

## Ticks in Arizona

Ticks are sometimes referred to as insects, but they are actually arachnids, related to spiders and mites. There are hundreds of species of ticks found worldwide and more than 25 species in Arizona. Of that number, most people are likely to encounter only a handful. The most common tick found around homes is the Brown Dog Tick, *Rhipicephalus sanguineus*.



areas. The first symptoms of Rocky Mountain spotted fever are fever, chills, muscle ache, and headache. A spotted rash often develops two to five days later. Early treatment for RMSF is effective. If a tick bite is suspected it should be mentioned to the doctor so the disease can be diagnosed quickly and treated with the appropriate antibiotic.

*Tick-Borne Relapsing Fever* is a very rare disease in Arizona. It is transmitted by a "soft tick," genus *Ornithodoros*. These ticks are occasionally encountered in rustic cabins and woodpiles. The ticks are night feeders and only remain attached for a short time, 15 to 30 minutes. Since the bite is painless, many people do not realize they have been bitten. *Ornithodoros* ticks can live up to 10 years, and once infected a tick will continue to transmit the disease for its lifespan. Symptoms occur 2 to 18 days after the bite and include high fever, muscle and joint pain, chills, drenching sweat, and headache. If symptoms follow a stay in a rustic cabin, the possibility of TBRF should be mentioned to the doctor.

*Lyme disease* is a serious problem in many parts of the country. As of 2007, no one has contracted Lyme disease as the result of a tick bite in Arizona. The vector for disease in the west is the Western black-legged tick, *Ixodes pacificus*. This family of ticks needs high humidity to survive and usually cannot live in the arid Arizona climate. In Arizona the western black-legged tick has a very limited distribution. It is only found in the higher elevations of the Hualapai Mountains and only in late winter and early spring.

### Tick Removal

Ticks rarely feed on humans in Arizona, but if one is found on the skin it should be removed immediately. A tick normally needs to be attached for at least several hours before it will transmit disease to its host; so prompt removal dramatically reduces the likelihood of infection. Removal should be done with fine tweezers. Grasp the tick as close to the skin as possible and gently pull it straight up. Do not twist the tick or the mouthparts may break off and be left in the skin. Also be careful not to squeeze the tick's body, which can cause it to release

Ticks have four stages in their life cycle: egg, larva, nymph, and adult. Once hatched, a tick needs to have a blood meal before it can develop into the next stage. The larvae, or "seed ticks" are tiny. The brown dog seed tick is less than 1/16 inch long and has six legs. After a meal of blood it will molt and enter the nymph stage. Nymphs are still small, less than 1/8 inch long, and have eight legs. In the final adult stage a blood meal allows the female to lay eggs. She will deposit as many 5,000 eggs and then die. Ticks at any stage of development can live many months without feeding; an adult brown dog tick can survive for as long as two years without a blood meal.

### Ticks and Disease

Because ticks feed on blood, they can transmit disease from animal host to animal host, which makes them a health concern. Tick-borne diseases are rare in Arizona, but they can be serious. Different types of ticks transmit different diseases.

*Rocky Mountain Spotted Fever* (RMSF) is the most common tick-borne disease in Arizona, although there are usually less than a dozen cases per year. In Arizona, the brown dog tick, *Rhipicephalus sanguineus*, can be a "vector," carrying the disease from host to host. The brown dog tick is found worldwide. It has adapted to living both indoors and out, so it can survive cold climates by staying inside a house. Its principal hosts are dogs, but if there is an extreme overpopulation of the tick they can also feed on humans. Control of ticks on pets and in the local environment is the best prevention for RMSF. The Rocky Mountain wood tick, *Dermacentor andersoni*, can also transmit RMSF. This tick is found only in the very northern part of Arizona in brushy

fluids into the tissue. After removal, clean the bite area with soap and water, disinfect the tweezers and wash your hands. Do not handle or squeeze a tick with bare hands, since fluids from an infected tick can transmit disease through breaks in the skin or contact with eyes, nose, or mouth. If possible, preserve any tick taken from a human (not from pets) in a small leak-proof container with a small amount of rubbing alcohol and label with the date, contact information, and where the tick came from. If there is a health concern, send the tick directly to the Vector Borne Disease Program of the Arizona Department of Health Services in Phoenix; otherwise you can take it to your local Cooperative Extension Agent.

There are many folklore methods for removing ticks, such as “smothering” them with petroleum jelly or holding a hot match up to them. These methods are ineffective and can be dangerous, causing the tick to release more pathogens into the bloodstream.

### Ticks on Pets

Controlling ticks on pets consists of both managing the pet and its environment. It also requires constant vigilance. Tick populations can rebound rapidly from just a few individuals, and it is very difficult to remove all eggs, larva, nymphs, and adults from the environment. Removing ticks by hand is one approach when there are not too many ticks. The same care should be taken removing ticks from pets as from people: use tweezers (not fingers), be careful not to squeeze the tick, and wash hands afterward. There are a number of chemical ways to provide protection for pets, including collars, dips, sprays, shampoo, and “spot-on” methods. *Some tick treatments that are suitable to dogs can be toxic to cats.* Your local veterinarian can provide information on appropriate applications considering the age and health of your pet.

Most of the life cycle of a tick is spent growing or molting, not feeding on an animal. The average life cycle for brown dog ticks is two years, with only two or three weeks of that feeding. The rest of the time ticks prefer to hide in cracks

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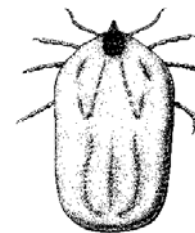
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and crevices. They have a tendency to climb, and indoors they may hide high on walls. Vacuuming both high and low, cleaning curtains, and frequent laundering of pet bedding can often be sufficient to control ticks indoors. In more serious infestations pesticides can be applied to likely hiding places. This may require a professional pest control service.



*Adult female Rocky Mountain Wood tick  
3 times actual size*



*Engorged female brown dog tick  
2 times actual size*

*Photo source: R. L. Smith, 1982. Venomous Animals of Arizona. The University of Arizona*

*No endorsement of named products is intended, nor is criticism implied of similar products that are not mentioned. Pesticides are poisonous. Always read and carefully follow all label instructions for safety, use, and disposal given on the container label.*