

Researchers closer to ending debate around Lyme disease and ticks in Australia

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As debate surrounding whether Lyme disease is associated with tick bites in Australia continues to rage, a team of Murdoch University researchers, together with colleagues at the University of Sydney and Curtin University, have made a discovery that helps solve part of the puzzle.

The research has provided new information about the bacteria associated with the Australian paralysis tick (*Ixodes holocyclus*) and their potential to cause disease in people.

Lead researcher, Professor Peter Irwin of Murdoch University, has been collecting [ticks](#) from around Australia to study whether they carry

disease-causing bacteria.

"We did not find any evidence of the Lyme disease-causing bacterium *Borrelia burgdorferi*, but instead discovered a single isolate of a relapsing fever *Borrelia*, and other potential pathogens, including a new type of *Neoehrlichia* bacterium," Professor Irwin said.

The relapsing fever *Borrelia* and other bacteria found could potentially cause symptoms consistent with Lyme-like disease including extreme fatigue and nausea, but more research is needed to confirm this.

The research was complicated by the fact that bacteria in ticks are masked by large amounts of a single endosymbiont (an organism which lives within other organisms).

"We developed a new method of blocking amplification of the endosymbiont, or abundant [bacteria](#), to reveal potential pathogens," Professor Irwin said.

"This research represents a new approach to what will be a challenging investigation to answer the most controversial and difficult of questions about which, if any, microorganisms transmitted by ticks cause illness in people in Australia."

The research provides a clearer picture but will not put an end to debate regarding a link between Lyme disease and ticks in Australia.

"We are still a long-way from knowing what, if any, disease is transmitted by ticks in Australia," Professor Irwin said.

"We need to test many more ticks yet."

More information: "Inhibition of the endosymbiont *Candidatus*

Midichloria mitochondrii; during 16S rRNA gene profiling reveals potential pathogens in Ixodes ticks from Australia." *Parasites & Vectors* 2015, 8:345 [DOI: 10.1186/s13071-015-0958-3](https://doi.org/10.1186/s13071-015-0958-3)

Provided by Murdoch University

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