**Developing new diagnostics for Lyme disease: *bona diagnosis, bona curatio***

Lyme disease is caused by the *Borrelia* bacterium, which is transmitted by ticks. Lyme disease is an emerging disease and the clinical presentation can be highly diverse. The basis of the diagnosis is antibody testing (serology). This is an indirect microbiological test; It does not detect the bacteria itself, but the immune response against the bacterium. Current direct tests (in blood or urine) have been shown to be invalid, insufficiently sensitive or specific, or have not been appropriately clinically validated. That said, current serological tests for Lyme disease also have their limitations. The most important are 1) false-negative results early in the disease, and in particular 2) the inability to distinguish between an Borrelia infection in the past and an active infection. However, in daily practice there is a need for tests that can distinguish between a Borrelia infection in the past and an active infection, since this determines whether someone should or should not be treated with (additional) antibiotics. Therefore, the purpose of this translational innovative research is to discover and describe novel discriminatory antibody tests using experimental models with the specific aim to translate these tests to humans with a first step to validation. Such a test would be cheap, readily standardized and easily implemented in regular microbiological laboratories. The research is conducted by the group of Prof. Dr. JWR Hovius, internist-infectiologist and researcher, as well as head of the Amsterdam Multidisciplinary Lyme disease Center - *This research could not be realized without the kind support of the horstingstuit-foundation.*