

## COMMON INFECTIOUS DISEASES -SERIES 1

This article is the first in a series of educational material on specific Infectious Diseases, other than COVID-19.

**Escherichia Coli (E. coli):** E. coli is a broad group of bacteria, with Shiga toxin-producing E. coli (STEC) being the most harmful. It is found in the environment, food sources, and in the intestines of humans and animals. Infection results from exposure to the bacteria, even in small amounts. The most common source of E. coli infection is eating contaminated foods.



Symptoms include stomach cramps and pain, watery to bloody diarrhea, nausea and vomiting, and low-grade fever. These generally start 3-4 days following exposure, with healthy adults recovering within a week. Children, older adults, pregnant women, and immuno-compromised individuals are at a higher risk for serious illness. The most serious complication is life -threatening kidney failure called Hemolytic Uremic Syndrome (HUS).

### Sources of Infection:

1. Contaminated food- raw ground beef, unpasteurized milk and juice, leafy greens (spinach, lettuce), sprouts.
2. Contaminated water- ground and surface water used to irrigate crops that has been contaminated by human or animal feces. Municipal water supplies can become contaminated as well as private wells and swimming pools.
3. Person to person- this exposure to E. coli results when hands are not properly washed. It can occur between family members and children visiting petting zoos and animal barns.

Diagnosis: lab testing of stool specimens is done to determine the presence of harmful E. coli bacteria when severe symptoms are present: diarrhea more than 3 days, bloody stool, high fever, little urine passage, and much vomiting.

Treatment: Supportive therapy is used, hydration being key. Antibiotics and anti-diarrheal medications are not given as they may increase the risk for developing life-threatening kidney failure (HUS). There is no vaccine or specific medication for the treatment of E. coli infection.

Prevention: prevention is directly related to the sources of infection. Here are some useful tips from the CDC and WebMd:

- Wash fresh produce, especially leafy greens, with running water.
- Avoid unpasteurized dairy and juice (apple juice/cider in particular).
- Cook meats to “no longer pink”: ground beef and pork to 160 degrees, beef steaks and roasts to 145 degrees.
- Do not place cooked meat on the same plate as raw meat.
- Wash utensils that have been in contact with raw meat and fresh produce in hot soapy water.
- Separate cutting boards for raw meats and fresh produce.
- Wash hands before and after food prep, after using the bathroom, and changing diapers. Children should wash their hands after bathroom contact, before eating, and after contact with animals. Soap and water cleansing is best; use hand sanitizer if soap and water is not available.



- Avoid swallowing lake or pool water, washing hands often.

During the past 3 years, E. coli outbreaks have been primarily due to ground beef, Romaine lettuce (ready to eat salads), and sprouts (alfalfa and clover). Unfortunately, investigators are not always able to find the source. Outbreaks are most common during the months of June through September.

**Lyme Disease:** Lyme disease is a bacterial infection caused by the bite of infected black-legged ticks, also known as deer ticks. It is the most common vector-borne (transmitted by a living organism) disease in the United States. Ticks are tiny, about the size of a poppy seed or pin head. They can hide in the hair, armpits, groin, and behind the knees. Ticks must be attached 36-48 hours to transmit the disease.



The initial symptoms from an infected tick bite include fever and chills, headache, fatigue, swollen lymph nodes, and a characteristic “bullseye” rash that is not painful or itchy. The symptoms usually occur 3-30 days following the bite. If left untreated, the disease can spread to the joints, heart, and nervous system and cause serious, long-term illness.

Diagnosis: An individual is diagnosed with Lyme disease by taking a history of exposure to ticks in areas where Lyme disease is prevalent, looking at signs and symptoms experienced, and the results of blood tests. The blood tests measure the antibodies the body is making to fight the bacteria.

Removal: take a pair of fine-tipped tweezers, pulling the tick upward with steady pressure. Clean the area with rubbing alcohol or soap & water.



Treatment: A few weeks of antibiotic therapy is usually successful in treating Lyme cases. Treatment does not create an immunity to Lyme disease. If you are bit again by an infected tick, you can develop the illness again!

Prevention: There are several steps you can take to prevent Lyme Disease per CDC guidelines.

1. Use insect repellent containing DEET, eucalyptus, or oil of lemon. There are also chemical products that are effective and can be purchased.
2. Wear pants and socks when in wooded areas or when handling fallen leaves.
3. Shower ASAP (or within 2 hours) after spending time outdoors, using a washcloth.
4. Check for ticks daily: hair, around the ears, armpits, groin, and behind the knees.
5. Tumble dry clothes on high heat for 10 minutes. If clothing is damp, dry the clothing first, then tumble dry on high heat for 10 minutes.
6. A chemical called permethrin can be applied to clothing and camping gear.
7. There is no vaccine for Lyme disease at the present time.

For more information and printable material on these infectious diseases, visit the CDC website.

~ Sue Schuelke  
State CHE Chair