



Lyme Disease Prevention

Spirochete Transmission and Ticks

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The spirochetal agent of Lyme disease, *Borrelia burgdorferi*, is transmitted to humans through a bite of a nymphal stage deer tick *Ixodes scapularis* (or *Ixodes pacificus* on the West Coast). The duration of tick attachment and feeding is a key factor in transmission. Proper identification of tick species and feeding duration aids in determining the probability of infection and the risk of developing Lyme disease.

Many kinds of ticks will bite people, but only *Ixodes scapularis* (or *I. pacificus*) carries *Borrelia burgdorferi*.

I. Scapularis can be recognized by shape, size, and coloring. Adult stage ticks are about the size of an apple seed.

Nymphs are tiny, about the size of the head of a pin. About 25% are infected and nymphs cause about 95% of the Lyme disease cases.



FEMALE

NYMPH

Infected nymphs begin to transmit *Borrelia burgdorferi* 36 hours after attachment. The nymph increases in size as feeding progresses (see below).

Any attached nymph should be promptly removed. Its appearance and size indicates the duration of feeding and probability of *B. burgdorferi* transmission.

SCALE:  1 mm



FEEDING DURATION IN HOURS

0

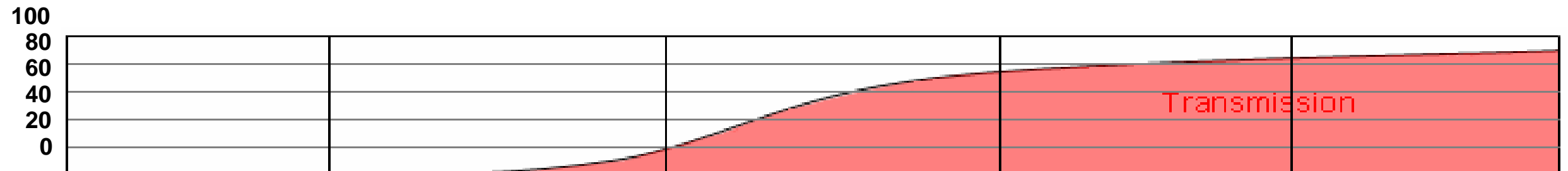
24

48

72

>96

PROBABILITY (%)
OF TRANSMITTING
Borrelia burgdorferi



NOTE: TICKS APPEAR LARGER THAN ACTUAL SIZE. REFER TO SCALE.

Prepared by Durland Fish, Richard Falco & John Koethe © 2006