CME CREDIT

ONE MINUTE CONSULT

BRIEF QUESTIONS AND ANSWERS ON CURRENT CLINICAL CONTROVERSIES

Q: Who should receive the Lyme disease vaccine?

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A: ALTHOUGH LYME DISEASE is the most common vector-borne illness in the United States, not everyone needs to be immunized against it—not even in areas in which the *Ixodes* tick (which transmits the culprit spirochete *Borrelia burgdorferi*) is endemic.

When deciding if a patient is a candidate for the Lyme disease vaccine (LYMErix), we should not only consider geographic risk of infection, but also whether the patient's normal, everyday activities and behavior expose him or her to tick bites, and whether he or she has previously been exposed. Contrary to popular belief, Lyme disease is most often acquired near the home.

CRITERIA FOR VACCINATION

LYMErix, the first vaccine approved for the prevention of Lyme disease in the United States, is approved for use in people ages 15 to 70.

Prime candidates

The best candidates for Lyme disease vaccine are people who live in moderate-risk and high-risk areas (FIGURE 1) and whose work or recreation brings frequent or prolonged exposure to tick bites. People who travel to endemic areas and anticipate prolonged exposure are also candidates, provided there is adequate time to complete the vaccine schedule.

Children are the group with the highest rate of Lyme disease infection. Unfortunately, the current vaccine is not approved for use in children.

Previous infection does not always confer immunity. People who have already had Lyme disease and meet the above exposure criteria for vaccination should be vaccinated.

When is vaccination not recommended?

Due to a lack of data from randomized controlled trials, vaccination for Lyme disease is currently not recommended in the following groups:

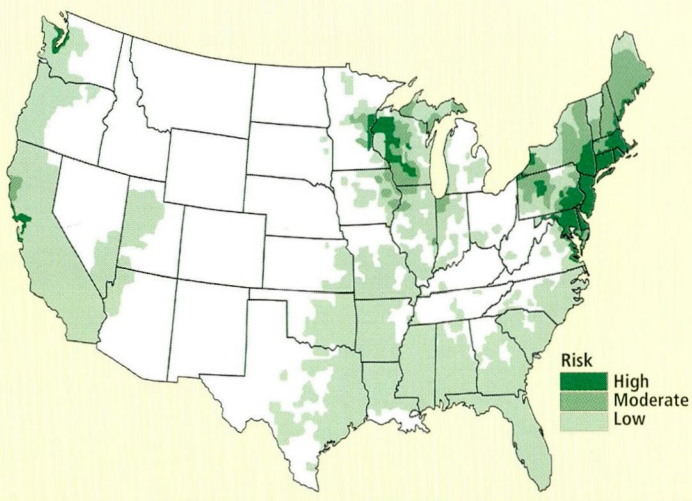
- Pregnant women
- Children under age 15
- Adults over age 70.

In people undergoing treatment for treatment-resistant Lyme arthritis, the vaccine may cause an immune reaction that theoretically could worsen the arthritis, and therefore, vaccination is not recommended. People who live in a high-risk region but whose activities bring minimal or no exposure do not need vaccination.

VACCINE FACTS

The Lyme disease vaccine contains an outer surface protein of *B burgdorferi* grown in genet-

Regions of high, moderate, and low risk for Lyme disease



SOURCE: CENTERS FOR DISEASE CONTROL AND PREVENTION

FIGURE 1

ically modified *Escherichia coli*. Therefore, it poses no risk of iatrogenic infection.

Dosage. The vaccine is given in three intramuscular doses of 0.5 cc. After the first dose, the second is given at 1 month and the third at 12 months.

Side effects are generally minor and include discomfort at the injection site in 24% of patients and flulike symptoms (myalgia, fever, chills) in 3.2%.

Efficacy. The vaccine is not 100% effective. In two large clinical trials, efficacy was 49% to 68% after two doses and 76% to 92% after the third dose. After vaccination, tests for anti-*B burgdorferi* antibodies may become positive. Based on this information, it could be assumed that there is less than a 50% possibility of vaccine protection after the first dose. There appear to be no data concerning protection after the first dose.

Duration of immunity is not known, nor is the need for booster doses. As more is learned about the vaccine further recommendations will be issued concerning the need for revaccination. Currently, practitioners administer the three standard doses.

Cost. About $60 per dose, with total cost to the patient depending on office fees.

SUGGESTED READING

Appendix. Methods used for creating a national Lyme disease risk map. MMWR 1999; 48(RR07):21–24.

Dennis DT. Recommendations for the use of Lyme disease vaccine. MMWR 1999; 48(RR07):1–17.

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Sigal LH, Zahradnik JM, Lavin P, et al. A vaccine consisting of recombinant *Borrelia burgdorferi* outer-surface protein A to prevent Lyme disease. N Engl J Med 1998; 339:216–222.

Steere AC, Sikand VK, Meurice F, et al. Vaccination against Lyme disease with recombinant *Borrelia burgdorferi* outer-surface lipoprotein A with adjuvant. N Engl J Med 1998; 339:209–215.