

## **RECOVERY OF LYME SPIROCHETES BY PCR IN SEMEN SAMPLES OF PREVIOUSLY DIAGNOSED LYME DISEASE PATIENTS**

Presented by Dr. Gregory Bach, at the International Scientific Conference on Lyme Disease, April, 2001.

### **OBJECTIVE:**

Lyme disease, being a spirochete with pathology similar to syphilis, is often found difficult to treat due to the spirochete invading sanctuary sites and displaying pleomorphic characteristics such as a cyst (L-form). Because a significant portion of sexually active couples present to my office with Lyme disease, with only one partner having a history of tick exposure, the question of possible secondary (sexual) vector of transmission for the spirochete warrants inquiry. Additionally, sexually active couples seem to have a marked propensity for antibiotic failure raising the question of sexually active couples re-infecting themselves through intimate contact.

### **METHODS:**

Lyme spirochetes/DNA have been recovered from stored animal semen. Recovery of spirochete DNA from nursing mother's breast milk and umbilical cord blood by PCR (confirmed by culture/microscopy), have been found in samples provided to my office.

### **RESULTS:**

Surprisingly, initial laboratory testing of semen samples provided by male Lyme patients (positive by western blot/PCR in blood) and the male sexual partner of a Lyme infected female patient were positive approximately 40% of the time. PCR recovery of Lyme DNA nucleotide sequences with microscopic confirmation of semen samples yielded positive results in 14/32 Lyme patients (13 male semen samples and 1 vaginal pap).

ALL positive semen/vaginal samples in patients with known sexual partners resulted in positive Lyme titers/PCR in their sexual partners. 3/4 positive semen patients had no or unknown sexual partners to be tested. These preliminary findings warrant further study. Current a statistical design study to evaluate the possibility of sexual transmission of the spirochete is being undertaken.

Our laboratory studies confirm the existence of Lyme spirochetes in semen/vaginal secretions. Whether or not further clinical studies with a larger statistical group will support the hypothesis of sexual transmission remains to be seen. A retrospective clinical study is also underway. We are reviewing the medical records, collecting semen samples of patients who were previously diagnosed with current and previously treated Lyme disease are being asked to provide semen, pap and blood samples for extensive laboratory testing.

### **CONCLUSION:**

With the initially impressive data, we feel the subsequent statistical study on the sexual transmission of the Lyme spirochete will illuminate a much broader spectrum of public health concerns associated with the disease than the originally accepted tick borne vector. Sexual transmission.

See Military on Lyme Disease section: [www.geocities.com](http://www.geocities.com)

Or go directly to link: [cassia.org](http://cassia.org)

### **Spring Brings Tick Threat to Peace Enforcers JAMA, May15,1996, Medical News & Perspective**

Comments from Website author: JAMA writes here of a caution for troops in Bosnia-Herzegovina (which I believe also extends to the Mid-East region) that tick-borne disease is a danger. They caution that the same risks are additionally associated with mosquitoes, sand flies, fleas, mites, biting flies, and lice. "Desert Storm Syndrome" parallels one characteristic of Lyme in that this spirochetal infection also can be sexually transmitted to spouse.

AS THE HALFWAY point approaches in the year-long North Atlantic Treaty Organization (NATO) peace-enforcement effort in Bosnia-Herzegovina, military are putting more physicians' emphasis than ever on keeping US troops healthy. US Army, Air Force, Navy, and Marine Corps personnel in the former Yugoslavia are carrying laminated plastic cards reminding them of the diseases that can be transmitted via various vectors there, particularly ticks (JAMA. 1994;272:337-340 and p 1470 in this issue). With the arrival of warmer weather, ticks are expected to be a problem until as late as November.

Although there is talk of a few troops staying longer, November and early December are when US forces are supposed to withdraw (JAMA. 1996;275:24). President Clinton made a public pledge to extract US troops within a year of the December 20, 1995, date when NATO assumed peace-enforcement duties from the United Nations, meaning that pull-out planning could begin as early as next month.

In the meantime, US Military physicians are concerned about tick-borne encephalitis and Lyme Disease, for which *Ixodes ricinus* is the primary vector; Crimean-Congo hemorrhagic fever, for which *Hyalomma marginatum marginatum* is the primary vector, and perhaps boutonneuse fever rickettsiosis or Bhanja virus fever, also transmitted by the bite of an infective tick.

Troops are being urged to tuck their trousers in their boots and otherwise cover their skin when in tick-infested areas, use tick repellent, check frequently for the presence of ticks on clothing or skin, and to remove ticks carefully, seeking medical assistance if possible and applying an antiseptic to the bite site.

What's more, US troops are reminded that mosquitoes, sand flies, fleas, mites, biting flies and lice may also present a disease threat in specific locations. Use of repellents and "maintaining good personal hygiene" are urged.

In addition, there is the potential for hantavirus (Bunyaviridae family) infection, a cause of hemorrhagic fever or respiratory problems, and thought to result from direct contact with, or inhaling, dust contaminated by infected rodents' excretions. Thus, rats, mice, squirrels, voles, and other rodents also are a concern for the military in the Balkans (JAMA. 1996;275:422 and Lancet. 1996;347:30), and troops are being cautioned to "mist" or lightly spray previously unoccupied areas to avoid dust inhalation before mopping or sweeping preparatory to moving in. Removing trash and sources of water, sealing tiny wall openings, and using repellents can

reduce the chance of disease transmission from rodents, the troops are advised. They are told to seek immediate medical assistance if bitten or scratched by a rodent.

The US Army Center for Health Promotion and Preventive Medicine, Aberdeen (Md) Proving Ground, has been working on these and other health-precaution efforts. As always, American GIs have their own name for the laminated materials, calling them "tick cards."

So far, there has been no major increase in illness or injury among US troops participating in the peace-enforcement effort. John G. Jernigan, MD, the US Air Force brigadier general-designee who is command surgeon, Air Mobility Command, Scott Air Force Base, Ill, says that, to date, there has been no increase in demand for aeromedical evacuation above that normally required to support US troop activity in Europe other than Bosnia-Herzegovina.

-- by Phil Gunby

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All the other clinicians with whom the authors spoke agreed that Lyme has reached epidemic proportions. How is this possible? Obviously 25% of Americans haven't been bitten by one of a select few species of ticks. The answer is that Lyme is not transmitted just by ticks.

"Of the more than 5,000 children I've treated, 240 have been born with the disease," says Dr. Jones, who specializes in Pediatric and Adolescent Medicine. "Twelve children who've been breast-fed have subsequently developed Lyme. Bb can be transmitted transplacentally, even with in vitro fertilization; I've seen eight children infected in this way.

People from Asia who come to me with the classic Lyme rash have been infected by fleas and gnats."

Gregory Bach, D.O., presented a study on transmission via semen at the American Psychiatric Association meeting in November 2000. He confirmed Bb DNA in semen using the PCR test (Polymerase Chain Reaction). Dr. Bach calls Bb "a brother" to the syphilis spirochete because of their genetic similarities. For that reason, when he treats a Lyme patient in a relationship, he often treats the spouse; otherwise, he says, they can just pass the Bb back and forth, reinfesting each other.

Dr. Tang adds other avenues of infection: "Transmission may also occur via blood transfusion and through the bite of mosquitoes or other insects." Dr. Cowden contends that unpasteurized goat or cow milk can infect a person with Bb.

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Synthesis of the Work of Enderlein, Bechamps and other Pleomorphic Researchers