Mosquito Control & Disease Prevention

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With spring comes mosquitoes. In addition to being a nuisance and causing severe reactions to bites in some people, mosquitoes can also transmit diseases including malaria and St. Louis encephalitis in humans, equine encephalomyelitis in horses, heartworm disease in dogs and cats, and West Nile virus in many species.

What are mosquitoes?

Mosquitoes are insects, thus related to lice, fleas, and flies. Mosquitoes have six legs, a pair of wings, compound eyes, large antennae, and that problematic proboscis with which the females suck blood. (Male mosquitoes eat nectar.)

To make them even more pesky, it is no help that some female mosquitoes can hibernate during the winter and lay their eggs in spring. They generally travel for about 2 miles from their breeding grounds, or even further if blown by the wind.

What is the life cycle of the mosquito?

All mosquitoes need water as a place where they can lay their eggs one at a time, or in "rafts" of up to 200 eggs, depending upon the species. The eggs hatch into larvae about 2 days after being laid. The larvae (also called 'wigglers') live in the water for 7-10 days while maturing into the pupal (also called 'tumbler') stage. In 2-3 days, these pupae have developed into adults and fly away and mate. (If you are wondering how a male and female mosquito find each other, the female's buzzing which is made by her wings is a higher pitch than that of the male.)

Adding up the days necessary for each stage of development, you can see it only takes about 2 weeks (less if it is really warm) for the life cycle to be completed. Add the fact that each female can lay 100-400 eggs, and you can see why you can have so many mosquitoes in a very short time.

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How can mosquitoes be controlled?

We can try to eliminate or reduce mosquitoes in several ways, and combining methods is best. We need to:

1. Reduce reproduction by eliminating breeding sites
2. Reduce the adult population and our exposure to them
3. Keep the remaining mosquitoes away from us and our pets through repellents

Eliminate Breeding Sites

One of the most important things to remember is that mosquitoes need stagnant water to reproduce. No water, no reproduction. Control then, is based on removing standing water, which can serve as a breeding site. Think of the things that can hold water:

- Destroy or dispose of tin cans, old tires, buckets, unused plastic swimming pools or other containers that collect and hold water. Do not allow water to accumulate in the saucers of flowerpots, cemetery urns, or in pet dishes for more than 2 days.
- In areas where standing water cannot be avoided, use products that contain the insect growth regulator (IGR) methoprene. This stops the development of young mosquitoes into adults.
- Clean debris from rain gutters and remove any standing water under or around structures, or on flat roofs.
- Change the water in birdbaths and wading pools at least once a week.
- Reduce mosquito breeding in ornamental ponds.

- Stock ornamental pools with top feeding predacious minnows. Mosquito fish, for example, can eat 100 to 500 larvae per day. Koi or goldfish can be added to ponds.
- Treat the pool with products containing biorational larvicides such as *Bacillus thuringiensis* subsp. *Israelensis* (Bti). Products include Mosquito Dunks, which will not harm plants or fish.
- Add a feature such as a waterfall, fountain, or aerator. These options will not only enhance the pond's beauty, but will also prevent it from becoming a breeding ground for mosquitoes, since they prefer to breed in stagnant, not moving water.

Reduce Exposure to Adult mosquitoes

- Place mosquito netting over infant carriers when you are outdoors with infants.

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- Install or repair window and door screens so that mosquitoes cannot get indoors.
- Reduce light at night since light tends to attract mosquitoes.
- Mosquitoes are a favorite food for bats, so placing bat houses in your area would be another way to decrease the mosquito population.

- Adult mosquitoes prefer to rest where it is cool, dark, and damp, so keeping grass cut and weeds and brush under control, may encourage mosquitoes to find shelter elsewhere. There are insecticides that can be sprayed on shaded areas around buildings or the yard. Remember not to spray when or where runoff could go into lakes or rivers. Read the label on all insecticides thoroughly and apply them as directed. Remember that insecticides may kill beneficial insects as well as those we do not wish to have around.
- Consider a mosquito trap: Many insect electrocutors (bug zappers) are on the market. The jury is still out on whether 'bug zappers' are effective against mosquitoes. Yes, they may kill some mosquitoes, but the light also attracts more mosquitoes. The question is 'Does the device kill more than it attracts?'

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