Lyme disease is a zoonotic infection transmitted to humans by the bite of Ixodes ticks infected with Borellia spp. Recorded incidence in the UK has increased threefold over the last decade (0.5 to 1.5 reports per 100,000) due in part to improvement in and standardisation of serological testing but also likely with increased recognition of the wide spectrum of presentation. We assessed all Lyme serology requests between 2006 and 2011 from the Royal Devon and Exeter catchment area - one of the UK’s hotspots for Lyme disease. Testing peaked in 2008 and has since fallen. Of 206 positives, 21 attended the hospital with their illness and of those: 50% were paediatric, 56% presented with facial nerve palsy and 17% had meningitis. 72% in total had a neurological manifestation. Compared to published data from the same population in 2000–2005 Lyme incidence has doubled while the rate of hospital admission and neurological involvement has remained static, suggesting that an increased ascertainment of milder cases accounts for the increase. The breadth of neurological presentation and findings in serological, radiological and neurophysiological investigations is explored and adherence to EFNS guidance on treatment is assessed.