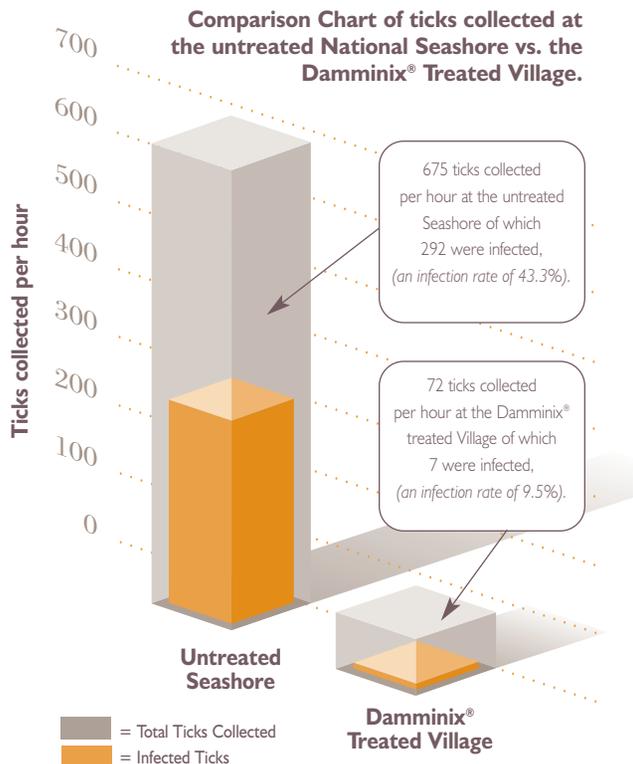


fur and into their nests. As ticks attempt to attach to the treated mouse, they are killed on contact. *In peak season an untreated mouse might feed several hundred ticks – ten or fifteen ticks each day for several weeks or more. Damminix® treated mice will kill those same ticks.* Damminix® Tick Tubes require no special equipment or gloves to install; they are left on the ground in a grid approximately 30 feet apart, and do not need to be picked up or refilled.

How effective are Damminix® Tick Tubes?

This simple method is very effective in reducing the risk of exposure to infected ticks. One village, Fire Island Pines, in New York, has used Damminix® for years and its effectiveness has been tested in comparison with the



untreated land immediately adjacent in the Fire Island National Seashore.

Ticks were collected from each site. At the untreated National Seashore 675 ticks were collected in an hour, of which 292, or 43.3%, were infected. On the same day, in the treated village, 72 ticks were collected in an hour, of which only 7, or 9.5%, were infected. **This reduction – from 292 infected ticks to seven infected ticks in an hour – represents a greater than 90% reduction in the risk of exposure.** The next year the results were as good: 31 infected ticks were collected per hour in the National Seashore and 3 were collected in the Village. Similar results have been obtained every year the tests have been done. This remarkable success is due to a sophisticated understanding of the epidemiology of Lyme disease, and to the simplicity and reliability of the Damminix® delivery system. Mice infect the ticks, and by transforming mice into killers of ticks instead of feeders of ticks, Damminix® dramatically reduces the incidence of infected ticks. **Each tube of Damminix® placed in mouse habitat will reduce the risk of exposure to Lyme disease.**

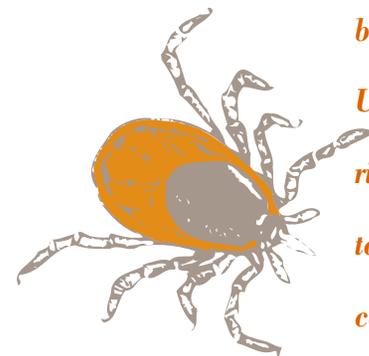
Damminix® Tick Tubes are available from many local lawn and garden retailers, hardware stores, and professional pesticide applicators.

Available at:

EcoHEALTH, INC.

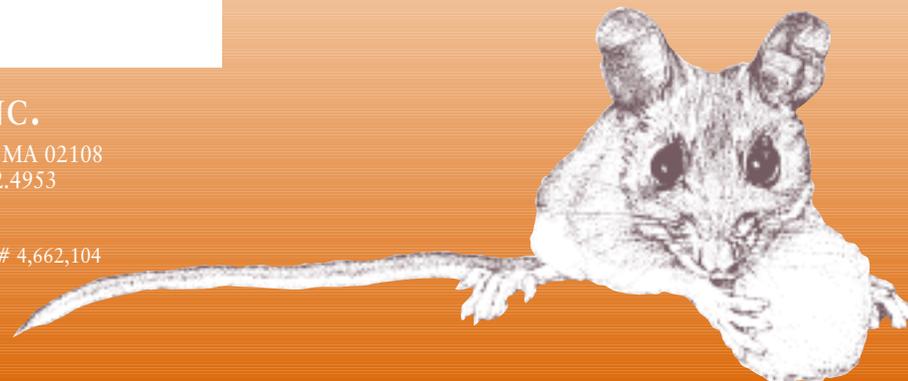
33 Mt. Vernon Street, Boston, MA 02108
 617.742.2400 Fax: 617.742.4953
www.damminix.com

EPA Reg #56783-1 U.S. Patent # 4,662,104
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Fight Lyme Disease

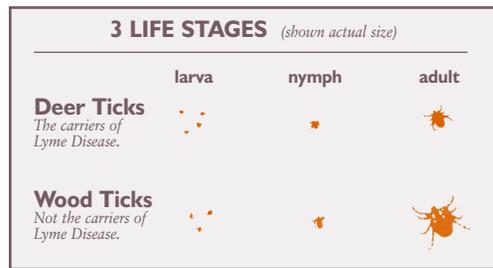
Lyme disease is the most common tick borne disease in the United States. The risk of exposure to Lyme disease carrying ticks can be reduced by taking certain simple steps to protect yourself and your property.



What is Lyme disease and how does it spread?

Lyme disease is caused by a microscopic organism, (*Borrelia burgdorferi*), transmitted by the deer tick. The early stage of Lyme disease is often accompanied by flu-like symptoms: fatigue, muscle aches, low grade fever, chills, headaches, and often, at least in adults, by a red expanding rash which may look like a bull's eye. Later stage symptoms include arthritis, palsy, heart arrhythmia, joint and muscle pain, fatigue, memory loss and other neurological complications, which can be serious and chronic. Detection is difficult because the symptoms mimic those of common ailments, and blood tests are not always reliable, especially in the early weeks of infection. This difficulty of diagnosis increases the risk of serious consequences from Lyme disease because it is harder to treat if not caught early. **Because of the seriousness of the disease, the difficulty of diagnosis, and the importance of early treatment, a doctor should be consulted early if there is a chance of having been bitten by a deer tick.**

There are three stages in the life of the Lyme disease tick: larva, nymph and adult. The tiny larvae hatch from eggs in mid-summer but



burgdorferi in its blood – most often the common field mouse. When the next stage of the tick, the nymph, appears the following spring, as many as one third may be infected and are then able to transmit Lyme disease. That is why most cases of Lyme disease are transmitted in the spring and early summer. The final stage in the life of a tick, the adult, appears in the fall, but it is large enough to be more easily seen and

avoided. It feeds on deer. Deer are responsible for the rapid spread of the tick population, but do not infect the ticks.

What can be done to reduce the risk of infection in a Lyme disease infested area?

There are several steps that can be taken to reduce risk. **Avoid areas that are likely to have ticks.** Ticks prefer a dense and sheltered microclimate, as do the animals they typically feed on. Most of their lives are spent in underbrush, on the underside of leaves, in wood lots, leaf litter, or in the nests of

rodents. Avoid these areas. **Reduce habitat favorable to the transmission of Lyme disease.** Reduce tick, mouse and deer habitat by fencing, or by removing yard waste, wood piles, brush, leaf litter, or plants attractive to deer and mice.

Protect yourself. Use insect repellents and check for ticks after visiting potential tick-infested areas. The ticks are small and hard to see – so small that most people who contract Lyme disease cannot remember having been bitten. Wear light colored clothing to help spot the ticks. Tuck trousers into socks to prevent ticks from crawling unnoticed up legs. Remove the ticks before 24 hours have passed and the chances of transmission are reduced. **Treat your yard to kill**

ticks. Use pesticides that will both reach and kill the ticks, and kill as few other living organisms as possible. Conventional sprays have difficulty reaching infected ticks because sprays work best in open areas and on the upper surfaces of leaves. Unfortunately, the ticks that are found in areas like lawns, where sprays can easily reach, are usually not infected with Lyme disease, because the primary source of infection, the field mouse,

Avoid areas likely to have lots of ticks. Reduce tick, mouse and deer habitat if you can. Protect yourself.

is rarely found in an open area. Mice are always hiding, fearful of being seen and caught by predators. If the mouse is not out in the open, infected ticks will not likely be either, because they are incapable of moving more than a few inches from where they feed. On the other hand, if

ticks move by being transported by an animal, they most likely will have fed on that animal, and because ticks feed only once in each stage of their life, they will not then be a threat to people. Another difficulty in reaching ticks with conventional sprays arises from the fact that ticks need moist and sheltered areas and are not usually found on the upper surfaces of leaves.

TICK REMOVAL

It generally takes 24 hours for a tick to transmit infection, so check yourself and remove ticks when you see them.

- **Wipe around the bite with an alcohol swab,**
- **Using sharp tweezers, grasp the tick as closely as possible to your skin, trying not to rupture the back half of the tick's body,**
- **Pull the tick straight out,**
- **Save the tick – either dead or alive, it will help in determining infection.**

Infected ticks are mostly to be found in mouse habitat and on the undersides of leaves where sprays cannot easily reach them.

Is there any effective way to kill ticks?

Damminix® Tick Tubes, developed at Harvard University, are much more precisely targeted than sprays and can reach and kill Lyme disease carrying ticks. Damminix® consists of treated nesting material in small cardboard tubes. The tubes are placed in mouse habitat in spring and in early summer in advance of the twice yearly appearance of the ticks. Mice, always looking for nesting material, collect the treated cotton. The active ingredient on the cotton, permethrin, (which does not harm the mice), gets onto their