



# Mosquitoborne Disease Prevention

There are over 60 different types (species) of mosquitoes in Oklahoma and 230 species in the United States. The species differ in how they look. They also differ in how they act, such as how aggressive they are when they bite, where they breed, and when they are most active. Not all mosquitoes transmit diseases such as West Nile virus (WNV); however, when dealing with mosquitoborne illnesses, prevention is your best bet.

## How can I prevent mosquito bites?

- Wear insect repellent containing an active ingredient such as ten percent to 30% DEET, Picaridin (a.k.a. KBR 3023, Bayrepel, and icaridin), or oil of lemon eucalyptus (PMD), to exposed skin and clothing when outdoors, especially during the evening and early morning hours. Always follow directions appearing on the product label for proper use and re-application instructions. If you are also using sunscreen, apply sunscreen first and insect repellent second.
- A higher percentage of DEET or Picaridin in a repellent does not mean that your protection is better—just that it will last longer.
- When weather permits, wear long sleeves, long pants, and socks when outdoors. Mosquitoes may bite through thin clothing, so spraying clothes with repellent containing permethrin or another EPA-registered repellent will give extra protection. Permethrin-treated clothing may protect you after multiple washings. Read the product label to find out how long the product provides protection.
- Never apply repellents containing permethrin directly to the skin.
- Don't spray repellents on the skin under clothing.
- Do not apply insect repellent onto a child's hands, eyes, mouth, and/or cut or irritated skin. Adults should spray insect repellent onto their hands and then apply to a child's face.
- Place mosquito netting over infant carriers/strollers when you are outside with infants. Do not use insect repellent on babies younger than 2 months of age.
- Avoid doing outdoor activities when mosquitoes are most active in the early morning and early evening.
- Install or repair window and door screens so that mosquitoes cannot get indoors.
- Use air conditioning when available.
- Help reduce the number of mosquitoes in the areas outdoors where you work or play, by draining sources of standing water. In this way, you reduce the number of places mosquitoes can lay their eggs and breed.
  - \* Prevent items such as buckets and tarps from holding standing water. Consider removing discarded or unnecessary items that collect water.
  - \* If rainwater is collected, cover and seal containers when not collecting rain.
  - \* Empty your outdoor pet's water bowl and refill daily.
  - \* Rinse, scrub, and refill birdbaths weekly.
  - \* Empty plastic wading pools weekly and store indoors when not in use.
  - \* Regularly maintain swimming pools and outdoor hot tubs. Empty water from the pool and hot tub covers weekly.
  - \* Store boats covered or upside down.
  - \* Regularly check for clogged rain gutters and clean them if needed.
  - \* Repair leaky lawn irrigation spouts.
  - \* Trim grass and weeds and dismantle brush to deprive mosquitoes of a habitat.
  - \* Check for containers or trash in places that may be hard to see, such as under bushes or under your home.
  - \* For a water garden or ornamental body of water, use an environmentally safe product to kill the larvae, e.g. BTI, or stock with fish that eat mosquito larvae ("mosquito minnows"). Interrupt the mosquito life cycle by using bacterial and chemical (methoprine oils, mononuclear films) agents that kill the larvae.
- Mosquito breeding sites can be anywhere. Neighborhood clean up days can be organized by civic or youth organizations to pick up containers from vacant lots and parks, and to encourage people to keep their yards free of standing water. Mosquitoes don't care about fences, so it's important to control breeding sites throughout the neighborhood.

**What is BTI, Mosquito Dunk, Aquaback, or Vectobac?**

- These products contain a mosquito larvae eating bacteria called *Bacillus thuringiensis* (BTI) and may be purchased at most hardware or home and garden stores.
- Most of these products are shaped like a ring and do not cost a lot of money.
- Follow the directions on the product label. The product label should contain information regarding the square feet that the product will treat and the duration of time that it will effectively treat the water.