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## Fact Sheet: Lyme Disease

Ticks can transmit a variety of diseases, the most common in the United States being Lyme disease. Lyme disease is a bacterial infection that is spread through the bite of infected blacklegged (deer) ticks. Most infections are due to bites of immature ticks, which can be less than 2mm in length, as they are harder to see and feel. Between 10 and 20% of patients with Lyme disease have lingering symptoms (muscle/joint pain, fatigue, sleep disturbances, and cognitive difficulties) that can last months to years after appropriate treatment with antibiotics.

### Symptoms

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#### Early Localized Stage (3-10 days post bite)

- Red expanded rash shaped like a bull's eye (erythema migrans), rash likely is warm to the touch and not itchy or painful (not present in 20-30% of cases)
- Fatigue
- Fever
- Headache
- Muscle and joint pain
- Swollen lymph nodes

#### Untreated short term (days to weeks post bite)

- Additional rashes occur
- Facial palsy
- Severe headaches
- Neck stiffness
- Pain/swelling in large joints
- Shooting pain
- Heart palpitations

#### Untreated long term (months to years post bite)

- Arthritis
- Numbness/tingling in hands or feet
- Short-term memory loss

### Prevention

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- Avoid areas where ticks are likely to be, such as tall grass, wooded areas, and leaf litter.
- Wear hat, long pants, tucked long sleeve shirt, and tuck pant legs into socks.
- Use DEET containing repellants on exposed skin and clothing.

- Use permethrin containing repellants on clothing and gear. Never use permethrin on exposed skin.
- Perform daily tick checks after field work.

## First Aid Treatment

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- Remove ticks immediately using tweezers. Grasp the tick as close to the skin surface as possible and pull upward in a steady motion.
- Clean the area thoroughly with soap and water.
- Monitor bite area for rash.
- If you develop any symptoms within several weeks of being bitten, seek medical attention. Make sure you tell the physician that you were bitten by a tick, and approximately how long ago the bite occurred. Treatment will likely consist of oral antibiotics for the early stages. More severe cases may require intravenous medication.

## References and Additional Resources

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- CDC [Lyme Disease](#)
- Adapted from *Lyme Disease Fact Sheet*, by University of Maryland: Department of Environmental Safety, Sustainability & Risk (<https://essr.umd.edu/about/research-safety/field-research-safety/planning>) with permission.