



# CONNECTICUT EPIDEMIOLOGIST

State of Connecticut Department of Health Services  
Frederick G. Adams, D.D.S., M.P.H. Commissioner

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## BABESIOSIS

In the past year, five cases of babesiosis have been reported to the Epidemiology Program. All of the cases involved residents of Old Mystic and Mystic, Connecticut whose outdoor activities were limited largely to that area. Four of the cases occurred in July - August, 1989. None of the persons affected remembered being bitten by a tick. Several suspect cases are also being investigated; additional cases are possible. Investigators from the Epidemiology Program and the Connecticut Agricultural Experiment Station in collaboration with Dr. Joseph Gadbow at the Lawrence and Memorial Hospitals are trying to identify the source of infection. We urge Connecticut physicians to consider the diagnosis and report all known or suspected cases to Dr. Eric Mintz at the Epidemiology Program (566-5058).

Babesiosis is a relatively rare disease, caused by infection with a protozoan parasite of red blood cells, *Babesia microti*.<sup>1</sup> The parasite's natural host in this area appears to be the white-footed mouse, but may include other rodents, such as the meadow vole. The vector for human infection is the deer tick, *Ixodes dammini*.

Symptoms usually develop one to four weeks after exposure, but longer incubation periods have been reported. Fever, chills, fatigue, anorexia, and headache occur most commonly; in addition, diaphoresis, myalgias, arthralgias, and

nausea are frequently noted. On physical examination, fever and mild hepatosplenomegaly are often the only abnormal findings. The hematologic picture is characterized by anemia and thrombocytopenia, with a low or normal white blood cell count and differential. Parasitemia from 1% to 20% is often detectable on the peripheral blood smear. Elevated levels of lactic dehydrogenase, bilirubin, and the transaminases may be seen. Serologic testing for babesiosis is done at the Centers for Disease Control and is available through the state health department laboratory.

Some patients with babesiosis are only mildly ill, and asymptomatic cases have been documented. However the infection is more severe in the the elderly and in infants, and can be life-threatening in persons without a functioning spleen or who are otherwise immunosuppressed.

There have been less than 200 confirmed cases of human babesiosis in the United States in the last ten years. Most cases have been reported from endemic areas such as Nantucket, Martha's Vineyard, Shelter Island, Fire Island, Block Island, and parts of Wisconsin. Until 1988 only one case had been reported in a Connecticut resident who had not traveled to one of these areas.

### Reference

1. Golightly LM, Hirschorn LR, Weller PF. Fever and headache in a splenectomized woman. *Rev Infect Dis* 1989;11:629-37.



## LYME DISEASE ISSUE

The June 1989 issue of **CONNECTICUT MEDICINE**, the journal of the Connecticut State Medical Society is devoted to the topic of Lyme disease. The State of Connecticut Department of Health Services has a limited supply of copies for physicians who are not members of the Connecticut State Medical Society. Physicians who would like a copy of the journal should call the Epidemiology Program at 566-5058, or write to Matthew Cartter, M.D., Epidemiology Program Coordinator, State of Connecticut Department of Health Services, Hartford, CT 06106.



## LYME DISEASE SURVEILLANCE

In 1988, 728 cases of Lyme disease were reported to the State Department of Health Services. The overall incidence rate for Connecticut was 22 per 100,000 population. In January - July, 1989, 394 cases were reported (Table 1).

Table 1. Reported Lyme disease cases by county, Connecticut, January - July, 1989

County	Cases	% of Total
New London	157	40%
Middlesex	63	16%
Tolland	17	4%
Windham	10	3%
Fairfield	66	17%
New Haven	31	8%
Litchfield	6	1%
Hartford	38	10%
Unknown	6	1%
<b>TOTAL</b>	<b>394</b>	<b>100%</b>

Erythema migrans (EM) occurred in 283 (72%) cases and 111 (28%) cases presented with a systemic manifestation and a positive serologic test for antibody to Borrelia burgdorferi. Of the

111 cases without EM but with a systemic manifestation, arthritic symptoms occurred in 77 (69%), neurologic manifestations occurred in 44 (40%) and cardiac complications occurred in 14 (13%) of the cases. Some cases had more than one systemic manifestation.

Physicians and other health care professionals who diagnose and suspect a case of Lyme disease are required to submit a report to the local and state health departments. For surveillance purposes, a case of Lyme disease is defined as 1) erythema migrans (EM) or 2) characteristic arthritic, neurologic, or cardiac manifestations of Lyme disease with a positive serologic test for antibody to B. burgdorferi.

When reporting, the physician should clearly indicate symptoms and serologic results (if available) in addition to patient's name, town of residence, age and date of onset. A standard form, known as the Communicable Disease Report (PD-23), is available for reporting Lyme disease. This form may be obtained from the State of Connecticut Department of Health Services, Epidemiology Program, 150 Washington Street, Hartford, CT 06106; telephone: 566-5058. If clinical information is not supplied on the PD-23 form, a separate Lyme Disease Report Form will be sent to the reporting physician for completion.



## INSECT REPELLANTS USE WITH CAUTION

Public concern about Lyme disease, which is transmitted by infected deer ticks, and concern about this year's large mosquito population may cause some people to apply on the skin excessive amounts of insect repellents with DEET (N,N-diethyl-m-toluamide) for prolonged periods of time, thus increasing the chance of adverse reactions.

While repellents with DEET have been used by the general public for more than 30 years, the use of highly concentrated products--more than

50% DEET--by the general public is relatively new and potentially increases the risk of adverse reactions.

In general, reported adverse effects in adults using DEET are limited to skin reactions. However, there have been reports of serious neurological problems in children as a result of frequent and excessive application of DEET-containing insect repellents on the skin. Neurological involvement has ranged from slurred speech and confusion to seizures and coma. It must be emphasized that these reactions are uncommon.

DEET products, which can be used on skin or clothes, contain different concentrations of the chemical. The best concentration to prevent tick bites is not known, but one study suggests that 20 - 30% DEET on clothing is about 90 % effective. This concentration is also effective against mosquitos. If the product label does not specifically mention that the repellent is effective against ticks, the product may not keep ticks from attaching to people.

In Connecticut, in addition to DEET, a pesticide named permethrin (Permanone) is available as a clothing spray for protection against both mosquitos and ticks. Permethrin is not to be used on the skin. The combination of DEET and permethrin-treated clothes may provide the best protection against mosquito and tick bites.

The Department urges physicians to pass on the following recommendations to their patients who use insect repellants:

- Use all repellents sparingly (1 to 2 times per day).
- Avoid prolonged and excessive use of DEET. Frequent reapplication and saturation of skin do not increase effectiveness. Repeat applications (3 to 4 times per day) or treatments that heavily cover the skin increases the likelihood of adverse reactions. Use

only enough repellent to cover exposed skin and/or clothing; do not treat skin that will be under clothing.

- Particularly with children, avoid applying the higher concentration products to the skin. To increase protection without using more chemicals, wear long sleeves and long pants when possible and apply repellent to clothing.
- Avoid use of any DEET products on damaged skin. Persons with sunburns, cuts and other skin conditions, such as psoriasis, should avoid using DEET-containing products on affected skin. Studies have shown DEET is readily absorbed through the skin. Damaged skin increases absorption.
- Apply repellents in a manner to avoid inhaling or ingesting the product. Keep repellents out of eyes.
- Do not apply repellents to portions of children's hands that are likely to have contact with their eyes or mouth.
- After returning indoors, wash treated skin with soap and water.
- If you suspect that you or your child are reacting to an insect repellent, wash treated skin and then call your doctor. When you go to the doctor, take the repellent with you.
- Your doctor can get specific medical information about the active ingredients in repellents and other pesticides by calling the National Pesticide Telecommunications Network at 1-800-858-7378 or by calling the Connecticut Poison Control Center at 1-800-343-2722. Both NPTN and the CT PCC operate 24 hours a day, 7 days a week.

#### Reference

Robbins PJ, Chernvack MG. Review of the biodistribution and toxicity of the insect repellent N,N-diethyl-m-toluamide (DEET). J Toxicol Environ Health 1986; 18:503-25.



## STAFF ASSIGNMENTS

As of July 1, 1989, Dr. Thomas Farley has taken a position with the Epidemiology Section in the Louisiana Department of Health and Hospitals in New Orleans. In his new position, he is on assignment as a Staff Epidemiologist for the Centers for Disease Control. Dr. Farley made important contributions to our Epidemiology Section during his 2-year assignment here with the CDC's Epidemic Intelligence Service. We wish him well in his new assignment.

In July 1989, Dr. Eric Mintz took up his post as the new Epidemic Intelligence Service Officer for Connecticut. Dr. Mintz is an internist who received his medical education at S.U.N.Y. Stony Brook, and completed his residency training at Harlem Hospital. He was Chief Medical Resident at Harlem Hospital in 1987-1988. He received his Masters in Public Health Degree from the University of Columbia School of Public Health in 1989.

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### REPORTS OF SELECTED COMMUNICABLE DISEASES,\* CONNECTICUT, YEAR-TO-DATE, 1988 - 1989

DISEASE	As of 8/4/89	As of 8/5/88	% CHANGE FROM 1988
AIDS	173	160	+8.1%
GONORRHEA	5,830	5,785	+0.8%
SYPHILIS P&S	659	637	+3.5%
MEASLES	200	10	+1900.0%
RUBELLA	0	0	0.0%
TUBERCULOSIS	90	73	+23.3%
HEPATITIS A	184	174	+5.7%
HEPATITIS B	94	139	-32.4%
SALMONELLOSIS	523	569	-8.1%
SHIGELLOSIS	97	60	+61.7%

\* Figures Subject To Change

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