

## Prevention and Prophylactic Treatment of Potential Lyme Disease

The following statements refer to what can be done after a tick bite, before any possible symptoms of Lyme disease develop. We also discuss how to minimize the potential of getting a tick bite. We do not discuss the actual diagnosis and treatment of Lyme disease once it has developed. This is another controversial topic and will be discussed as a future topic.

Lyme disease is relatively common in our geographic area. There is a considerable amount of anxiety about tick bites and how best to prevent Lyme disease after getting a tick bite. The first issue is how to prevent getting tick bites in the first place. See below the advice we give to our patients. \*\*\*

The second issue is what to do if we, or our children get a tick bite. There is a lot of confusion and worry about this issue. In order to potentially develop Lyme disease after a tick bite, certain criteria have to be met. The first is that, obviously, the tick needs to be a Lyme tick (i.e. very small, as opposed to the more common medium and large sized dog ticks). The second is that the tick needs to have been on the body for at least 24-36 hours, and by then, is typically engorged. The third is that the treatment needs to be initiated within 72 hours of the tick bite. Many patients request prophylactic treatment at this stage. The two antibiotics most commonly used, in a SINGLE DOSE, have been amoxicillin and doxycycline. There have been three trials using amoxicillin, none of which showed any benefit in the prevention of Lyme disease. (Please note that we're **not** discussing the known benefit of amoxicillin when Lyme has already been diagnosed, only in PREVENTING the development of Lyme). However, it should be noted that these trials were not large, and might have missed a small benefit. There has been one trial using a single, higher than usual dose of doxycycline, that did show some benefit. Of the group of people with engorged Lyme ticks that had been present for 24-36 hrs, in those patients treated with a single 200 mg dose of DOXYCYCLINE within 72 hrs of the tick bite, less than 1% developed Lyme disease. In the group not treated, 3% developed Lyme. It should be noted that though there was benefit, it was not dramatic. The group that received doxycycline at this high dose (the typical treatment dose is 100 mg, which is usually tolerated fine, but has not been shown to be effective in the prevention of Lyme disease), had a higher incidence of side effects, mainly nausea and vomiting.

This information needs to be considered in the context that the early treatment of Lyme disease, once it develops, and usually showing itself with a rash, is very efficacious, easily over 90% effective.

The official recommendations for prophylactic treatment of tick bites are the following:

- 1) A deer tick bite, as opposed to another tick
- 2) The tick has been on at least 24-36 hrs and is engorged
- 3) Contact with the doctor within 72 hrs of the bite
- 4) Able to take doxycycline ( > 8 yrs old) – ***this last criteria is important as typically amoxicillin is given to children less than 8 yrs of age due to the potential adverse effect of tooth discoloration with the use of doxycycline. We do not know if giving a single 200 mg dose of doxycycline to a child will lead to tooth discoloration, though we suspect the incidence would be very low with only a single dose. Some doctors might prescribe amoxicillin to children, but it's important to realize that there is no evidence supporting it's effectiveness at the present time.***

We wish to emphasize that prophylactic treatment, while it's helpful, does not have dramatic benefits according to studies. On the other hand, treatment of early stage Lyme disease is extremely successful.

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Lyme disease prevention:

Once the overnight low is above freezing for a few nights, ticks become active.

Check for ticks daily, preferably with a lighted magnifying glass. Think like a tick: check the areas where they can be warm, hidden and likely to avoid notice such as armpits, behind or in the ear, creases in the groin area, back of knee, bellybutton, under breasts.

If you discover a small tick imbedded in the skin, the procedure is to:

- 1) Get a piece of adhesive tape
- 2) Using a tweezer or specially-designed tool, remove the tick at the spot where it is imbedded in the skin and immediately place it on the adhesive tape. You really don't want to lose it. You also don't want to alarm the tick by trying to smother it with Vaseline or burning it with a match or any other method. This causes the tick to disgorge its stomach contents into your body before it dies, thereby increasing the likelihood that it will transmit the organism which causes Lyme disease.
- 3) Put the taped-up tick in the garbage where it will decompose without spreading disease.
- 4) If the tick appears to be engorged, call the office to get a prescription for one dose of the age and size-appropriate antibiotic which has been documented to reduce the transmission of the Lyme bacteria by up to 75%. The antibiotic does not have to be taken immediately but must be taken within 3 days of removing the tick to have this effect.