

NEWS: Recent study suggests that Lyme disease can be sexually transmitted

Press release, January 25, 2014:

Carmel, CA – A new study suggests that Lyme disease may be sexually transmitted. The study was presented at the annual Western Regional Meeting of the American Federation for Medical Research, and an abstract of the research was published in the January issue of the *Journal of Investigative Medicine*.

Lyme disease is a tick-borne infection caused by *Borrelia burgdorferi*, a type of corkscrew-shaped bacteria known as a spirochete (pronounced spiro'keet). The Lyme spirochete resembles the agent of syphilis, long recognized as the epitome of sexually transmitted diseases. Last summer the Centers for Disease Control and Prevention (CDC) announced that Lyme disease is much more common than previously thought, with over 300,000 new cases diagnosed each year in the United States. That makes Lyme disease almost twice as common as breast cancer and six times more common than HIV/AIDS.

“Our findings will change the way Lyme disease is viewed by doctors and patients,” said Marianne Middelveen, lead author of the study presented in Carmel. “It explains why the disease is more common than one would think if only ticks were involved in transmission.”

The present study was a collaborative effort by an international team of scientists. In addition to Middelveen, a veterinary microbiologist from Canada, researchers included molecular biologists Jennie Burke, Augustin Franco and Yean Wang and dermatologist Peter Mayne from Australia working with molecular biologists Eva Sapi and Cheryl Bandoski, family

practitioner Hilary Schlinger and internist Raphael Stricker from the United States.

In the study, researchers tested semen samples and vaginal secretions from three groups of patients: control subjects without evidence of Lyme disease, random subjects who tested positive for Lyme disease, and married heterosexual couples engaging in unprotected sex who tested positive for the disease.

As expected, all of the control subjects tested negative for *Borrelia burgdorferi* in semen samples or vaginal secretions. In contrast, all women with Lyme disease tested positive for *Borrelia burgdorferi* in vaginal secretions, while about half of the men with Lyme disease tested positive for the Lyme spirochete in semen samples. Furthermore, one of the heterosexual couples with Lyme disease showed identical strains of the Lyme spirochete in their genital secretions.

“The presence of the Lyme spirochete in genital secretions and identical strains in married couples strongly suggests that sexual transmission of the disease occurs,” said Dr. Mayne.

“We don’t yet understand why women with Lyme disease have consistently positive vaginal secretions, whilst semen samples are more variable. Obviously there is more work to be done here.”

Dr. Stricker pointed to the unknown risks of contracting Lyme disease raised by the study. “There is always some risk of getting Lyme disease from a tickbite in the woods,” he said. “But there may be a bigger risk of getting Lyme disease in the bedroom.”

Reference: *The Journal of Investigative Medicine* 2014;62:280-281.

Presented at the Western Regional Meeting of the American Federation for Medical Research, Carmel, CA, January 25, 2014.

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