

Life Cycle

There are many different species of mosquito found in North America. But all have one thing in common: they must have water for their early stages.

All mosquitoes undergo the same four-stage life cycle: egg, larva, pupa and adult. The second and third stages are aquatic.

Depending on the particular species, the female mosquito lays her eggs either individually or in attached groups called "rafts." She places them either on the surface of still water, along its margins, in treeholes, or other areas prone to flooding via rain, tidal action, overflow or seepage.

Egg

Egg shape and color vary with species, but the size is about 1/25" (1mm) long. Approximately one hour after they're laid the eggs darken and become opaque, which camouflages them effectively.

In some species, the eggs may hatch within only a few days after being laid, although the precise time varies with the temperature. But if the egg is laid out of water or is subject to drying, the embryo inside it can remain dormant until ideal conditions for hatching are met.

Once the egg hatches the larval stage begins. The larvae of many species hang suspended from the water surface; the suspension angle varies with species. The mosquito larva hangs head down. In most species an air tube extends from the larva's posterior end to the water surface; this breathing siphon acts as a snorkel to obtain air.

Larva

In most species the larvae feed on aquatic microorganisms. They stay suspended just below the water surface most of the time, but can dive deeper when alarmed. Because they swim in a characteristic S-shaped motion, mosquito larvae are commonly called "wigglers" or "wrigglers."

As it feeds, the larva enlarges, outgrowing its exterior covering. It forms a new, larger skin, splitting and casting off its old one. Each of these casting-off actions is called a molt, and the stages between molts are instars. The larval stage includes four instars and four molts after hatching from the egg. The fourth instar is about 1/2" (1.2cm) long; the last molt results in the pupa. The larval stage ranges from 4 to about 10 days, varying with species, water temperature and food availability.

Pupa

The pupa does not feed. But like the larva, it's also sensitive to shadows, ripples and similar disturbances in the water. Because it's physically active and employs a tumbling motion to escape to deeper water, the pupa is commonly called a "tumbler." Like the larva, the pupa also has a breathing apparatus, two respiratory trumpets, closer to the head. The pupal case darkens as the adult develops inside. After about 1 1/2-4 days (depending on temperature) the pupa's skin splits along the back; the adult slowly struggles out and rests on the water surface.

Adult

Usually the males emerge first and linger near the breeding sites, where they wait for the females. Mating must occur quickly because the adult mortality rate is high. In fact, in some species about 1/3 of the adult population may die daily; so the females compensate by producing large numbers of eggs.

Male mosquitoes usually live a mere 6 or 7 days. But with ample food, females of some species can live for up to five months. A female may survive only about two weeks during its most active summer period.

To nourish her developing eggs, the female mosquito needs blood. So she searches for a blood meal from an animal. The female locates her victims by the chemicals they emit. She is sensitive to several, including carbon dioxide, amino acids and sex hormones. Convection currents around warm, perspiring humans are particularly attractive to mosquitoes. While their range is usually within 5 or 10 miles, female mosquitoes can move as far as 40 miles before obtaining a blood source. After each blood meal, the female mosquito lays her eggs and the life cycle is renewed.

