This Safety Bulletin is designed to increase awareness about the existence of Lyme disease throughout New York State; and to inform employees about the potential for contracting disease caused by exposure to ticks, and the precautions to avoid contact.

**TICKS** are small parasitic arachnids (related to spiders) that live on blood. Three common species that cause disease are Deer Tick, Dog Tick and Lone-Star Tick. Common reference to Deer and Dog ticks is often misleading since ticks are also found on many warm-blooded animals such as mice, birds, domestic animals and humans, and can be found in tall grass when they are not feeding. Four diseases associated with ticks are: Lyme disease, Ehrlichiosis, Rocky Mounted Spotted Fever and Babesiosis. All of these diseases are caused by microorganisms that live in the infected tick. When the tick bites an individual the microorganism is passed onto the host.

**LYME DISEASE** - a bacterial infection transmitted only by the Deer Tick. Ticks infected with Lyme disease can be found throughout New York State, and are especially prevalent in Westchester County and Long Island. Sixty percent of people infected by Lyme disease will develop a circular, red, warm, rash with a "bulls-eye" appearance.
The official common name for a tick often suggests that it parasitizes a specific animal host (‘deer tick’, ‘dog tick’, ‘cattle tick’, etc). However, with rare exceptions, most tick species willingly suck blood from almost any animal they encounter.

**Primary Stage Symptoms** - fever, nausea, testicular and lymph node enlargement, malaise, muscle and joint aches and pains, and rash. These symptoms appear 3-30 days after infection.

**Secondary Stage Symptoms** - meningitis, encephalitis, and carditis, which if left untreated can result in neurological symptoms, heart problems and arthritis.

**PREVENTION**

- Carefully inspect the body after being in areas of potential exposure. Prompt removal of ticks is important. Deer ticks must remain attached at least 36 hours to transmit Lyme disease. Wear clothing with tight cuffs at the wrists and ankles.
- Use insect repellent -- There are many different products on the market, with different ingredients, concentrations and effectiveness. The most effective contain DEET, permethrin (only to be applied on clothing), picaridin or oil of lemon eucalyptus. If you decide to use one, be sure to follow label directions and apply repellent carefully. The user should read the manufacturer’s label carefully-See Additional Information.
- Tuck pants into socks, use two-sided tape around ankles to immobilize crawling ticks.

**TREATMENT** - Lyme disease, Ehrlichiosis, and RMSF are treated with antibiotics. Babesiosis is treated with drugs used for Malaria. In all cases, a physician is necessary for proper treatment.

**REMOVAL**

If a tick starts to bite, prompt removal is essential. Removal before the tick is completely embedded in the skin will greatly reduce chance of infection.

The only safe method of removal is with tweezers or specifically designed extractors. Grab the tick by the **head and mouth** as close to the skin as possible and pull straight out. Avoid squeezing the **body** of the tick during extraction. Clean area with soap and water to avoid secondary infection. Inspect the bite area after removal to assure that all of the tick has been removed. Never attempt to remove a tick with heat, Vaseline, or chemicals, since such techniques may cause the tick to regurgitate infectious material into the bite.
LYME AND RELATED DISEASES

VACCINATION

There is currently no approved vaccination for Lyme disease.

OTHER TICK RELATED DISEASES

ROCKY MOUNTAIN SPOTTED FEVER (RMSF) - found in the Long Island area, mostly in Dog Ticks, but frequently found in other tick species. Symptoms appear within two weeks of the bite of an infected tick. RMSF is characterized by a sudden onset of moderate to high fever (which can last for two weeks), severe headache, fatigue, deep muscle pain, chills, and rash. The rash begins on arms or legs, may include the palms of the hands or the soles of the feet, and can spread rapidly to the rest of the body.

BABESIOSIS - a rare tick-borne disease that can be found in the Long Island area and is carried by the Deer Tick. Babesiosis is of most concern to the elderly and individuals with weak immune systems. It takes from 1 to 12 months for symptoms to appear. Infections can occur without producing symptoms. Common symptoms include fever, fatigue and anemia, lasting from several days to several months.

EHRLICHIOSIS - found in the Deer Tick, Dog Tick and the Lone-Star Tick. Cases have been diagnosed in Westchester County and the lower Hudson Valley and Long Island. Symptoms appear 1 to 3 weeks after infection. Common symptoms are fever, muscle aches, weakness and headache. People may also experience confusion, nausea, vomiting, and joint pain. Rash is very uncommon.

ADDITIONAL INFORMATION

Repellents can be effective at reducing bites from ticks and insects that can transmit disease. Their use is not without risk of health effects, especially if repellents are applied in large amounts or improperly. More information is available at the NYS Department of Health at Environmental Health INFOLINE 1-800-458-1158 or online at http://www.health.ny.gov/publications/2749/.