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## P. Bjark responds

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### COMMENTARY

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The author declares no conflicts of interest.

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Erlend Roaldsnes, Randi Eikeland and Dag Berild have commented on my article on Lyme borreliosis. They request more information than I can provide within the framework of a comment. The distribution of *Borrelia* genotypes is different in the USA and Europe. *Borrelia burgdorferi sensu stricto* is the only type occurring in the USA. It is 'arthritogenic'. In Norway, *Borrelia garinii* is the source of Bannwarth's syndrome, the most frequent type of neuroborreliosis. *Borrelia afzelii* causes acrodermatitis, atypical forms of neuroborreliosis [\(1\)](#), and may give rise to diffuse symptoms in the musculoskeletal system. Single knee arthritis is rare in our country. The authors state that borreliosis without swelling in the joints is controversial, especially in Europe, and provide three references, all of which stem from the USA. It is just because we have so little *Borrelia burgdorferi sensu stricto* that we need to be alert to other manifestations. The recent Norwegian article appears to be irrelevant in the context that I have addressed [\(2\)](#). In my assessment of serological findings I have relied on a Danish publication [\(3\)](#). The level of antibodies and other predictive factors are crucial. For assessment of atypical neuroborreliosis I refer to Strle and co-authors [\(1\)](#).

Musculoskeletal borreliosis is not widely mapped in Norway and most likely underdiagnosed. The trigger points of fibromyalgia are absent; in contrast, reference is made to sore stiffness in large muscle groups after limited physical activity that would normally not elicit such discomfort. I have found no descriptions of this elsewhere. High levels of *Borrelia* IgG antibodies are common, as are high specific immune complex levels in serum. We presented our findings at the International Conference on Lyme Borreliosis (Note: ICLB, not the 'alternative' one) in Irvine in 2008. We gave an account of 97 patients, 55 men (average age 54 years) and 42 women (average age 50 years), most of whom had been treated with doxycycline for four weeks. Functional scores and

decline of immune complexes showed encouraging results and aroused interest. However, all follow-up work was halted in 2010 when one co-author suddenly fell ill.

One reference from the USA concerns borreliosis versus fibromyalgia (4). The group that was reclassified from 'chronic Lyme disease' to fibromyalgia consisted of 83 % women. The gender distribution in our patient group was different. Reference is made to population studies conducted in the USA that soon will be 30 years old. Are these studies really what Norwegian doctors need to enhance their competence with regard to Lyme borreliosis?

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## LITERATURE

1. Strle F, Ruzić-Sabljic E, Cimperman J et al. Comparison of findings for patients with *Borrelia garinii* and *Borrelia afzelii* isolated from cerebrospinal fluid. *Clin Infect Dis* 2006; 43: 704–10. [PubMed][CrossRef]
2. Thortveit ET, Lorentzen ÅR, Ljøstad U et al. Somatic symptoms and fatigue in a Norwegian population with high exposure to ticks. *Ticks Tick Borne Dis* 2019; 10: 156–61. [PubMed][CrossRef]
3. Dessau RB, Ejlertsen T, Hilden J. Simultaneous use of serum IgG and IgM for risk scoring of suspected early Lyme borreliosis: graphical and bivariate analyses. *APMIS* 2010; 118: 313–23. [PubMed][CrossRef]
4. Hsu VM, Patella SJ, Sigal LH. "Chronic Lyme disease" as the incorrect diagnosis in patients with fibromyalgia. *Arthritis Rheum* 1993; 36: 1493–500. [PubMed][CrossRef]

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