

Effective vaccination against borreliosis possible

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"Borreliosis" or "Lyme disease" is caused by the bacterium "Borrelia burgdorferi". In Austria approximately 16,000 people fall ill with borreliosis annually following a tick bite. Roughly every fifth tick in Austria carries the pathogen. Borreliosis can be treated effectively with antibiotics, however a prophylactic vaccination is not available. In a current multicentre study, in which the MedUni Vienna participated, the reliable effectiveness of a possible vaccine against borreliosis has now been proved.

The results of the study, which give rise to the hope of a usable preventive vaccine against borreliosis being developed, have now been published in the leading journal *Lancet Infectious Diseases*. A MedUni Vienna team from the University Department of [Clinical Pharmacology](#) led by Markus Müller and from the Institute for Specific Prophylaxis and Tropical Medicine led by Herwig Kollaritsch together with study centres in New York, Mainz and Tübingen as well as a team from Baxter AG were taking part in the study.

In a clinical phase I/II study the safety and efficacy was tested of the new, multivalent, recombinantly manufactured ingredient, OspA. Says Kollaritsch: "The study results demonstrate that the vaccine could provide effective protection against borreliosis and even against the strains predominant in Europe for the first time."

OspA (outer [surface protein](#) A) is a [protein molecule](#) which sits on the surface of the borrelia. If OspA is injected, it is detected by the immune

system as an alien structure in the body and this triggers an immune reaction. Says Kollaritsch: "Defence molecules are formed that act as protection – quite specifically directly inside the tick which takes them in during the time it is actively sucking blood. "

Borreliosis – sometimes accompanied by severe symptoms

Up until now borreliosis has been treated with a systematic antibiotic therapy – although only once symptoms appear such as headache and aching joints, exhaustion, raised temperature, or, at a later stage, even cramps or paralyses as well as inflammation of the heart muscle.

"Borreliosis is not a viral illness but a bacterial one, and therefore it can be effectively treated with antibiotics," declares the MedUni Vienna researcher. Thus [borreliosis](#) must also be clearly differentiated from the viral illness "TBE", against which an effective vaccine has long been available.

More information: Wressnigg, N. et al. Safety and immunogenicity of a novel multivalent OspA vaccine against Lyme borreliosis in healthy adults: a double-blind, randomised, dose-escalation phase 1/2 trial, *Lancet Infectious Diseases*.

Provided by Medical University of Vienna

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