows.
5. Keep rain gutters unclogged and flat roofs dry.
6. Drain and fill stagnant pools, puddles, ditches, or swampy places around the home and property.
7. Keep margins of small ponds clear of vegetation.
8. Place tight covers over cisterns, cesspools, septic tanks, fire barrels, rain barrels, and tubs where water is stored.
9. Fill tree holes with sand or cut holes near the base to drain them.
10. Remove tree stumps that may hold water.

CONTROLLING MOSQUITOES OUTDOORS

In addition to the elimination of breeding sites, it may be necessary to control adult mosquitoes that migrate in from surrounding areas. The adults like to rest in vegetation. Therefore, do not allow weeds to grow uncontrolled near the home, and keep weeds in nearby lots well trimmed. Leave insecticide treatments to trained mosquito control personnel. Contact your local health department regarding any concerns or interest for chemical treatment.

CONTROLLING MOSQUITOES INDOORS

Mosquitoes can be prevented in the home by keeping windows and porches tightly screened. Inspect screens in windows, doors, and porches for holes or tears. Likewise, fill gaps around windows and doors with weather-stripping. Space sprays or aerosols containing synergized pyrethrins are effective against mosquitoes found in the home. Use these materials as directed on the label.

PERSONAL PROTECTION

When possible, wear long-sleeved shirts and long pants with enough thickness to prevent mosquito mouth parts from reaching the skin. Dark colors attract mosquitoes, so wear light tones if you're going to be outside. Mosquitoes are of-

ten most active at dawn and dusk. If possible stay indoors or in a tightly screened area to avoid bites at these times.

Repellents are very useful in protecting against mosquito bites and are available under various trade names. Those that contain the active ingredient diethyl toluamide (DEET) are the most effective. Only use repellents that are registered by the Environmental Protection Agency (EPA). These are proven to be effective when used according to label directions. Read and follow label directions on any product used. For concern about products for use on children, choose products that indicate on their labels that they are safe for use on children. Citronella candles are available, but may be of limited effectiveness because of variable outdoor wind movement. A granular repellent containing naphthalene

compounds, Mosquito Beater, can be applied on lawns and other mosquito-infested areas. It effectively keeps mosquitoes repelled for several hours.

PET PROTECTION

Mosquitoes not only bite humans but other animals as well. Generally, animals are not harmed by mosquitoes. However, mosquitoes may transmit West Nile Virus to dogs, cats, horses or heartworms to dogs. During times of high mosquito activity, keep pets inside the house or barn, a screened-in kennel or porch area. Avoid walking pets during prime mosquito “feeding time”. Check with a veterinarian for preventative measures and symptoms to look for.

READ AND FOLLOW ALL LABEL INSTRUCTIONS. THIS INCLUDES DIRECTIONS FOR USE, PRECAUTIONARY STATEMENTS (HAZARDS TO HUMANS, DOMESTIC ANIMALS, AND ENDANGERED SPECIES), ENVIRONMENTAL HAZARDS, RATES OF APPLICATION, NUMBER OF APPLICATIONS, REENTRY INTERVALS, HARVEST RESTRICTIONS, STORAGE AND DISPOSAL, AND ANY SPECIFIC WARNINGS AND/OR PRECAUTIONS FOR SAFE HANDLING OF THE PESTICIDE.

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FIGHT the BITE

Tick Prevention and Removal

- Wear repellent.
- Check for ticks daily.
- Shower soon after being outside.
- Call your doctor if you get a fever or rash after a tick bite.
- For more information, visit www.in.gov/isdh/27792.htm

Indiana State
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Use fine-tipped tweezers to grasp the tick as close to the skin's surface as possible.

Pull upward with steady, even pressure to remove the tick. Avoid twisting or jerking.

Clean the bite area and your hands with rubbing alcohol, iodine scrub, or soap and water.

	American Dog Tick	Blacklegged Tick	Lone Star Tick
Adult (F)			
Adult (M)			
Nymph	No risk		
Larva	No risk		

Actual Size

INDIANA TICKS

of Public Health Importance



Larvae not shown

Enlarged