

Short Communication

## Local epidemiology and clinical manifestations of Lyme disease

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Lyme disease is caused by the bacterium *Borrelia burgdorferi* and is transmitted to humans by the bite of infected black-legged ticks. Typical symptoms include fever, headache, fatigue, and a characteristic skin rash called erythema migrans. If left untreated, infection can spread to joints, the heart, and the nervous system. Lyme disease is diagnosed based on symptoms, physical findings (e.g., rash), and the possibility of exposure to infected ticks (Figure 1); laboratory testing is helpful in the later stages of disease. Most cases of Lyme disease can be treated successfully with a few weeks of antibiotics. However, there is no acquired immunity after the recovery and there is no current useful vaccine available. In Italy the vaccine for Lyme disease was withdrawn in the 2002. Steps to prevent Lyme disease include using insect repellent, removing ticks promptly, landscaping, and integrated pest management. The ticks *Ixodes ricinus* that transmit Lyme disease can occasionally transmit other tick-borne diseases as well.

In the USA Lyme disease is endemic in the East Coast and in the region of Lakes with a top in Connecticut. Canada, Japan, Cina, Australia are also endemic areas. In Italy the first Lyme case was described in 1983 and 2616 cases have been described from 1986 to 2001. Emilia Romagna is an endemic area, due to the environment with lakes, woods and marshy areas. In this Region 722 cases were reported from 1996 to 2007.

Lyme disease is important for Public Health: it is the most widespread disease transmitted by a vector; its transmission is increasing all over the world; there is high risk of exposure in the population; it is possible to avoid the chronic, disabling disease infection causes.

When a tick bites there are some important things to do: rapid removal of the tick; give the right information; do not give antibiotics immediately;

control the spot daily for 30-40 days at least. Only tweezers should be used for tick removal. Application of heat (matches, etc) and application of various substances such as oil, petrol, petroleum, tryelin, acids and so on must be avoided.

Lyme disease does not necessarily follow when someone is bitten by a tick: only 3-10% of ticks are infected and the risk of catching the disease is very low if removal is done correctly and the patient is immunocompetent. If the patient has no symptoms after 30-40 days he/she may be considered healthy. If the patients show symptoms after this period, it is necessary to request examination by a specialist.



**Figure 1:** Typical erythematous reaction around a tick bite in a young boy.