

Supplementary File 1: References of all papers included in the map (n=1098)

Aalto A, Sjowall J, Davidsson L, Forsberg P, Smedby O (2007) Brain magnetic resonance imaging does not contribute to the diagnosis of chronic neuroborreliosis. *Acta Radiologica* 48: 755-762.

Aase A, Hajdusek O, Oines O, Quarsten H, Wilhelmsson P, Herstad TK, Kjelland V, Sima R, Jalovecka M, Lindgren PE, Aaberge IS (2016) Validate or falsify: Lessons learned from a microscopy method claimed to be useful for detecting *Borrelia* and *Babesia* organisms in human blood. *Infectious Diseases* 48: 411-419.

Aberer E, Kahofer P, Binder B, Kinaciyan T, Schauerperl H, Berghold A (2006) Comparison of a two- or three-week regimen and a review of treatment of erythema migrans with phenoxymethylpenicillin. *Dermatology* 212: 160-167.

Aberer E, Bergmann AR, Derler AM, Schmidt B (2007) Course of *Borrelia burgdorferi* DNA shedding in urine after treatment. *Acta Dermato-Venereologica* 87: 39-42.

Abusamieh M, Liveris D, Ash J, Cavaliere LF, Aguero-Rosenfeld M, Carbonaro C, Schwartz I (2002) The utility of *Borrelia burgdorferi* specific PCR of synovial fluid as a diagnostic tool for Lyme arthritis. *Arthritis and Rheumatism* 46: S62-S63.

Abuzeid WM, Ruckenstein MJ (2008) Spirochetes in otology: are we testing for the right pathogens? *Otolaryngology - Head and Neck Surgery* 138: 107-109.

Adekoya N (2008) Incidence rates of selected infectious diseases in the most populated counties, United States, 2004. *Tropical Medicine and Health* 36: 33-39.

Adrion ER, Aucott J, Lemke KW, Weiner JP (2015) Health care costs, utilization and patterns of care following Lyme disease. *PLoS ONE* 10: e0116767.

Aenishaenslin C, Hongoh V, Cisse HD, Hoen AG, Samoura K, Michel P, Waaub JP, Belanger D (2013) Multi-criteria decision analysis as an innovative approach to managing zoonoses: results from a study on Lyme disease in Canada. *BMC Public Health* 13: 897.

Aenishaenslin C, Ravel A, Michel P, Gern L, Milord F, Waaub JP, Belanger D (2014) From Lyme disease emergence to endemicity: a cross sectional comparative study of risk perceptions in different populations. *BMC Public Health* 14: 1298.

Aenishaenslin C, Gern L, Michel P, Ravel A, Hongoh V, Waaub JP, Milord F, Belanger D (2015a) Adaptation and Evaluation of a Multi-Criteria Decision Analysis Model for Lyme Disease Prevention. *PLoS ONE* 10: e0135171.

Aenishaenslin C, Michel P, Ravel A, Gern L, Milord F, Waaub JP, Belanger D (2015b) Factors associated with preventive behaviors regarding Lyme disease in Canada and Switzerland: a comparative study. *BMC Public Health* 15: 185.

Aenishaenslin C, Bouchard C, Koffi JK, Pelcat Y, Ogden NH (2016a) Evidence of rapid changes in Lyme disease awareness in Canada. *Ticks and Tick-Borne Diseases* 7: 1067-1074.

Aenishaenslin C, Michel P, Ravel A, Gern L, Waaub JP, Milord F, Belanger D (2016b) Acceptability of tick control interventions to prevent Lyme disease in Switzerland and Canada: a mixed-method study. *BMC Public Health* 16: 12.

Aenishaenslin C, Bouchard C, Koffi JK, Ogden NH (2017) Exposure and preventive behaviours toward ticks and Lyme disease in Canada: Results from a first national survey. *Ticks and Tick-Borne Diseases* 8: 112-118.

Agarwal R, Sze G (2009) Neuro-Lyme disease: MR imaging findings. *Radiology* 253: 167-173.

Agosta F, Rocca MA, Benedetti B, Capra R, Cordioli C, Filippi M (2006) MR imaging assessment of brain and cervical cord damage in patients with neuroborreliosis. *American Journal of Neuroradiology* 27: 892-894.

Aguero-Rosenfeld ME, Donnarumma L, Zentmaier L, Jacob J, Frey M, Noto R, Carbonaro CA, Wormser GP (2002) Seroprevalence of antibodies that react with *Anaplasma phagocytophila*, the agent of human granulocytic ehrlichiosis, in different populations in Westchester County, New York. *Journal of Clinical Microbiology* 40: 2612-2615.

Aiyer A, Hennrikus W, Walrath J, Groh B, Ostrov B (2014) Lyme arthritis of the pediatric lower extremity in the setting of polyarticular disease. *Journal of Childrens Orthopaedics* 8: 359-365.

Ajamian M, Kosofsky BE, Wormser GP, Rajadhyaksha AM, Alaedini A (2013) Serologic markers of Lyme disease in children with autism. *Journal of the American Medical Association* 309: 1771-1773.

Al-Sharif B, Hall MC (2011) Lyme disease testing in children in an endemic area. *Wisconsin Medical Society* 110: 228-233.

Alaedini A, Fallon BA, Chandra A, Keilp JG (2010) Effect of IV Antibiotic Therapy on Antibody Profile in Patients with Post-Treatment Lyme Encephalopathy. *Annals of Neurology* 68: S58-S58.

Alario J, Baldwin K (2015) Treatment of North American Lyme neuroborreliosis with oral doxycycline and intravenous ceftriaxone: A comparative case series. *Neurology* 84: Supplement P6.309.

Ali A, Millet J, Vitulano L, Lee R, Colson E (2012) P05.22. Health beliefs and experiences of patients with chronic Lyme disease: a qualitative study. *BMC Complementary and Alternative Medicine* 12: 382.

Ali A, Vitulano L, Lee R, Weiss TR, Colson ER (2014) Experiences of patients identifying with chronic Lyme disease in the healthcare system: a qualitative study. *BMC Family Practice* 15: 79.

Altpeter E, Zimmermann H, Oberreich J, Peter O, Dvorak C, Swiss Sentinel Surveillance Network (2013) Tick related diseases in Switzerland, 2008 to 2011. *Swiss Medical Weekly* 143: w13725.

Ananjeva LP, Radenska-Lopovok SG, Potekaev NN, Koneva OA (2003) Joint involvement in Russian patients with Lyme borreliosis presenting with acrodermatitis chronica atrophicans. *Annals of the Rheumatic Diseases* 62: 521-521.

Andric B, Djecevic J, Nikcevic D, Dupanovic B, Terzic D, Dragas S (2011) Immunological aspects of Lyme borreliosis co-infection. *Allergy* 66: 304-304.

Andric B, Golubovic M, Dupanovic B, Terzic D (2012) Diagnostic evaluation of human babesiosis in Montenegro. *International Journal of Infectious Diseases* 16: e447.

Ang CW, Notermans DW, Hommes M, Simoons-Smit AM, Herremans T (2011) Large differences between test strategies for the detection of anti-Borrelia antibodies are revealed by comparing eight ELISAs and five immunoblots. *European Journal of Clinical Microbiology & Infectious Diseases* 30: 1027-1032.

Ang CW, Brandenburg AH, van Burgel ND, Bijlmer HA, Herremans T, Stelma F, Lunel FV, van Dam AP, on behalf of the Dutch Working Group on Diagnosis of Lyme borreliosis (2015) A Dutch nationwide evaluation of serological assays for detection of Borrelia antibodies in clinically well-defined patients. *Diagnostic Microbiology and Infectious Disease* 83: 222-228.

Anna MM, Escobar JD, Chapman AS (2012) Reported vectorborne and zoonotic diseases, U.S. Air Force, 2000-2011. *Medical Surveillance Monthly Report* 19: 11-12.

Antoniou M, Economou I, Wang X, Psaroulaki A, Spyridaki I, Papadopoulos B, Christidou A, Tsafantakis E, Tselentis Y (2002) Fourteen-year seroepidemiological study of zoonoses in a Greek village. *American Journal of Tropical Medicine and Hygiene* 66: 80-85.

Armed Forces Health Surveillance Center (2009) Lyme disease among U.S. military members, active and reserve component, 2001-2008. *Medical Surveillance Monthly Report* 16: 2-4.

Armed Forces Health Surveillance Center (2013a) The Reportable Events Monthly Report (REMR). *Medical Surveillance Monthly Report* 20: 23-25.

Armed Forces Health Surveillance Center (2013b) Surveillance snapshot: Lyme disease among beneficiaries of the Military Health System, 2001-2012. *Medical Surveillance Monthly Report* 20: 23.

Arnez M, Pleterski-Rigler D, Luznik-Bufon T, Ruzic-Sabljić E, Strle F (2002a) Children with multiple erythema migrans: are there any pre-treatment symptoms and/or signs suggestive for central nervous system involvement? *Wiener Klinische Wochenschrift* 114: 524-529.

Arnez M, Pleterski-Rigler D, Luznik-Bufon T, Ruzic-Sabljić E, Strle F (2002b) Solitary erythema migrans in children: comparison of treatment with azithromycin and phenoxymethylpenicillin. *Wiener Klinische Wochenschrift* 114: 498-504.

Arnez M, Luznik-Bufon T, Avsic-Zupanc T, Ruzic-Sabljić E, Petrovec M, Lotric-Furlan S, Strle F (2003a) Causes of febrile illnesses after a tick bite in Slovenian children. *Pediatric Infectious Disease Journal* 22: 1078-1083.

Arnez M, Pleterski-Rigler D, Luznik-Bufon T, Ruzic-Sabljić E, Strle F (2003b) Solitary and multiple erythema migrans in children: comparison of demographic, clinical and laboratory findings. *Infection* 31: 404-409.

Arnez M, Ruzic-Sabljić E (2010) Lyme borreliosis and acute peripheral facial palsy in Slovenian children. *Pediatric Infectious Disease Journal* 29: 182-184.

Arnez M, Ruzic-Sabljić E (2011) *Borrelia burgdorferi* sensu lato bacteremia in Slovenian children with solitary and multiple erythema migrans. *Pediatric Infectious Disease Journal* 30: 988-990.

Arnez M, Ruzic-Sabljić E (2012) The importance of the size of erythema migrans (EM) for diagnosis of Lyme borreliosis in Slovenian children. *Zdravniki Vestnik* 81: 470-479.

Arnez M, Ruzic-Sabljić E (2015a) Azithromycin Is Equally Effective as Amoxicillin in Children with Solitary Erythema Migrans. *Pediatric Infectious Disease Journal* 34: 1045-1048.

Arnez M, Ruzic-Sabljić E (2015b) Borrelial Lymphocytoma in Children. *Pediatric Infectious Disease Journal* 34: 1319-1322.

Arteagabeitia A, Galdos M, Fonollosa A, Lertxundi TX, Martinez-Alday N (2011) Clinical evaluation and OCT optic disc and macular analysis in 6 cases of neuroretinitis. *Neuro-Ophthalmology* 35: 536.

Aslan M, Kasapcopur O, Yasar H, Polat E, Saribas S, Cakan H, Dirican A, Torun MM, Arisoy N, Kocazeybek B (2011) Do infections trigger juvenile idiopathic arthritis? *Rheumatology International* 31: 215-220.

Atkinson SF, Sarkar S, Avina A, Schuermann JA, Williamson P (2014) A determination of the spatial concordance between Lyme disease incidence and habitat probability of its primary vector *Ixodes scapularis* (black-legged tick). *Geospatial Health* 9: 203-212.

Aucott J, Morrison C, Munoz B, Rowe PC, Schwarzwald A, West SK (2009) Diagnostic challenges of early Lyme disease: lessons from a community case series. *BMC Infectious Diseases* 9: 79.

Aucott JN, Crowder LA, Yedlin V, Kortte KB (2012a) Bull's-Eye and Nontarget Skin Lesions of Lyme Disease: An Internet Survey of Identification of Erythema Migrans. *Dermatology Research and Practice* 2012: 451727.

Aucott JN, Seifter A, Rebman AW (2012b) Probable late Lyme disease: a variant manifestation of untreated *Borrelia burgdorferi* infection. *BMC Infectious Diseases* 12: 173.

Aucott JN, Crowder LA, Kortte KB (2013a) Development of a foundation for a case definition of post-treatment Lyme disease syndrome. *International Journal of Infectious Diseases* 17: e443-449.

Aucott JN, Rebman AW, Crowder LA, Kortte KB (2013b) Post-treatment Lyme disease syndrome symptomatology and the impact on life functioning: is there something here? *Quality of Life Research* 22: 75-84.

Aucott JN, Soloski MJ, Rebman AW, Crowder LA, Lahey LJ, Wagner CA, Robinson WH, Bechtold KT (2016) CCL19 as a Chemokine Risk Factor for Post-Treatment Lyme Disease Syndrome: A Prospective Clinical Cohort Study. *Clinical and Vaccine Immunology* 23(9): 757-766.

Avery RA, Frank G, Eppes SC (2005) Diagnostic utility of *Borrelia burgdorferi* cerebrospinal fluid polymerase chain reaction in children with Lyme meningitis. *Pediatric Infectious Disease Journal* 24: 705-708.

Avery RA, Frank G, Glutting JJ, Eppes SC (2006) Prediction of Lyme meningitis in children from a Lyme disease-endemic region: a logistic-regression model using history, physical, and laboratory findings. *Pediatrics* 117: e1-7.

Ayaslioglu E, Erkek E, Kaygusuz S, Kilic D, Inal A, Keskin G (2004) Analysis of *Borrelia burgdorferi* antibody seroprevalence in patients with Behcet's disease using 3 different serological assays. *Turkish Journal of Medical Sciences* 34: 375-378.

Ayub S, Edwards L, Petrini JR, Critelli N, Lewis D, Kranwinkel R (2010) Lyme Disease Testing by Multiplexed Bead Analysis Using VlsE1 and pepC10 Antigens Compared With 2-Tiered Testing. *American Journal of Clinical Pathology* 134: 667-667.

Babady NE, Sloan LM, Vetter EA, Patel R, Binnicker MJ (2008) Percent positive rate of Lyme real-time polymerase chain reaction in blood, cerebrospinal fluid, synovial fluid, and tissue. *Diagnostic Microbiology and Infectious Disease* 62: 464-466.

Bachur RG, Adams CM, Monuteaux MC (2015) Evaluating the child with acute hip pain ("irritable hip") in a Lyme endemic region. *Journal of Pediatrics* 166: 407-411.e401.

Back T, Grunig S, Winter Y, Bodechtel U, Guthke K, Khati D, von Kummer R (2013) Neuroborreliosis-associated cerebral vasculitis: long-term outcome and health-related quality of life. *Journal of Neurology* 260: 1569-1575.

Bacon M, Biggerstaff RM, Schriefer BJ, Gilmore ME, Philipp RD, Jr., Steere MT, Wormser AC, Marques GP, Johnson AR, Barbara JB (2003) Serodiagnosis of Lyme disease by kinetic enzyme-linked immunosorbent assay using recombinant VlsE1 or peptide antigens of *Borrelia burgdorferi* compared with 2-tiered testing using whole-cell lysates. *Journal of Infectious Diseases* 187: 1187-1199.

Bacon RM, Mead PS, Kool JL, Postema AS, Staples JE (2004) Lyme disease - United States, 2001-2002. *Morbidity and Mortality Weekly Report* 53: 365-369.

Bacon RM, Kugeler KJ, Griffith KS, Mead PS (2007) Lyme disease - United States, 2003-2005. *Morbidity and Mortality Weekly Report* 56: 573-576.

Bacon RM, Kugeler KJ, Mead PS (2008) Surveillance for Lyme disease--United States, 1992-2006. *Morbidity and Mortality Weekly Report Surveillance Summaries* 57: 1-9.

Badawi A, Shering M, Rahman S, Lindsay LR (2017) A systematic review and meta-analysis for the adverse effects, immunogenicity and efficacy of Lyme disease vaccines: Guiding novel vaccine development. *Canadian Journal of Public Health* 108: E62-70.

Bagger-Sjoback D, Remahl S, Ericsson M (2005) Long-term outcome of facial palsy in neuroborreliosis. *Otology & Neurotology* 26: 790-795.

Bakken LL (2002) Role of experience and context in learning to diagnose Lyme disease. *Journal of Continuing Education in the Health Professions* 22: 131-141.

Bakker R, Aarts MC, van der Heijden GJ, Rovers MM (2012) No evidence for the diagnostic value of *Borrelia* serology in patients with sudden hearing loss. *Otolaryngology - Head and Neck Surgery* 146: 539-543.

Baldwin KD, Brusalis CM, Nduaguba AM, Sankar WN (2016) Predictive Factors for Differentiating Between Septic Arthritis and Lyme Disease of the Knee in Children. *Journal of Bone & Joint Surgery - American Volume* 98: 721-728.

Baranova E, Solov'ev P, Panfertsev E, Baranova A, Feduykina G, Kolombet L, Morshed MG, Biketov S (2014) Rational design of antigens to improve the serodiagnosis of tick-borne borreliosis in central regions of Russia. *Advances in Experimental Medicine and Biology* 807: 9-21.

Baranova NS, Bykanova MA (2012) Parkinson's syndrome in chronic neuroborreliosis. *European Journal of Neurology* 19: 339-339.

Barclay SS, Melia MT, Auwaerter PG (2012) Misdiagnosis of late-onset Lyme arthritis by inappropriate use of *Borrelia burgdorferi* immunoblot testing with synovial fluid. *Clinical and Vaccine Immunology* 19: 1806-1809.

Barone SR, Bohrer SS, Erhardt WA (2002) Parental knowledge of and attitudes toward LYMErix (recombinant Osp - a Lyme vaccine). *Clinical Pediatrics* 41: 33-36.

Barrial K, Roure-Sobas C, Carricajo A, Tigaud S (2009a) Lyme borreliosis: Descriptive study of 151 patients followed up in a university hospital, Lyon (France). *Clinical Microbiology and Infection* 15: S675.

Barrial K, Roure-Sobas C, Carricajo A, Tigaud S (2009b) Performance of four commercial immunoblots for serological confirmation of Lyme borreliosis in Rhone-Alpes (France). *Clinical Microbiology and Infection* 15: S173-S174.

Barrios JM, Verstraeten WW, Maes P, Aerts JM, Farifteh J, Coppin P (2013) Relating land cover and spatial distribution of nephropathia epidemica and Lyme borreliosis in Belgium. *International Journal of Environmental Health Research* 23: 132-154.

Bartosik K, Lachowska-Kotowska P, Szymanska J, Pabis A, Buczek A (2011) Lyme borreliosis in South-Eastern Poland: relationships with environmental factors and medical attention standards. *Annals of Agricultural and Environmental Medicine* 18: 131-137.

Bartunek P, Mrazek V, Gorican K, Varejka P, Bina R, Rozmarova P, Hulinska D, Janovska D (2005) Lyme borreliosis - waiting for Lyme carditis? A long-term prospective study. *Prague Medical Report* 106: 39-49.

Bartunek P, Gorican K, Mrazek V, Varejka P, Veiser T, Hercogova J, Hulinska D, Janovska D (2006) Lyme borreliosis infection as a cause of dilated cardiomyopathy. *Prague Medical Report* 107: 213-226.

Bartunek P, Gorican K, Veiser T, Taborsky M, Hulinska D (2007) Significance of *Borrelia* infection in development of dilated cardiomyopathy (a pilot study). *Prague Medical Report* 108: 339-347.

Bartůněk P, Goričan K, Mrázek V, Vařejka P, Hulínská D, Janovská D (2007) Information value of detection of borrelia antibodies in the healthy blood donors and in a population at risk. *Journal of Chinese Clinical Medicine* 2: 252-258.

Baskin E, Bayrakci US, Gulleroglu K, Kara T, Akova Y (2011) Uveitis in children: Single center experience [P064]. *Clinical and Experimental Rheumatology* 29 (2): 395.

Bayles BR, Evans G, Allan BF (2013) Knowledge and prevention of tick-borne diseases vary across an urban-to-rural human land-use gradient. *Ticks and Tick-Borne Diseases* 4: 352-358.

Bazovska S, Machacova E, Spalekova M, Kontrosova S (2005) Reported incidence of Lyme disease in Slovakia and antibodies to B. burgdorferi antigens detected in healthy population. *Bratislavske Lekarske Listy* 106: 270-273.

Beach C, Hart S, Nowalk A, Feingold B, Arora G (2015) Increasing burden of Lyme carditis in us children's hospitals. *Heart Rhythm* 1: S224.

Beaujean D, van Velsen L, van Gemert-Pijnen JE, Maat A, van Steenbergen JE, Crutzen R (2013a) Using risk group profiles as a lightweight qualitative approach for intervention development: an example of prevention of tick bites and Lyme disease. *JMIR Research Protocols* 2: e45.

Beaujean D, Gassner F, Wong A, Steenbergen JE, Crutzen R, Ruwaard D (2016a) Education on tick bite and Lyme borreliosis prevention, aimed at schoolchildren in the Netherlands: comparing the effects of an online educational video game versus a leaflet or no intervention. *BMC Public Health* 16: 1163.

Beaujean DJ, Bults M, van Steenbergen JE, Voeten HA (2013b) Study on public perceptions and protective behaviors regarding Lyme disease among the general public in the Netherlands: implications for prevention programs. *BMC Public Health* 13: 225.

Beaujean DJ, Gassner F, Wong A, van Steenbergen JE, Crutzen R, Ruwaard D (2013c) Determinants and protective behaviours regarding tick bites among school children in the Netherlands: a cross-sectional study. *BMC Public Health* 13: 1148.

Beaujean DJ, Crutzen R, Gassner F, Ameling C, Wong A, van Steenbergen JE, Ruwaard D (2016b) Comparing the effect of a leaflet and a movie in preventing tick bites and Lyme disease in The Netherlands. *BMC Public Health* 16: 495.

Bednarova J (2006) Cerebrospinal-fluid profile in neuroborreliosis and its diagnostic significance. *Folia Microbiologica* 51: 599-603.

Bennet L, Berglund J (2002) Reinfection with Lyme borreliosis: a retrospective follow-up study in southern Sweden. *Scandinavian Journal of Infectious Diseases* 34: 183-186.

Bennet L, Danell S, Berglund J (2003) Clinical outcome of erythema migrans after treatment with phenoxymethyl penicillin. *Scandinavian Journal of Infectious Diseases* 35: 129-131.

Bennet L, Fraenkel CJ, Garpmo U, Halling A, Ingman M, Ornstein K, Stjernberg L, Berglund J (2006a) Clinical appearance of erythema migrans caused by *Borrelia afzelii* and *Borrelia garinii* - effect of the patient's sex. *Wiener Klinische Wochenschrift* 118: 531-537.

Bennet L, Halling A, Berglund J (2006b) Increased incidence of Lyme borreliosis in southern Sweden following mild winters and during warm, humid summers. *European Journal of Clinical Microbiology & Infectious Diseases* 25: 426-432.

Bennet L, Stjernberg L, Berglund J (2007) Effect of gender on clinical and epidemiologic features of Lyme borreliosis. *Vector Borne and Zoonotic Diseases* 7: 34-41.

Bennet R, Lindgren V, Zwegberg W (2008) *Borrelia* antibodies in children evaluated for Lyme neuroborreliosis. *Infection* 36: 463-466.

Benoilid A, Tilikete C, Arndt C, Collongues N, Vighetto A, de Seze J (2011) Relapsing inflammatory optic neuropathy: Is it a new autoimmune disease? *Multiple Sclerosis* 1: S261-S262.

Berende A, ter Hofstede HJM, Vos FJ, van Middendorp H, Vogelaar ML, Tromp M, van den Hoogen FH, Donders ART, Evers AWM, Kullberg BJ (2016) Randomized Trial of Longer-Term Therapy for Symptoms Attributed to Lyme Disease. *New England Journal of Medicine* 374: 1209-1220.

Berenova D, Krsek D, Sipkova L, Lukavska A, Maly M, Kurzova Z, Horejsi J, Kodym P (2016) Short-term stability of *Borrelia garinii* in cerebrospinal fluid. *Folia Microbiologica* 61: 45-50.

Berglund J, Stjernberg L, Ornstein K, Tykesson-Joelsson K, Walter H (2002) 5-y Follow-up study of patients with neuroborreliosis. *Scandinavian Journal of Infectious Diseases* 34: 421-425.

Bergmann AR, Schmidt BL, Derler AM, Aberer E (2002) Importance of sample preparation for molecular diagnosis of Lyme borreliosis from urine. *Journal of Clinical Microbiology* 40: 4581-4584.

Bernat K, Dibernardo A, Lindsay R (2012) Challenges with Lyme disease diagnostics. *Canadian Journal of Infectious Diseases and Medical Microbiology* 23: 50B.

Beytout J, George JC, Malaval J, Garnier M, Beytout M, Baranton G, Ferquel E, Postic D (2007) Lyme borreliosis incidence in two French departments: correlation with infection of *Ixodes ricinus* ticks by *Borrelia burgdorferi sensu lato*. *Vector Borne and Zoonotic Diseases* 7: 507-517.

Bharadwaj A (2013) Ethic of consensibility, subaltern ethicality: The clinical application of embryonic stem cells in India. *Biosocieties* 8: 25-40.

Bil-Lula I, Matuszek P, Pfeiffer T, Wozniak M (2015) Lyme Borreliosis - the Utility of Improved Real-Time PCR Assay in the Detection of *Borrelia burgdorferi* Infections. *Advances in Clinical and Experimental Medicine* 24: 663-670.

Biletska H, Podavalenko L, Semenyshyn O, Lozynskij I, Tarasyuk O (2008) Study of Lyme borreliosis in Ukraine. *International Journal of Medical Microbiology* 298: 154-160.

Bilski B (2009) Occurrence of cases of borreliosis certified as an occupational disease in the province of Wielkopolska (Poland). *Annals of Agricultural and Environmental Medicine* 16: 211-217.

Binnicker MJ, Jespersen DJ, Harring JA, Rollins LO, Bryant SC, Beito EM (2008) Evaluation of two commercial systems for automated processing, reading, and interpretation of Lyme borreliosis Western blots. *Journal of Clinical Microbiology* 46: 2216-2221.

Bjoersdorff A, Wittesjo B, Berglund J, Massung RF, Eliasson I (2002) Human granulocytic ehrlichiosis as a common cause of tick-associated fever in Southeast Sweden: report from a prospective clinical study. *Scandinavian Journal of Infectious Diseases* 34: 187-191.

Blanc F, Jaulhac B, Fleury M, de Seze J, de Martino SJ, Remy V, Blaison G, Hansmann Y, Christmann D, Tranchant C (2007) Relevance of the antibody index to diagnose Lyme neuroborreliosis among seropositive patients. *Neurology* 69: 953-958.

Blanc F, Philippi N, Cretin B, Kleitz C, Berly L, Kremer S, Namer I, Jaulhac B, De Seze J (2013) Lyme Neuroborreliosis and Dementia. *Neurology* 80: 61.

Blanc F, Philippi N, Cretin B, Kleitz C, Berly L, Jung B, Kremer S, Namer IJ, Sellal F, Jaulhac B, de Seze J (2014) Lyme neuroborreliosis and dementia. *Journal of Alzheimer's Disease* 41: 1087-1093.

Bleyenheuft C, Lernout T, Berger N, Rebolledo J, Leroy M, Robert A, Quoilin S (2015) Epidemiological situation of Lyme borreliosis in Belgium, 2003 to 2012. *Archives of Public Health* 73: 33.

Blocher J, Wiefek J, Lange P, Eiffert H, Schmidt H (2012) Value of the lymphocyte transformation test to determine the acuity of neuroborreliosis. *Clinical Microbiology and Infection* 18: 593.

Bloor K (2002) Lyme and Tick-borne Infections Patient Survey.

Bloor K, Hale V (2013a) *An internet survey of Lyme patients experience of access to care.* <http://lymeresearchuk.org/wp-content/uploads/2012/04/lyme-article-june-2013-article-1-final-ver.pdf> (accessed 30 October 2017).

Bloor K, Hale V (2013b) *A patient survey of a community: Lyme patients experiences of health care*. <http://lymeresearchuk.org/wp-content/uploads/2013/09/article-2-webpub-sept-2013.pdf> (accessed 30 October 2017).

Bobba G, Olien PJ, Capuano F, Blocki FA, Schmidt JA (2006) LIAISON (R) Borrelia Assay: A recombinant antigen based, automated chemiluminescence immunoassay for the diagnosis of Lyme disease. *Clinical Chemistry* 52: A39-A39.

Bochnickova M, Szilagyiova M, Gardlik R (2012) Lyme borreliosis - epidemiological analysis of incidence in the northern region of Slovakia. *Epidemiologie, Mikrobiologie, Immunologie* 61: 3-8.

Boltri JM, Hash RB, Vogel RL (2002) Patterns of Lyme disease diagnosis and treatment by family physicians in a southeastern state. *Journal of Community Health* 27: 395-402.

Bonet Alaves E, Guerrero Espejo A, Cuenca Torres M, Gimeno Vilarrasa F (2016) Incidence of Lyme disease in Spain. *Medicina Clinica* 147: 88-89.

Bonin S, Stinco G, Patriarca Maria M, Trevisini S, di Meo N, Trevisan G (2016) Could co-infection with Anaplasma play a role in Borrelia-associated primary cutaneous marginal zone B-cell lymphomas? *Indian Journal of Dermatology, Venereology & Leprology* 82: 81-84.

Borg R, Dotevall L, Hagberg L, Maraspin V, Lotric-Furlan S, Cimperman J, Strle F (2005) Intravenous ceftriaxone compared with oral doxycycline for the treatment of Lyme neuroborreliosis. *Scandinavian Journal of Infectious Diseases* 37: 449-454.

Borgermans L, Goderis G, Vandevoorde J, Devroey D (2014) Relevance of chronic Lyme disease to family medicine as a complex multidimensional chronic disease construct: a systematic review. *International Journal of Family Medicine* 2014: 1-10.

Bossuyt N, Van Casteren V (2004) Tick bites, Erythema migrans and Lyme borreliosis: incidence and management by the GP in Belgium. *European Journal of Public Health* 14: 85-85.

Bouchard G, Peter O, Bonnet-Pierroz A, Vonlanthen R, Cosin P, Ammour N, Brevet AM, Broquedis P, Dehainault N, Perret C, Incaugarat B (2010) Evaluation of two automated tests on the Vidas instrument to detect anti-Lyme disease antibodies IgG and IgM in human serum, plasma and CSF. *Clinical Microbiology and Infection* 16: S622.

Boudova L, Kazakov DV, Sima R, Vanecek T, Torlakovic E, Lamovec J, Kutzner H, Szepe P, Plank L, Bouda J, Hes O, Mukensnabl P, Michal M (2005) Cutaneous lymphoid hyperplasia and other lymphoid infiltrates of the breast nipple: a retrospective clinicopathologic study of fifty-six patients. *American Journal of Dermatopathology* 27: 375-386.

Boulware DR, Forgey WW, Martin WJ (2003) Medical risks of wilderness hiking. *American Journal of Medicine* 114: 288-293.

Bozkurt H, Ciftci HI, Guducuglu H, Berktaş M, Korkoca H, Akdeniz H (2008) Investigation of borrelia burgdorferi seroprevalence in van region of turkey. *Turkish Journal of Immunology* 13: 5-9.

Branda JA, Aguero-Rosenfeld ME, Ferraro MJ, Johnson BJ, Wormser GP, Steere AC (2010) 2-tiered antibody testing for early and late Lyme disease using only an immunoglobulin G blot with the addition of a VlsE band as the second-tier test. *Clinical Infectious Diseases* 50: 20-26.

Branda JA, Linskey K, Kim YA, Steere AC, Ferraro MJ (2011) Two-tiered antibody testing for Lyme disease with use of 2 enzyme immunoassays, a whole-cell sonicate enzyme immunoassay followed by a VlsE C6 peptide enzyme immunoassay. *Clinical Infectious Diseases* 53: 541-547.

Branda JA, Strle F, Strle K, Sikand N, Ferraro MJ, Steere AC (2013) Performance of United States serologic assays in the diagnosis of Lyme borreliosis acquired in Europe. *Clinical Infectious Diseases* 57: 333-340.

Bransfield RC (2004) Potential uses of modafinil in psychiatric disorders. *Journal of Applied Research* 4: 198-207.

Bransfield RC (2016) Intrusive symptoms and infectious encephalopathies. *Neurology Psychiatry and Brain Research* 22 (1): 3-4.

Bremell D, Hagberg L (2011) Clinical characteristics and cerebrospinal fluid parameters in patients with peripheral facial palsy caused by Lyme neuroborreliosis compared with facial palsy of unknown origin (Bell's palsy). *BMC Infectious Diseases* 11: 215.

Bremell D, Sall C, Gisslen M, Hagberg L (2011) Lyme neuroborreliosis in HIV-1 positive men successfully treated with oral doxycycline: a case series and literature review. *Journal of Medical Case Reports* 5: 465.

Bremell D, Dotevall L (2014) Oral doxycycline for Lyme neuroborreliosis with symptoms of encephalitis, myelitis, vasculitis or intracranial hypertension. *European Journal of Neurology* 21: 1162-1167.

Bremell D, Mattsson N, Wallin F, Henriksson J, Wall M, Blennow K, Zetterberg H, Hagberg L (2014) Automated cerebrospinal fluid cell count--new reference ranges and evaluation of its clinical use in central nervous system infections. *Clinical Biochemistry* 47: 25-30.

Brescia AC, Arbillaga H, Fawcett LB, Fawcett PT, Rose CD, duPont AI (2002) Prolonged synovitis in pediatric Lyme disease: A study on clinical and laboratory predictors. *Arthritis and Rheumatism* 46: S312-S312.

Brescia AC, Rose CD, Fawcett PT (2009) Prolonged synovitis in pediatric Lyme arthritis cannot be predicted by clinical or laboratory parameters. *Clinical Rheumatology* 28: 591-593.

Brett ME, Hinckley AF, Zielinski-Gutierrez EC, Mead PS (2014) U.S. healthcare providers' experience with Lyme and other tick-borne diseases. *Ticks and Tick-Borne Diseases* 5: 404-408.

Brewer NT, Weinstein ND, Cuite CL, Herrington JE (2004) Risk perceptions and their relation to risk behavior. *Annals of Behavioral Medicine* 27: 125-130.

Brewer NT, Cuite CL, Herrington JE, Weinstein ND (2007) Risk compensation and vaccination: can getting vaccinated cause people to engage in risky behaviors? *Annals of Behavioral Medicine* 34: 95-99.

Briciu VT, Țăulescu DF, Flonta MMM, Năstase V, Cârstina D, Lupșe MS (2013) Tick bites and Erythema migrans in Transylvania. *Scientia Parasitologica* 14: 21-29.

Brinkerhoff RJ, Gilliam WF, Gaines D (2014) Lyme disease, Virginia, USA, 2000-2011. *Emerging Infectious Diseases* 20: 1661-1668.

Broekhuisen-van Henten DM, Braun KPJ, Wolfs TFW (2010) Clinical presentation of childhood neuroborreliosis; neurological examination may be normal. *Archives of Disease in Childhood* 95: 910-914.

Brooks B, Bravver E, Langford V, Alwan M, Smith N, Lucas N, Nichols M, Belcher S, Lary C, Nemeth J, Russo P, Wright K, Ward A, Holsten S, Fischer M, Bockenek W, Desai U, Lindblom SC, Pacicco T, Sanjak M (2015) Amyotrophic lateral sclerosis (ALS) with laboratory abnormalities of unknown significance (LAUS)-where does it begin and where does it end? *Neurology* 84: 144.

Brunner J, Moschovakis G, Prelog M, Walder G, Wuerzner R, Zimmerhackl LB (2010) Lyme neuroborreliosis: aetiology and diagnosis of facial palsy in children from Tyrol. *Klinische Padiatrie* 222: 302-307.

Brunner J, Reinhard RW, Zimmerhackl LB (2013) Lyme neuroborreliosis: Aetiology and diagnosis of facial palsy in children from Tyrol. *Neuropediatrics* 44: PS23_1279.

Bu XL, Wang X, Xiang Y, Shen LL, Wang QH, Liu YH, Jiao SS, Wang YR, Cao HY, Yi X, Liu CH, Deng B, Yao XQ, Xu ZQ, Zhou HD, Wang YJ (2015a) The association between infectious burden and Parkinson's disease: A case-control study. *Parkinsonism & Related Disorders* 21: 877-881.

Bu XL, Yao XQ, Jiao SS, Zeng F, Liu YH, Xiang Y, Liang CR, Wang QH, Wang X, Cao HY, Yi X, Deng B, Liu CH, Xu J, Zhang LL, Gao CY, Xu ZQ, Zhang M, Wang L, Tan XL, Xu X, Zhou HD,

Wang YJ (2015b) A study on the association between infectious burden and Alzheimer's disease. *European Journal of Neurology* 22: 1519-1525.

Bucak O, Kocoglu ME, Tas T, Mengeloglu FZ (2016) Evaluation of *Borrelia burgdorferi* sensu lato seroprevalence in the province of Bolu, Turkey. *Turkish Journal of Medical Sciences* 46: 727-732.

Buczek A, Rudek A, Bartosik K, Szymanska J, Wojcik-Fatla A (2009) Seroepidemiological study of Lyme borreliosis among forestry workers in southern Poland. *Annals of Agricultural and Environmental Medicine* 16: 257-261.

Buettner-Teleagua A (2012) Borreliosis - A cause of obstructive sleep apnea syndrome. *Brain Injury* 26 (4-5): 405.

Buettner A (2008) Borreliosis. Cause of obstructive sleep apnoea syndrome. *European Journal of Neurology* 15: 206-207.

Buettner A (2009) Borreliosis - Cause of obstructive sleep apnea syndrome. Comparison with normal OSAS. *Sleep Medicine* 10: S49.

Burbelo PD, Issa AT, Ching KH, Cohen JI, Iadarola MJ, Marques A (2010) Rapid, simple, quantitative, and highly sensitive antibody detection for Lyme disease. *Clinical and Vaccine Immunology* 17: 904-909.

Burbelo PD, Swedo SE, Thurm A, Bayat A, Levin AE, Marques A, Iadarola MJ (2013) Lack of serum antibodies against *Borrelia burgdorferi* in children with autism. *Clinical and Vaccine Immunology* 20: 1092-1093.

Burdick WP (2002) Prophylaxis with single-dose doxycycline for the prevention of Lyme disease after an *Ixodes scapularis* tick bite. *Annals of Emergency Medicine* 39: 352-353.

Burke GS, Wikel SK, Spielman A, Telford SR, McKay K, Krause PJ, Tick-borne Infection Study G (2005) Hypersensitivity to ticks and Lyme disease risk. *Emerging Infectious Diseases* 11: 36-41.

Busson L, Reynders M, Van den Wijngaert S, Dahma H, Decolvenaer M, Vasseur L, Vandenberg O (2012) Evaluation of commercial screening tests and blot assays for the diagnosis of Lyme borreliosis. *Diagnostic Microbiology and Infectious Disease* 73: 246-251.

Butler AD, Sedghi T, Petrini JR, Ahmadi R (2016) Tick-borne disease preventive practices and perceptions in an endemic area. *Ticks and Tick-Borne Diseases* 7: 331-337.

Cadavid D, Auwaerter P, Aucott J, Rumbaugh J (2008) Treatment for the neurological complications of Lyme disease (Protocol). 1: 1-9.

Cadavid D, Auwaerter PG, Rumbaugh J, Gelderblom H (2016) Antibiotics for the neurological complications of Lyme disease. *The Cochrane Library* 12: 1-76.

Calderaro A, Montecchini S, Gorrini C, Piccolo G, Chezzi C, Dettori G (2011) Presence of anti-Borrelia burgdorferi antibodies and Borrelia burgdorferi sensu lato DNA in samples of subjects in an area of the Northern Italy in the period 2002-2008. *Diagnostic Microbiology and Infectious Disease* 70: 455-460.

Callister SM, Jobe DA, Agger WA, Schell RF, Kowalski TJ, Lovrich SD, Marks JA (2002) Ability of the borreliacidal antibody test to confirm Lyme disease in clinical practice. *Clinical and Diagnostic Laboratory Immunology* 9: 908-912.

Cameron D (2008) Severity of Lyme disease with persistent symptoms. Insights from a double-blind placebo-controlled clinical trial. *Minerva Medica* 99: 489-496.

Carlsson SA, Granlund H, Jansson C, Nyman D, Wahlberg P (2003) Characteristics of erythema migrans in Borrelia afzelii and Borrelia garinii infections. *Scandinavian Journal of Infectious Diseases* 35: 31-33.

Carris NW, Pardo J, Montero J, Shaer KM (2015) Minocycline as A Substitute for Doxycycline in Targeted Scenarios: A Systematic Review. *Open Forum Infectious Diseases* 2: ofv178.

Caudwell Lyme Disease charity (2016) *Lyme disease on the NHS*. <https://caudwelllymedotnet.files.wordpress.com/2016/07/lyme-disease-on-the-nhs-ppt-v1.pdf> (accessed 30-10-2017).

Celik T, Celik U, Komur M, Tolunay O, Yildizdas RD, Yagci-Kupeli B, Kucuk F, Eroglu I (2016) Pediatric Lyme Neuroborreliosis: Different clinical presentations of the same agent; Single center experience. *Neuroendocrinology Letters* 37: 107-113.

Centers for Disease Control and Prevention (2002) Lyme disease - United States, 2000. *Morbidity and Mortality Weekly Report* 51: 29-31.

Centers for Disease Control and Prevention (2004) Lyme disease - United States, 2001-2002. *Morbidity and Mortality Weekly Report* 53: 365-369.

Centers for Disease Control and Prevention (2008) Effect of electronic laboratory reporting on the burden of Lyme disease surveillance - New Jersey, 2001-2006. *Morbidity and Mortality Weekly Report* 57: 42-45.

Centers for Disease Control and Prevention (2016) *Lyme Disease - Data and Statistics*. <http://www.cdc.gov/lyme/stats/index.html> (accessed 30-10-2017).

Cerar D, Cerar T, Ruzic-Sabljić E, Wormser GP, Strle F (2010a) Subjective symptoms after treatment of early Lyme disease. *American Journal of Medicine* 123: 79-86.

Cerar T, Ruzic-Sabljić E, Cimperman J, Strle F (2006a) Comparison of immunofluorescence assay (IFA) and enzyme immuno assay (EIA) for borrelial antibody detection in patients with signs and symptoms suggesting neuroborreliosis. *International Journal of Medical Microbiology* 296: 283-284.

Cerar T, Ruzic-Sabljić E, Cimperman J, Strle F (2006b) Comparison of immunofluorescence assay (IFA) and LIAISON in patients with different clinical manifestations of Lyme borreliosis. *Wiener Klinische Wochenschrift* 118: 686-690.

Cerar T, Ogrinc K, Cimperman J, Lotric-Furlan S, Strle F, Ruzic-Sabljić E (2008a) Validation of cultivation and PCR methods for diagnosis of Lyme neuroborreliosis. *Journal of Clinical Microbiology* 46: 3375-3379.

Cerar T, Ruzic-Sabljić E, Glinsek U, Zore A, Strle F (2008b) Comparison of PCR methods and culture for the detection of *Borrelia* spp. in patients with erythema migrans. *Clinical Microbiology and Infection* 14: 653-658.

Cerar T, Ogrinc K, Strle F, Ruzic-Sabljić E (2010b) Humoral immune responses in patients with Lyme neuroborreliosis. *Clinical and Vaccine Immunology* 17: 645-650.

Cermakova Z, Ryskova O, Honegr K, Cermakova E, Hanovcova I (2005) Diagnosis of Lyme borreliosis using enzyme immunoanalysis. *Medical Science Monitor* 11: BR121-125.

Cerroni L, Hofler G, Back B, Wolf P, Maier G, Kerl H (2002) Specific cutaneous infiltrates of B-cell chronic lymphocytic leukemia (B-CLL) at sites typical for *Borrelia burgdorferi* infection. *Journal of Cutaneous Pathology* 29: 142-147.

Cetin E, Sotoudeh M, Auer H, Stanek G (2006) Paradigm Burgenland: risk of *Borrelia burgdorferi* sensu lato infection indicated by variable seroprevalence rates in hunters. *Wiener Klinische Wochenschrift* 118: 677-681.

Cevizci S, Celik M, Akcali A, Oyekcin DG, Sahin OO, Bakar C (2015) Seroprevalence of anti-*Toxoplasma gondii* and anti-*Borrelia* species antibodies in patients with schizophrenia: A case-control study from western Turkey. *World Journal of Biological Psychiatry* 16: 230-236.

Chandra AM, Keilp JG, Fallon BA (2013) Correlates of perceived health-related quality of life in post-treatment Lyme encephalopathy. *Psychosomatics* 54: 552-559.

Chang BL, Shih CM, Ro LS, Huang CC, Lyu RK, Chen RS, Lee JD, Chao LL, Kuo HC (2010) Acute neuroborreliosis with involvement of the central nervous system. *Journal of the Neurological Sciences* 295: 10-15.

Chao LL, Lu CF, Shih CM (2012) Molecular identification of *Borrelia* spirochetes isolated from skin biopsies of patients characterised with an unusual dermal manifestation (prurigo pigmentosa) in Taiwan. *Clinical Microbiology and Infection* 18: 837.

Chaudhury A (2016) *Patient narratives and an umwelten-based account of the more-than-human*. York University.

Chen H, White DJ, Caraco TB, Stratton HH (2005) Epidemic and spatial dynamics of Lyme disease in New York State, 1990-2000. *Journal of Medical Entomology* 42: 899-908.

Chen H, Stratton HH, Caraco TB, White DJ (2006) Spatiotemporal Bayesian analysis of Lyme disease in New York State, 1990-2000. *Journal of Medical Entomology* 43: 777-784.

Chmielewska-Badora J, Cisak E, Wojcik-Fatla A, Zwolinski J, Buczek A, Dutkiewicz J (2006) Correlation of tests for detection of *Borrelia burgdorferi* sensu lato infection in patients with diagnosed borreliosis. *Annals of Agricultural and Environmental Medicine* 13: 307-311.

Chmielewska-Badora J, Zajac V, Cisak E, Zwolinski J (2009) Preliminary study on immunological reactivity in people occupationally exposed to tick-transmitted pathogens. *Clinical Microbiology and Infection* 15: S602.

Chmielewska-Badora J, Moniuszko A, Zukiewicz-Sobczak W, Zwolinski J, Piatek J, Pancewicz S (2012) Serological survey in persons occupationally exposed to tick-borne pathogens in cases of co-infections with *Borrelia burgdorferi*, *Anaplasma phagocytophilum*, *Bartonella* spp. and *Babesia microti*. *Annals of Agricultural and Environmental Medicine* 19: 271-274.

Chmielewski T, Fiett J, Gniadkowski M, Tylewska-Wierzbanowska S (2003) Improvement in the laboratory recognition of Lyme borreliosis with the combination of culture and PCR methods. *Molecular Diagnosis* 7: 155-162.

Chmielewski T, Brydak-Godowska J, Fiecek B, Rorot U, Sedrowicz E, Werenowska M, Kopacz D, Hevelke A, Michniewicz M, Kecik D, Tylewska-Wierzbanowska S (2014) Bacterial tick-borne diseases caused by *Bartonella* spp., *Borrelia burgdorferi* sensu lato, *Coxiella burnetii*, and *Rickettsia* spp. among patients with cataract surgery. *Medical Science Monitor* 20: 927-931.

Chow CC, Evans AS, Jr., Noonan-Toly CM, White D, Johnson GS, Marks SJ, Caldwell MC, Hayes EB (2003) Lyme disease trends--Dutchess County, New York, 1992-2000. *Mount Sinai Journal of Medicine* 70: 207-213.

Christova I (2003) Enzyme-linked immunosorbent assay, immunofluorescent assay, and recombinant immunoblotting in the serodiagnosis of early Lyme borreliosis. *International Journal of Immunopathology and Pharmacology* 16: 261-268.

Christova I, Komitova R (2004) Clinical and epidemiological features of Lyme borreliosis in Bulgaria. *Wiener Klinische Wochenschrift* 116: 42-46.

Chyzheuskaya I, Belyaeva L, Filonovich R, Zaitseva L, Lyatun A (2014) Infectious agents in juvenile scleroderma. *Pediatric Rheumatology* 12.

Ciceroni L, Bartoloni A, Leoncini F, Ciarrocchi S, Pinto A, Favia G, Bartalesi F, Scagnoli L, Iori A (2003) Risk of tick-borne bacterial diseases in humans in the Florence area, Tuscany. *Annals of the New York Academy of Sciences* 990: 346-349.

Cihelkova S (2015) The prevalence of neuropsychiatric symptoms in Lyme borreliosis patients. *European Journal of Neurology* 22: 136-136.

Cinco M, Barbone F, Grazia C, Mascioli M, Anguero R, Stefanel P, Luzzati R (2004) Seroprevalence of tick-borne infections in forestry rangers from northeastern Italy. *Clinical Microbiology and Infection* 10: 1056-1061.

Cinco M, Murgia R (2006) Evaluation of the C6 enzyme-linked immunoadsorbent assay for the serodiagnosis of Lyme borreliosis in north-eastern Italy. *New Microbiologica* 29: 139-141.

Cisak E, Chmielewska-Badora J, Zwolinski J, Wojcik-Fatla A, Polak J, Dutkiewicz J (2005) Risk of tick-borne bacterial diseases among workers of Roztocze National Park (south-eastern Poland). *Annals of Agricultural and Environmental Medicine* 12: 127-132.

Cisak E, Chmielewska-Badora J, Zwolinski J, Wojcik-Fatla A, Zajac V, Skorska C, Dutkiewicz J (2008) Study on Lyme borreliosis focus in the Lublin region (eastern Poland). *Annals of Agricultural and Environmental Medicine* 15: 327-332.

Cisak E, Zajac V, Wojcik-Fatla A, Dutkiewicz J (2012) Risk of tick-borne diseases in various categories of employment among forestry workers in eastern Poland. *Annals of Agricultural and Environmental Medicine* 19: 469-474.

Clarissou J, Song A, Bernede C, Guillemot D, Dinh A, Ader F, Perronne C, Salomon J (2009) Efficacy of a long-term antibiotic treatment in patients with a chronic Tick Associated Poly-organic Syndrome (TAPOS). *Medecine et Maladies Infectieuses* 39: 108-115.

Clark KL, Leydet BF, Threlkeld C (2014) Geographical and genospecies distribution of *Borrelia burgdorferi* sensu lato DNA detected in humans in the USA. *Journal of Medical Microbiology* 63: 674-684.

Clayton JL, Jones SG, Dunn JR, Schaffner W, Jones TF (2015) Enhancing Lyme Disease Surveillance by Using Administrative Claims Data, Tennessee, USA. *Emerging Infectious Diseases* 21: 1632-1634.

Cohn KA, Thompson A, Shah SS, Hines E, Lyons T, Walsh E, Nigrovic LE (2011) Multi-center validation of a clinical decision rule to distinguish Lyme from aseptic meningitis in children in Lyme disease endemic areas. *Academic Emergency Medicine* 1): S123-S124.

Cohn KA, Thompson AD, Shah SS, Hines EM, Lyons TW, Welsh EJ, Nigrovic LE (2012) Validation of a clinical prediction rule to distinguish Lyme meningitis from aseptic meningitis. *Pediatrics* 129: e46-53.

Colli C, Leinweber B, Mullegger R, Chott A, Kerl H, Cerroni L (2004) *Borrelia burgdorferi*-associated lymphocytoma cutis: clinicopathologic, immunophenotypic, and molecular study of 106 cases. *Journal of Cutaneous Pathology* 31: 232-240.

Connally NP, Durante AJ, Yousey-Hindes KM, Meek JI, Nelson RS, Heimer R (2009) Peridomestic Lyme disease prevention: results of a population-based case-control study. *American Journal of Preventive Medicine* 37: 201-206.

Cook MJ, Puri BK (2016) Commercial test kits for detection of Lyme borreliosis: a meta-analysis of test accuracy. *International journal of general medicine* 9: 427-440.

Cook P, Webster D, Harris K, Murray C, MacLean G, Lloyd V (2016) Pilot study into borrelia seroprevalence in new Brunswick multiple sclerosis patients. *Multiple Sclerosis* 1): 22.

Correll MH, Datta N, Arvidsson HS, Melsom HA, Thielberg AK, Bjerager M, Brodsky MC, Saunte JP (2015) Lyme neuroborreliosis: a treatable cause of acute ocular motor disturbances in children. *British Journal of Ophthalmology* 99: 1401-1404.

Costache D, Costache C (2013) Clinico-biological aspects in human neuroborreliosis. *Bulletin of the Transilvania University of Braşov, Series VI, Medical Sciences* 6: 57-62.

Costello JM, Alexander ME, Greco KM, Perez-Atayde AR, Laussen PC (2009) Lyme carditis in children: presentation, predictive factors, and clinical course. *Pediatrics* 123: e835-841.

Cottle LE, Mekonnen E, Beadsworth MB, Miller AR, Beeching NJ (2012) Lyme disease in a British referral clinic. *QJM* 105: 537-543.

Coulter P, Lema C, Flayhart D, Linhardt AS, Aucott JN, Auwaerter PG, Dumler JS (2005) Two-year evaluation of *Borrelia burgdorferi* culture and supplemental tests for definitive diagnosis of Lyme disease. *Journal of Clinical Microbiology* 43: 5080-5084.

Coumou J, Hovius JW, van Dam AP (2014) *Borrelia burgdorferi* sensu lato serology in the Netherlands: guidelines versus daily practice. *European Journal of Clinical Microbiology & Infectious Diseases* 33: 1803-1808.

Coumou J, Herkes EA, Brouwer MC, van de Beek D, Tas SW, Casteelen G, van Vugt M, Starink MV, de Vries HJC, de Wever B, Spanjaard L, Hovius JWR (2015) Ticking the right boxes: classification of patients suspected of Lyme borreliosis at an academic referral center in the Netherlands. *Clinical Microbiology and Infection* 21: 368.e311-320.

Crowder LA, Yedlin VA, Weinstein ER, Kortte KB, Aucott JN (2014) Lyme disease and post-treatment Lyme disease syndrome: the neglected disease in our own backyard. *Public Health* 128: 784-791.

Cruz AI, Jr., Aversano FJ, Seeley MA, Sankar WN, Baldwin KD (2015) Pediatric Lyme Arthritis of the Hip: The Great Imitator? *Journal of Pediatric Orthopedics* 13: 13.

Csallner G, Hofmann H, Hausteiner-Wiehle C (2013) Patients with "organically unexplained symptoms" presenting to a borreliosis clinic: clinical and psychobehavioral characteristics and quality of life. *Psychosomatics* 54: 359-366.

Csep A (2011) Epidemiological, clinical and paraclinical aspects of Lyme disease in Bihor county between 2007-2011. *Analele Universității din Oradea, Fascicula: Ecotoxicologie, Zootehnie și Tehnologii de Industrie Alimentară* 10: 483-488.

Csep A, Turda C (2014) Particular aspects of Lyme disease in Bihor county. *Analele Universității din Oradea, Fascicula: Ecotoxicologie, Zootehnie și Tehnologii de Industrie Alimentară* 13: 149-153.

Czupryna P, Moniuszko A, Czczuga A, Pancewicz S, Zajkowska J (2012) Ultrasonographic evaluation of knee joints in patients with Lyme disease. *International Journal of Infectious Diseases* 16: e252-255.

Czupryna P, Moniuszko-Malinowska A, Pancewicz S, Garkowski A, Goscik J, Siemieniako A, Zajkowska J (2016) Lyme disease in Poland - A serious problem? *Advances in Medical Sciences* 61: 96-100.

D'Adamo CR, McMillin CR, Chen KW, Lucas EK, Berman BM (2015) Supervised Resistance Exercise for Patients with Persistent Symptoms of Lyme Disease. *Medicine & Science in Sports & Exercise* 47: 2291-2298.

Daikh BE, Emerson F, Lucas FL, Smith R, McCarthy C (2010) A comparison of the presentation, synovial fluid analysis, and treatment course in children and adults with Lyme arthritis. *Arthritis and Rheumatism* 62: 1638.

Daikh BE, Emerson FE, Smith RP, Lucas FL, McCarthy CA (2013) Lyme arthritis: a comparison of presentation, synovial fluid analysis, and treatment course in children and adults. *Arthritis Care and Research* 65: 1986-1990.

Daltroy LH, Phillips C, Lew R, Wright E, Shadick NA, Liang MH (2007) A controlled trial of a novel primary prevention program for Lyme disease and other tick-borne illnesses. *Health Education & Behavior* 34: 531-542.

Daniel M, Kriz B, Valter J, Kott I, Danielova V (2008) The influence of meteorological conditions of the preceding winter on the incidences of tick-borne encephalitis and Lyme borreliosis in the Czech Republic. *International Journal of Medical Microbiology* 298: 60-67.

Dankyi OJ (2016) *Stress, despair, and quality of life: the lived experience of families with children below 26 years of age diagnosed with Lyme disease*. Capella University.

Darcy John M, II (2015) Quaternary Lyme disease: Symptomatology, epidemiology and anthropology of an emerging disease. *Dissertation Abstracts International: Section B: The Sciences and Engineering* 75: 187.

Darcy TM, Davis S, Hao Y, Garruto RM (2015) Emergence of a persistent symptomatology in a cohort of patients reporting previous diagnosis and treatment for Lyme disease. *American Journal of Human Biology* 27: 265-266.

Dattwyler RJ, Wormser GP, Rush TJ, Finkel MF, Schoen RT, Grunwaldt E, Franklin M, Hilton E, Bryant GL, Agger WA, Maladorno D (2005) A comparison of two treatment regimens of ceftriaxone in late Lyme disease. *Wiener Klinische Wochenschrift* 117: 393-397.

de la Fouchardiere A, Vandenesch F, Berger F (2003) Borrelia-associated primary cutaneous MALT lymphoma in a nonendemic region. *American Journal of Surgical Pathology* 27: 702-703.

De Vries-Bouwstra JK, van Burgel ND, Vreeswijk T, Kroes ACM, Huizinga TWJ, van der Helm-van Mil AHM (2013) Prevalence and Clinical Presentation Of Lyme Arthritis In a Large Cohort Of Patients With Recent-Onset Arthritis. *Arthritis and Rheumatism* 65: S1202-S1203.

de Vries H, van Dillen S (2002) Prevention of Lyme disease in Dutch children: analysis of determinants of tick inspection by parents. *Preventive Medicine* 35: 160-165.

Deanehan JK, Kimia AA, Tan T, S P, Milewski MD, Talusan PG, Smith BG, Nigrovic LE (2013) Distinguishing Lyme from septic knee monoarthritis in Lyme disease-endemic areas. *Pediatrics* 131: e695-701.

Deanehan JK, Nigrovic PA, Milewski MD, Tan T, S P, Kimia AA, Smith BG, Nigrovic LE (2014) Synovial fluid findings in children with knee monoarthritis in Lyme disease endemic areas. *Pediatric Emergency Care* 30: 16-19.

Dehnert M, Fingerle V, Klier C, Talaska T, Schlaud M, Krause G, Wilking H, Poggensee G (2012) Seropositivity of Lyme borreliosis and associated risk factors: a population-based study in Children and Adolescents in Germany (KiGGS). *PLoS ONE* 7: e41321.

Department for Environment Food and Rural Affairs (2004) *Zoonoses Report United Kingdom 2003*. London: Department for Environment, Food and Rural Affairs (DEFRA).
<http://www.defra.gov.uk> <https://www.cabdirect.org/cabdirect/abstract/20053034364>

Department for Environment Food and Rural Affairs (2015) *Zoonoses summary report: UK 2014*.
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/488376/zoonoses-annual-report-2014.pdf (accessed 30-10-2017).

Dersch R, Freitag MH, Schmidt S, Sommer H, Rauer S, Meerpohl JJ (2015a) Efficacy and safety of pharmacological treatments for acute Lyme neuroborreliosis - a systematic review. *European Journal of Neurology* 22: 1249-1259.

Dersch R, Hottenrott T, Schmidt S, Sommer H, Huppertz HI, Rauer S, Meerpohl JJ (2015b) Efficacy and safety of pharmacological treatments for Lyme neuroborreliosis in children: a systematic review. *BMC Neurology* 16: 189.

Dersch R, Sarnes AA, Maul M, Hottenrott T, Baumgartner A, Rauer S, Stich O (2015c) Quality of life, fatigue, depression and cognitive impairment in Lyme neuroborreliosis. *Journal of Neurology* 262: 2572-2577.

Dersch R, Sommer H, Rauer S, Meerpohl JJ (2016) Prevalence and spectrum of residual symptoms in Lyme neuroborreliosis after pharmacological treatment: a systematic review. *Journal of Neurology* 263: 17-24.

Dessau RB, Bangsberg JM, Ejlertsen T, Skarphedinsson S, Schonheyder HC (2010a) Utilization of serology for the diagnosis of suspected Lyme borreliosis in Denmark: survey of patients seen in general practice. *BMC Infectious Diseases* 10: 317.

Dessau RB, Ejlertsen T, Hilden J (2010b) Simultaneous use of serum IgG and IgM for risk scoring of suspected early Lyme borreliosis: graphical and bivariate analyses. *APMIS* 118: 313-323.

Dessau RB (2012) Methodology in reporting diagnostic accuracy for *Borrelia* specific IgG and IgM antibodies. Tests often differ but performance of the test antigens may be quite similar anyway. *Clinical Microbiology and Infection* 18: 593.

Dessau RB (2013) Diagnostic accuracy and comparison of two assays for *Borrelia*-specific IgG and IgM antibodies: proposals for statistical evaluation methods, cut-off values and standardization. *Journal of Medical Microbiology* 62: 1835-1844.

Dessau RB, Espenhain L, Molbak K, Krause TG, Voldstedlund M (2015a) Improving national surveillance of Lyme neuroborreliosis in Denmark through electronic reporting of specific antibody index testing from 2010 to 2012. *Euro Surveillance* 20.

Dessau RB, Fryland L, Wilhelmsson P, Ekerfelt C, Nyman D, Forsberg P, Lindgren PE (2015b) Study of a Cohort of 1,886 Persons To Determine Changes in Antibody Reactivity to *Borrelia burgdorferi* 3 Months after a Tick Bite. *Clinical and Vaccine Immunology* 22: 823-827.

Di Renzi S, Martini A, Binazzi A, Marinaccio A, Vonesch N, D'Amico W, Moro T, Fiorentini C, Ciufolini MG, Visca P, Tomao P (2010) Risk of acquiring tick-borne infections in forestry workers from Lazio, Italy. *European Journal of Clinical Microbiology & Infectious Diseases* 29: 1579-1581.

Diana E, Sandu M, Teleanu RI, Vasile D, Plesca D (2011) Peripheral facial palsy associated with viral infections in children. *European Journal of Paediatric Neurology* 15: S117.

Dickeson DJ, Chen SC, Sintchenko VG (2016) Concordance of four commercial enzyme immunoassay and three immunoblot formats for the detection of Lyme borreliosis antibodies in human serum: the two-tier approach remains. *Pathology* 48: 251-256.

Dillon R, O'Connell S, Wright S (2010) Lyme disease in the U.K.: clinical and laboratory features and response to treatment. *Clinical Medicine* 10: 454-457.

Diuk-Wasser M, Finch C, Salim M, Steeves T, Folson-O'Keefe C, Krause P (2013) Human behavioral and ecological risk factors for Lyme disease infection on block island, Rhode Island. *American Journal of Tropical Medicine and Hygiene* 89: 146.

Djukic M, Schmidt-Samoa C, Lange P, Spreer A, Neubieser K, Eiffert H, Nau R, Schmidt H (2011a) Cerebrospinal fluid findings in adults with acute neuroborreliosis. *Journal of Neurology* 258: 50-51.

Djukic M, Schmidt-Samoa C, Nau R, von Steinbuchel N, Eiffert H, Schmidt H (2011b) The diagnostic spectrum in patients with suspected chronic Lyme neuroborreliosis--the experience from one year of a university hospital's Lyme neuroborreliosis outpatients clinic. *European Journal of Neurology* 18: 547-555.

Dobracki W (2007) Epidemiology of Borreliosis in Workers of the District Forestry Offices in Lower Silesia. *Przegląd Epidemiologiczny* 61: 385-391.

Doggett JS, Kohlhepp S, Gresbrink R, Metz P, Gleaves C, Gilbert D (2008) Lyme disease in Oregon. *Journal of Clinical Microbiology* 46: 2115-2118.

Donta ST (2003) Macrolide therapy of chronic Lyme Disease. *Medical Science Monitor* 9: P1136-142.

Donta ST, Noto RB, Vento JA (2012) SPECT brain imaging in chronic Lyme disease. *Clinical Nuclear Medicine* 37: e219-222.

Dou X, Lyu Y, Jiang Y, Tian L, Li X, Lin C, Sun Y, Guan Z, Zhang X, Wang Q (2015) Seroprevalence of Lyme disease and associated risk factors in rural population of Beijing. *International journal of clinical and experimental medicine* 8: 7995-7999.

Downs Philip W (2014) *Opportunities and barriers in the control and prevention of Lyme disease: Implications for practice*. University of North Carolina at Chapel Hill.

Drack FD, Weissert M (2013) Outcome of peripheral facial palsy in children - a catamnestic study. *European Journal of Paediatric Neurology* 17: 185-191.

Drevova H, Hulinska D, Kurzova Z, Plch J, Janovska D (2003) Study of awareness of tick-borne diseases among children and young people in the Czech Republic. *Central European Journal of Public Health* 11: 138-141.

Drew D, Hewitt H (2006) A qualitative approach to understanding patients' diagnosis of Lyme disease. *Public Health Nursing* 23: 20-26.

Dryden MS, Saeed K, Ogborn S, Swales P (2015) Lyme borreliosis in southern United Kingdom and a case for a new syndrome, chronic arthropod-borne neuropathy. *Epidemiology and Infection* 143: 561-572.

Du W, Ma X, Nyman D, Povlsen K, Akguen N, Schneider EM (2007) Antigen biochips verify and extend the scope of antibody detection in Lyme borreliosis. *Diagnostic Microbiology and Infectious Disease* 59: 355-363.

Duda A, Kasprzykowska U, Sobieszczanska B (2008) Non-specific arthralgia as the main manifestation of *Borrelia burgdorferi* sensu lato infection. *Advances in Clinical and Experimental Medicine* 17: 635-641.

Dudley TA, Erwin D, Ewell A (2007) Clinical comparison of two commercially available Lyme screening ELISA assays. *Clinical Chemistry* 53: A141-A141.

Durovska J, Bazovska S, Ondrisova M, Pancak J (2010) Our experience with examination of antibodies against antigens of *Borrelia burgdorferi* in patients with suspected Lyme disease. *Bratislavske Lekarske Listy* 111: 153-155.

Earl AK, Sullivan KM, Warfel D, Feldman SM, Richardson CM, Vyas G, Buchanan RW, McEvoy JP, Keefe R, Wehring HJ, Koola MM, Kelly DL (2013) Lyme disease and schizophrenia: Case studies from an adjunctive minocycline study. *Schizophrenia Bulletin* 39: S62-S63.

Ecklund K, Vargas S, Zurakowski D, Sundel RP (2005) MRI features of Lyme arthritis in children. *American Journal of Roentgenology* 184: 1904-1909.

Eikeland R, Ljostad U, Mygland A, Herlofson K, Lohaugen GC (2011a) European Neuroborreliosis: Neuropsychological Findings 30 Months Post Treatment. *Neurology* 76: A469-A469.

Eikeland R, Mygland A, Herlofson K, Ljostad U (2011b) European neuroborreliosis: quality of life 30 months after treatment. *Acta Neurologica Scandinavica* 124: 349-354.

Eikeland R, Ljostad U, Mygland A, Herlofson K, Lohaugen GC (2012) European neuroborreliosis: neuropsychological findings 30 months post-treatment. *European Journal of Neurology* 19: 480-487.

Eikeland R, Lohaugen GC (2013) Long-term cognitive deficits after treated Lyme neuroborreliosis-Neuropsychological profile and demographical characteristics. *Journal of the Neurological Sciences* 333: e619-e620.

Eikeland R, Mygland A, Herlofson K, Ljostad U (2013) Risk factors for a non-favorable outcome after treated European neuroborreliosis. *Acta Neurologica Scandinavica* 127: 154-160.

Eisen RJ, Lane RS, Fritz CL, Eisen L (2006) Spatial patterns of Lyme disease risk in California based on disease incidence data and modeling of vector-tick exposure. *American Journal of Tropical Medicine and Hygiene* 75: 669-676.

Eisendle K, Grabner T, Zelger B (2007a) Focus floating microscopy: "gold standard" for cutaneous borreliosis? *American Journal of Clinical Pathology* 127: 213-222.

Eisendle K, Grabner T, Zelger B (2007b) Morphoea: a manifestation of infection with *Borrelia* species? *British Journal of Dermatology* 157: 1189-1198.

Eisendle K, Baltaci M, Kutzner H, Zelger B (2008a) Detection of spirochaetal microorganisms by focus floating microscopy in necrobiosis lipidica in patients from central Europe. *Histopathology* 52: 877-884.

Eisendle K, Grabner T, Kutzner H, Zelger B (2008b) Possible role of *Borrelia burgdorferi* sensu lato infection in lichen sclerosus. *Archives of Dermatology* 144: 591-598.

Ekerfelt C, Ernerudh J, Forsberg P, Jonsson AL, Vrethem M, Arlehag L, Forsum U (2004) Lyme borreliosis in Sweden--diagnostic performance of five commercial *Borrelia* serology kits using sera from well-defined patient groups. *APMIS* 112: 74-78.

Elamin M, Monaghan T, Mullins G, Ali E, Corbett-Feeney G, O'Connell S, Counihan TJ (2010) The clinical spectrum of Lyme neuroborreliosis. *Irish Medical Journal* 103: 46-49.

Elfving K, Lindblom A, Nilsson K (2008) Seroprevalence of Rickettsia spp. infection among tick-bitten patients and blood donors in Sweden. *Scandinavian Journal of Infectious Diseases* 40: 74-77.

Eliassen KE, Berild D, Reiso H, Grude N, Christophersen KS, Finckenhagen C, Lindbaek M (2016) Incidence and antibiotic treatment of erythema migrans in Norway 2005-2009. *Ticks and Tick-Borne Diseases* 30: 30.

Engman ML, Lindstrom K, Sallamba M, Hertz C, Sundberg B, Hansson ME, Lindquist L, Orvell C, Liddefelt KJ, Sundin M (2012) One-year follow-up of tick-borne central nervous system infections in childhood. *Pediatric Infectious Disease Journal* 31: 570-574.

Eppes SC, Childs JA (2002) Comparative study of cefuroxime axetil versus amoxicillin in children with early Lyme disease. *Pediatrics* 109: 1173-1177.

Ergunay K, Saygan MB, Aydogan S, Litzba N, Sener B, Lederer S, Niedrig M, Hascelik G, Us D (2011) Confirmed exposure to tick-borne encephalitis virus and probable human cases of tick-borne encephalitis in Central/Northern Anatolia, Turkey. *Zoonoses and Public Health* 58: 220-227.

Eriksson P, Schroder MT, Niiranen K, Nevanlinna A, Panelius J, Ranki A (2013) The many faces of solitary and multiple erythema migrans. *Acta Dermato-Venereologica* 93: 693-700.

Eros N, Marschalko M, Harsing J, Nagy Z, Demeter J, Csomor J, Szepesi A, Matolcsy A, Karpati S (2010) Primary cutaneous marginal zone lymphoma: Studies on Borrelia infection. *Journal of Investigative Dermatology* 130: S65.

Ertel SH, Nelson RS, Cartter ML (2012) Effect of surveillance method on reported characteristics of Lyme disease, Connecticut, 1996-2007. *Emerging Infectious Diseases* 18: 242-247.

Eshoo M, Crowder C, Rounds M, Mathews H, Soloski M, Schwarzwald A, Schutzer S, Aucott J (2011) Direct detection of early Lyme borreliosis from whole blood. *Clinical Microbiology and Infection* 17: S70.

Eshoo MW, Crowder CC, Rebman AW, Rounds MA, Matthews HE, Picuri JM, Soloski MJ, Ecker DJ, Schutzer SE, Aucott JN (2012) Direct molecular detection and genotyping of Borrelia burgdorferi from whole blood of patients with early Lyme disease. *PLoS ONE* 7: e36825.

Espinoza-Leon F, Hassanhi-Hassanhi M, Arocha-Sandoval F, Urbina-Lopez M (2006) Absence of Borrelia burgdorferi antibodies in the sera of Venezuelan patients with localized scleroderma (morphea). *Investigacion Clinica* 47: 283-288.

Esposito S, Baggi E, Villani A, Norbedo S, Pellegrini G, Bozzola E, Palumbo E, Bosis S, Nigro G, Garazzino S, Principi N, for the SLDR (2013) Management of paediatric Lyme disease in non-endemic and endemic areas: data from the Registry of the Italian Society for Pediatric Infectious Diseases. *European Journal of Clinical Microbiology & Infectious Diseases* 32: 523-529.

Estrada-Pena A (2009) Diluting the dilution effect: a spatial Lyme model provides evidence for the importance of habitat fragmentation with regard to the risk of infection. *Geospatial Health* 3: 143-155.

Evans R, Mavin S, Ho-Yen DO (2005) Audit of the laboratory diagnosis of Lyme disease in Scotland. *Journal of Medical Microbiology* 54: 1139-1141.

Evans R, Mavin S, McDonagh S, Chatterton JM, Milner R, Ho-Yen DO (2010) More specific bands in the IgG western blot in sera from Scottish patients with suspected Lyme borreliosis. *Journal of Clinical Pathology* 63: 719-721.

Fadeeva OA, Baranova NS, Spirin NN, Stepanov IO, Nizovceva LA, Pahomova YA, Kachura DA, Shipova EG (2008) Clinical and immunological characteristics of multiple sclerosis patients with B.burgdorferi antibodies. *European Journal of Neurology* 15: 366-366.

Fadeeva OA, Spirin NN, Baranova NS, Shipova EG, Stepanov IO (2010) Clinical and serological features of borreliac infection in multiple sclerosis patients. *European Journal of Neurology* 17: 228.

Fahimi J, Navi BB, Kamel H (2014) Potential misdiagnoses of Bell's palsy in the emergency department. *Annals of Emergency Medicine* 63: 428-434.

Fallon BA, Keilp J, Prohovnik I, Heertum RV, Mann JJ (2003) Regional cerebral blood flow and cognitive deficits in chronic Lyme disease. *Journal of Neuropsychiatry and Clinical Neurosciences* 15: 326-332.

Fallon BA, Keilp JG, Corbera KM, Petkova E, Britton CB, Dwyer E, Slavov I, Cheng J, Dobkin J, Nelson DR, Sackeim HA (2008) A randomized, placebo-controlled trial of repeated IV antibiotic therapy for Lyme encephalopathy. *Neurology* 70: 992-1003.

Fallon BA, Pavlicova M, Coffino SW, Brenner C (2014) A comparison of Lyme disease serologic test results from 4 laboratories in patients with persistent symptoms after antibiotic treatment. *Clinical Infectious Diseases* 59: 1705-1710.

Faulde MK, Mross KG (2008) Fabric impregnation using acaricides: effective and safe method for the prevention of tick-infestation and tick-borne diseases. *Hygiene Medizin* 33: 135-141.

Faulde MK, Rutenfranz M, Hepke J, Rogge M, Gerner A, Keth A (2014) Human tick infestation pattern, tick-bite rate, and associated *Borrelia burgdorferi* s.l. infection risk

during occupational tick exposure at the Seedorf military training area, northwestern Germany. *Ticks and Tick-Borne Diseases* 5: 594-599.

Faulde MK, Rutenfranz M, Keth A, Hepke J, Rogge M, Gorner A (2015) Pilot study assessing the effectiveness of factory-treated, long-lasting permethrin-impregnated clothing for the prevention of tick bites during occupational tick exposure in highly infested military training areas, Germany. *Parasitology Research* 114: 671-678.

Fawcett PT, Rose CD, Maduskuie V (2004) Long-term effects of immunization with recombinant lipoprotein outer surface protein a on serologic test for Lyme disease. *Clinical and Diagnostic Laboratory Immunology* 11: 808-810.

Fernandez-Flores A, Ruzic-Sabljić E (2008) Granuloma annulare displaying pseudorosettes in *Borelia* infection. *Acta Dermatovenerologica Alpina, Panonica et Adriatica* 17: 171-176.

Ferquel E, Postić D, Trombert-Paolantoni S (2004) Retrospective study of Lyme borreliosis positive serologies in 2003. *International Journal of Antimicrobial Agents* 24: S157-S157.

Ferrouillet C, Milord F, Lambert L, Vibien A, Ravel A (2015) Lyme disease: Knowledge and practices of family practitioners in southern Quebec. *Canadian Journal of Infectious Diseases and Medical Microbiology* 26: 151-156.

Finch C, Al-Damluji MS, Krause PJ, Niccolai L, Steeves T, O'Keefe CF, Diuk-Wasser MA (2014) Integrated assessment of behavioral and environmental risk factors for Lyme disease infection on Block Island, Rhode Island. *PLoS ONE* 9: e84758.

Fine AM, Brownstein JS, Nigrovic LE, Kimia AA, Olson KL, Thompson AD, Mandl KD (2011) Integrating spatial epidemiology into a decision model for evaluation of facial palsy in children. *Archives of Pediatrics & Adolescent Medicine* 165: 61-67.

Firoz EF, Qureshi A (2014) The epidemiology of Lyme disease in the state of Massachusetts, 2001-2011. *Journal of Investigative Dermatology* 134: S58-S58.

Fitzner J, Ammon A, Baumann I, Talaska T, Schonberg A, Stobel K, Fingerle V, Wilske B, Petersen L (2002) Risk factors in Lyme borreliosis: a German case-control study. *International Journal of Medical Microbiology* 291 Suppl 33: 220.

Fleming RV, Marques AR, Klempner MS, Schmid CH, Dally LG, Martin DS, Philipp MT (2004) Pre-treatment and post-treatment assessment of the C(6) test in patients with persistent symptoms and a history of Lyme borreliosis. *European Journal of Clinical Microbiology & Infectious Diseases* 23: 615-618.

Fogel J, Co S (2016) Awareness that dogs can be carriers for ticks that transmit Lyme disease. *Californian Journal of Health Promotion* 14: 74-80.

Fogel J, Kusz M (2016) Intentions to receive a potentially available Lyme disease vaccine in an urban sample. *Therapeutic Advances in Vaccines* 4: 3-14.

Fogel J, Chawla GS (2017) Susceptibility, likelihood to be diagnosed, worry and fear for contracting Lyme disease. *Journal of Infection and Public Health* 10: 64-75.

Fomenko NV, Livanova NN, Chernousova NY (2008) Diversity of *Borrelia burgdorferi* sensu lato in natural foci of Novosibirsk region. *International Journal of Medical Microbiology* 298: 139-148.

Forrester JD, Meiman J, Mullins J, Nelson R, Ertel SH, Cartter M, Brown CM, Lijewski V, Schiffman E, Neitzel D, Daly ER, Mathewson AA, Howe W, Lowe LA, Kratz NR, Semple S, Backenson PB, White JL, Kurpiel PM, Rockwell R, Waller K, Johnson DH, Steward C, Batten B, Blau D, DeLeon-Carnes M, Drew C, Muehlenbachs A, Ritter J, Sanders J, Zaki SR, Molins C, Schriefer M, Perea A, Kugeler K, Nelson C, Hinckley A, Mead P (2014) Notes from the field: update on Lyme carditis, groups at high risk, and frequency of associated sudden cardiac death - United States. *Morbidity and Mortality Weekly Report* 63: 982-983.

Forrester JD, Brett M, Matthias J, Stanek D, Springs CB, Marsden-Haug N, Oltean H, Baker JS, Kugeler KJ, Mead PS, Hinckley A (2015a) Epidemiology of Lyme disease in low-incidence states. *Ticks and Tick-Borne Diseases* 6: 721-723.

Forrester JD, Kugeler KJ, Perea AE, Pastula DM, Mead PS (2015b) No Geographic Correlation between Lyme Disease and Death Due to 4 Neurodegenerative Disorders, United States, 2001-2010. *Emerging Infectious Diseases* 21: 2036-2039.

Fox Nancy N (2009) Tick-borne diseases: An evaluation of a Lyme disease prevention education program for eight, nine, and ten year olds. *Dissertation Abstracts International Section A: Humanities and Social Sciences* 69: 4635.

Fraile Farinas MT, Ramos Marti JL, Tormo Palop N, Gimeno Cardona C (2010) Serological diagnosis of Lyme disease in Valencia (Spain). *International Journal of Infectious Diseases* 14: e358.

Frank C, Fix AD, Pena CA, Strickland GT (2002) Mapping Lyme disease incidence for diagnostic and preventive decisions, Maryland. *Emerging Infectious Diseases* 8: 427-429.

Freitag M, Muller I, Poggensee G, Scharnetzki E, Gensichen J, Hunfeld KP (2011) German Investigation of Lyme Borreliosis: Evaluation of Therapeutic and Diagnostic Cost (GILEAD). *Clinical Microbiology and Infection* 17: S605.

Fried MD, Pietrucha D, Madigan G, Bal A (2002) *Borrelia burgdorferi* persists in the gastrointestinal tract of children and adolescents with Lyme disease. *Journal of Spirochetal and Tick-borne Diseases* 9: 11-15.

Fried MD, Adelson ME, Mordechai E (2004) Simultaneous gastrointestinal infections in children and adolescents. *Practical Gastroenterology* 28: 78-80.

Fryland L, Wilhelmsson P, Lindgren PE, Nyman D, Ekerfelt C, Forsberg P (2011) Low risk of developing *Borrelia burgdorferi* infection in the south-east of Sweden after being bitten by a *Borrelia burgdorferi*-infected tick. *International Journal of Infectious Diseases* 15: e174-181.

Fulop B, Poggensee G (2008) Epidemiological situation of Lyme borreliosis in Germany: surveillance data from six Eastern German States, 2002 to 2006. *Parasitology Research* 103 Suppl 1: S117-120.

Fulton JP (2008) Estimating the incidence of new onset Lyme disease in Rhode Island. *Medicine & Health, Rhode Island* 91: 229-231.

Furst B, Glatz M, Kerl H, Mullegger RR (2006) The impact of immunosuppression on erythema migrans. A retrospective study of clinical presentation, response to treatment and production of *Borrelia* antibodies in 33 patients. *Clinical and Experimental Dermatology* 31: 509-514.

Gaito A, Gjivoje V, Lutz S, Baxter B (2014) Comparative analysis of the infectivity rate of both *Borrelia burgdorferi* and *Anaplasma phagocytophilum* in humans and dogs in a New Jersey community. *Infection and Drug Resistance* 7: 199-201.

Galev A, Zvetkov V, Genov K (2005) Pulse therapy with ceftriaxone on Lyme neuroborreliosis. *Problems of Infectious and Parasitic Diseases* 33: 15-17.

Gardulf A, Wohlfart I, Gustafson R (2004) A prospective cross-over field trial shows protection of lemon eucalyptus extract against tick bites. *Journal of Medical Entomology* 41: 1064-1067.

Garnett JM, Connally NP, Stafford KC, III, Cartter ML (2011) Evaluation of deer-targeted interventions on Lyme disease incidence in Connecticut. *Public Health Reports* 126: 446-454.

Garro AC, Rutman M, Simonsen K, Jaeger JL, Chapin K, Lockhart G (2009) Prospective validation of a clinical prediction model for Lyme meningitis in children. *Pediatrics* 123: e829-834.

Garro AC, Rutman MS, Simonsen K, Jaeger JL, Chapin K, Lockhart G (2011) Prevalence of Lyme meningitis in children with aseptic meningitis in a Lyme disease-endemic region. *Pediatric Infectious Disease Journal* 30: 990-992.

Garvin JH, Gordon TF, Haignere C, Ducette JP (2005) Development of a public health assessment tool to prevent Lyme disease: tool construction and validation. *Perspectives in Health Information Management* 2: 11.

Gaudin RA, Jowett N, Banks CA, Knox CJ, Hadlock TA (2016) Bilateral Facial Paralysis: A 13 Year Experience. *Plastic and Reconstructive Surgery* 8: 8.

Gazi H, Ozkutuk N, Ecemis O, Atasoylu G, Koroglu G, Kurutepe S, Horasan GD (2016) Seroprevalence of West Nile virus, Crimean-Congo hemorrhagic fever virus, Francisella tularensis and Borrelia burgdorferi in rural population of Manisa, western Turkey. *Journal of Vector Borne Diseases* 53: 112-117.

Geier DA, Geier MR (2002) Lyme vaccination safety. *Journal of Spirochetal and Tick-borne Diseases* 9: 16-22.

Gerritzen A, Brandt S (2012) Bead based multiplex immunoassays for the laboratory neuroborreliosis. *Clinical Chemistry and Laboratory Medicine* 50 (9): A223-A224.

Ghafar MW, Eltablawy NA (2011) Molecular survey of five tick-borne pathogens (Ehrlichia chaffeensis, Ehrlichia ewingii, Anaplasma phagocytophilum, Borrelia burgdorferi sensu lato and Babesia microti) in Egyptian farmers. *Global Veterinaria* 7: 249-255.

Gladnishka T, Tasseva E, Trifonova I, Ivanova V, Christova I (2012) Detection of Borrelia burgdorferi sensu lato in urine specimens from patients with early and late Lyme borreliosis. *Clinical Microbiology and Infection* 18: 837.

Glatz M, Resinger A, Semmelweis K, Ambros-Rudolph CM, Mullegger RR (2015) Clinical spectrum of skin manifestations of Lyme borreliosis in 204 children in Austria. *Acta Dermato-Venereologica* 95: 565-571.

Glaude PD, Huber AM, Mailman T, Ramsey S, Lang B, Stringer E (2015) Clinical characteristics, treatment and outcome of children with Lyme arthritis in Nova Scotia. *Paediatrics & Child Health* 20: 377-380.

Glaude Pier D, Huber Adam M, Mailman T, Ramsey S, Lang B, Stringer E (2014) A82: Lyme Arthritis: an Emerging Clinical Problem in Nova Scotia, Canada. *Arthritis and Rheumatology* 66: S115-S115.

Gliniewicz A, Mikulak E, Królasik A, Myślewicz J (2014) Tick-bite preventative behavior of people on recreational areas in Warsaw. *8th International Conference on Urban Pests, 20-23 July 2014*. Zurich, Switzerland: OOK-Press Kft.

Glitzbecker MP, Kocher MS, Sundel RP, Shore BJ, Spencer SA, Kasser JR (2011) Primary Lyme arthritis of the pediatric hip. *Journal of Pediatric Orthopedics* 31: 787-790.

Goettner G, Schulte-Spechtel U, Fingerle V, Wilske B (2004) A new recombinant IgG and IgM line immuno blot improves serodiagnosis of Lyme Borreliosis. *International Journal of Medical Microbiology* 294: 93-93.

Goettner G, Schulte-Spechtel U, Hillermann R, Liegl G, Wilske B, Fingerle V (2005) Improvement of Lyme borreliosis serodiagnosis by a newly developed recombinant immunoglobulin G (IgG) and IgM line immunoblot assay and addition of VlsE and DbpA homologues. *Journal of Clinical Microbiology* 43: 3602-3609.

Goettner G, Schulte-Spechtel U, Liegl G, Wilske B, Fingerle V (2006) Improvement of Lyme borreliosis serodiagnosis by a new recombinant IgG and IgM line immunoblot. *International Journal of Medical Microbiology* 296: 285-287.

Gomes-Solecki MJ, Wormser GP, Schriefer M, Neuman G, Hannafey L, Glass JD, Dattwyler RJ (2002) Recombinant assay for serodiagnosis of Lyme disease regardless of OspA vaccination status. *Journal of Clinical Microbiology* 40: 193-197.

Goncalves DD, Benitez A, Lopes-Mori FM, Alves LA, Freire RL, Navarro IT, Santana MA, Dos Santos LR, Carreira T, Vieira ML, de Freitas JC (2013) Zoonoses in humans from small rural properties in Jataizinho, Parana, Brazil. *Brazilian Journal of Microbiology* 44: 125-131.

Goncalves DD, Moura RA, Nunes M, Carreira T, Vidotto O, Freitas JC, Vieira ML (2015) *Borrelia burgdorferi sensu lato* in humans in a rural area of Parana State, Brazil. *Brazilian Journal of Microbiology* 46: 571-575.

Goodlad JR, Davidson MM, Gordon P, Billington R, Ho-Yen DO (2002) Morphea and *Borrelia burgdorferi*: results from the Scottish Highlands in the context of the world literature. *Molecular Pathology* 55: 374-378.

Goodson SG (2003) Lyme Disease in the differential diagnosis of psychiatric patients. *Biological Psychiatry* 53: 585-585.

Gordillo G, Solorzano Santos F, Torres J, Velazquez E, Ramon G, Garcia R, Vargas M (2010) Epidemiological, clinical and zoonotic evidences for the existence of Lyme disease in Central of Mexico. *International Journal of Infectious Diseases* 14: e378-e379.

Gospodinova M, Christova I (2010) Lyme borreliosis in patients over 60-years-OLD. *Problems of Infectious and Parasitic Diseases* 38: 20-24.

Goteri G, Ranaldi R, Simonetti O, Capretti R, Menzo S, Stramazzotti D, Morichetti D, Offidani AM, Rupoli S, Leoni P (2007) Clinicopathological features of primary cutaneous B-cell lymphomas from an academic regional hospital in central Italy: no evidence of *Borrelia burgdorferi* association. *Leukemia & Lymphoma* 48: 2184-2188.

Gould LH, Nelson RS, Griffith KS, Hayes EB, Piesman J, Mead PS, Cartter ML (2008) Knowledge, attitudes, and behaviors regarding Lyme disease prevention among Connecticut residents, 1999-2004. *Vector Borne and Zoonotic Diseases* 8: 769-776.

Gouriet F, Levy PY, Casalta JP, Zandotti C, Collart F, Lepidi H, Cautela J, Bonnet JL, Thuny F, Habib G, Raoult D (2015) Etiology of pericarditis in a prospective cohort of 1162 cases. *American Journal of Medicine* 128: 784.e781-784.e788.

Government of Canada (2015a) *National Lyme Disease Surveillance in Canada 2009-2012*. <http://healthycanadians.gc.ca/publications/diseases-conditions-maladies-affections/2009-2012-lyme/index-eng.php> (accessed 30-10-2017).

Government of Canada (2015b) *National Lyme Disease Surveillance in Canada 2013: web report*. <http://healthycanadians.gc.ca/publications/diseases-conditions-maladies-affections/lyme-surveillance-2013/index-eng.php> (accessed 30-10-2017).

Government of Canada (2016) *Surveillance of Lyme disease in Canada*. <http://healthycanadians.gc.ca/diseases-conditions-maladies-affections/disease-maladie/lyme/surveillance-eng.php> (accessed 30-10-2017).

Grabe HJ, Spitzer C, Ludemann J, Guertler L, Kramer A, John U, Freyberger HJ, Volzke H (2008) No association of seropositivity for anti-Borrelia IgG antibody with mental and physical complaints. *Nordic Journal of Psychiatry* 62: 386-391.

Grankvist A, Sandelin LL, Andersson J, Fryland L, Wilhelmsson P, Lindgren PE, Forsberg P, Wenneras C (2015) Infections with *Candidatus Neoehrlichia mikurensis* and Cytokine Responses in 2 Persons Bitten by Ticks, Sweden. *Emerging Infectious Diseases* 21: 1462-1465.

Greco F, Vallone A, Apuzzo G, Vallone G, Tenuta R, Guaglianone L, Giraldi C (2003) Presence and indigenous nature of Lyme disease in southern Italy. *New Microbiologica* 26: 391-394.

Greenberg R (2015) Tick-borne infections and pediatric bipolar disorder. *Bipolar Disorders* 17: 62-63.

Greenberg R (2016) Tick-borne infections and pediatric bipolar disorder. *Neurology Psychiatry and Brain Research* 22 (1): 11.

Greene SK, Levin-Rector A, Hadler JL, Fine AD (2015) Disparities in Reportable Communicable Disease Incidence by Census Tract-Level Poverty, New York City, 2006-2013. *American Journal of Public Health* 105: e27-34.

Grieco JA, Rissenberg M (2013) Attention and Learning in Children With Lyme Disease and Children With Attention Deficit Hyperactivity Disorder. *Clinical Neuropsychologist* 27: 621-621.

Grieco Julie A (2014) *A comparison of memory and executive functioning in children with Lyme disease and children with attention-deficit/hyperactivity disorder*. University of Chicago Medical Center.

Groh BP, Ahn NJ (2012) Lyme arthritis outcomes in children: A single center cohort study. *Pediatric Rheumatology* 10: A38.

Grygorczuk S, Peter O, Zajkowska J, Kondrusik M, Moniuszko A, Pancewicz S (2010) Preferential reactivity towards *Borrelia afzelii* in the sera of patients with Lyme borreliosis from the north-east of Poland. *Clinical Microbiology and Infection* 16: S623.

Grzeszczuk A, Puzanowska B, Miegoc H, Prokopowicz D (2004a) Incidence and prevalence of infection with *Anaplasma phagocytophilum*. Prospective study in healthy individuals exposed to ticks. *Annals of Agricultural and Environmental Medicine* 11: 155-157.

Grzeszczuk A, Stanczak J, Kubica-Biernat B, Racewicz M, Kruminis-Lozowska W, Prokopowicz D (2004b) Human anaplasmosis in north-eastern Poland: seroprevalence in humans and prevalence in *Ixodes ricinus* ticks. *Annals of Agricultural and Environmental Medicine* 11: 99-103.

Grzeszczuk A, Ziarko S, Kovalchuk O, Stanczak J (2006) Etiology of tick-borne febrile illnesses in adult residents of North-Eastern Poland: report from a prospective clinical study. *International Journal of Medical Microbiology* 296 Suppl 40: 242-249.

Grzeszczuk A, Puzanowska B, Ziarko S (2009) *Anaplasma phagocytophilum* infection in patients with early Lyme borreliosis, erythema migrans, in north-eastern Poland. *Clinical Microbiology and Infection* 15 Suppl 2: 17-18.

Guellec D, Narbonne V, Cornec D, Marhadour T, Dougados M, Daures JP, Jousse-Joulin S, Devauchelle V, Saraux A (2014) Interest of systematic Lyme serology in context of recent onset arthritis. *Arthritis and Rheumatology* 66: S944.

Guellec D, Narbonne V, Cornec D, Marhadour T, Varache S, Dougados M, Daures JP, Jousse-Joulin S, Devauchelle-Pensec V, Saraux A (2016) Diagnostic impact of routine Lyme serology in recent-onset arthritis: results from the ESPOIR cohort. *RMD Open* 2: e000120.

Gunes T, Poyraz O, Atas M, Turgut NH (2011) The seroprevalence of *Anaplasma phagocytophilum* in humans from two different climatic regions of Turkey and its co-seroprevalence rate with *Borrelia burgdorferi* Turkiyenin iki farkli iklim bolgesinde yasayan insanlarda *Anaplasma phagocytophilum* seroprevalansi ve *Borrelia burgdorferi* ile ko-seroprevalans oranlari. *Turkish Journal of Medical Sciences* 41: 903-908.

Gziut AI, Gil RJ, Pawlak A, Mozenska O (2012) LV and RV function in patients with Lyme disease diagnosed with endomyocardial biopsy-a long term follow-up. *European Heart Journal* 33: 326-326.

Hajek T, Paskova B, Janovska D, Bahbouh R, Hajek P, Libiger J, Hoschl C (2002) Higher prevalence of antibodies to *Borrelia burgdorferi* in psychiatric patients than in healthy subjects. *American Journal of Psychiatry* 159: 297-301.

Hajek T, Libiger J, Janovska D, Hajek P, Alda M, Hoschl C (2006) Clinical and demographic characteristics of psychiatric patients seropositive for *Borrelia burgdorferi*. *European Psychiatry* 21: 118-122.

Hall-Walker C, Lundquist C, McCarthy H (2006) Promoting specialty care for Lyme disease: lessons learned. *Medicine & Health, Rhode Island* 89: 186.

Halperin JJ (2003) Facial nerve palsy associated with Lyme disease. *Muscle & Nerve* 28: 516-517.

Halperin JJ, Shapiro ED, Logigian E, Belman AL, Dotevall L, Wormser GP, Krupp L, Gronseth G, Bever CT, Jr. (2007) Practice parameter: Treatment of nervous system Lyme disease (an evidence-based review): Report of the Quality Standards Subcommittee of the American Academy of Neurology. *Neurology* 69: 91-102.

Halpern MD, Molins CR, Schriefer M, Jewett MW (2014) Simple objective detection of human lyme disease infection using immuno-PCR and a single recombinant hybrid antigen. *Clinical and Vaccine Immunology* 21: 1094-1105.

Hansmann Y, Leyer C, Lefebvre N, Revest M, Rabaud C, Alfandari S, Christmann D, Tattevin P (2014) Feedback on difficulties raised by the interpretation of serological tests for the diagnosis of Lyme disease. *Medecine et Maladies Infectieuses* 44: 199-205.

Hao Q, Geng Z, Hou XX, Tian Z, Yang XJ, Jiang WJ, Shi Y, Zhan ZF, Li GH, Yu d, Wang HY, Xu JG, Wan KL (2013) Seroepidemiological investigation of Lyme disease and human granulocytic anaplasmosis among people living in forest areas of eight provinces in China. *Biomedical and Environmental Sciences* 26: 185-189.

Hashimoto S, Kawado M, Murakami Y, Izumida M, Ohta A, Tada Y, Shigematsu M, Yasui Y, Taniguchi K, Nagai M (2007) Epidemics of vector-borne diseases observed in infectious disease surveillance in Japan, 2000-2005. *Journal of Epidemiology* 17 Suppl: S48-55.

Hassett AL, Dave PP, Dunham JS, Radvanski DC, Gandiga PC, Buyske SG, Sigal LH (2003a) Sleep disturbances, fatigue and memory complaints attributed to chronic Lyme disease. *Arthritis and Rheumatism* 48: S306-S307.

Hassett AL, Radvanski DC, Gandiga PC, Escobar JI, Buyske SG, Sigal LH (2003b) Co-morbid mental disorders in chronic Lyme disease: The first 50 patients. *Arthritis and Rheumatism* 48: S506-S506.

Hassett AL, Radvanski DC, Buyske S, Sigal LH (2004) Maladaptive schemas in chronic Lyme disease. *Arthritis and Rheumatism* 50: S464-S465.

Hassett AL, Radvanski DC, Buyske S, Savage SV, Gara M, Escobar JI, Sigal LH (2008) Role of psychiatric comorbidity in chronic Lyme disease. *Arthritis and Rheumatism* 59: 1742-1749.

Hassett AL, Radvanski DC, Buyske S, Savage SV, Sigal LH (2009) Psychiatric comorbidity and other psychological factors in patients with "chronic Lyme disease". *American Journal of Medicine* 122: 843-850.

Hassett AL, Shlimbaum T, Radvanski DC, Herman DJ, Nahass R, Buyske S, Sigal LH (2010) A prospective, longitudinal cohort study evaluating psychosocial risk and protective factors for Post Lyme Disease Syndrome. *Arthritis and Rheumatism* 62: 1320.

Hassing RJ, Verbon A (2011) Serological testing for *Borrelia*: it's a mess. *Nederlands Tijdschrift voor Geneeskunde* 155: A3459.

Hassler D, Schnauffer M, Ehrfeld H, Muller E (2004) Disappearance of specific immune response after successful therapy of chronic Lyme borreliosis. *International Journal of Medical Microbiology* 293 Suppl 37: 161-164.

Hatchette TF, Johnston BL, Schleihauf E, Mask A, Haldane D, Drebot M, Baikie M, Cole TJ, Fleming S, Gould R, Lindsay R (2015) Epidemiology of Lyme Disease, Nova Scotia, Canada, 2002-2013. *Emerging Infectious Diseases* 21: 1751-1758.

Haugeberg G, Hansen IJ, Skarpaas T, Noraas S, Kjelland V (2014) Lyme arthritis in Southern Norway--an endemic area for Lyme borreliosis. *BMC Infectious Diseases* 14: 185.

Health Protection Scotland (2009) Epidemiology and risks of tick-borne Lyme borreliosis. *HPS Weekly Report* 43: 213-214.

Health Protection Surveillance Centre (2013) *HPSC Annual Epidemiological Report - Lyme neuroborreliosis in Ireland 2013*. <http://www.hpsc.ie/A-Z/Vectorborne/LymeDisease/EpidemiologicalData/> (accessed 30-10-2017).

Heikkila T, Seppala I, Saxen H, Panelius J, Peltomaa M, Huppertz HI, Lahdenne P (2002a) Cloning of the gene encoding the decorin-binding protein B (DbpB) in *Borrelia burgdorferi* sensu lato and characterisation of the antibody responses to DbpB in Lyme borreliosis. *Journal of Medical Microbiology* 51: 641-648.

Heikkila T, Seppala I, Saxen H, Panelius J, Peltomaa M, Julin T, Carlsson SA, Lahdenne P (2002b) Recombinant BBK32 protein in serodiagnosis of early and late Lyme borreliosis. *Journal of Clinical Microbiology* 40: 1174-1180.

Heikkila T, Saxen H, Seppala I, Lonnqvist T, Sillanpaa H, Lahdenne P (2005) New antigens for serologic diagnosis of neuroborreliosis in children. *Pediatric Infectious Disease Journal* 24: 709-712.

Heinz C, Schoonbrood S, Heiligenhaus A (2014) Intermediate uveitis in children and young adults: differences in clinical course, associations and visual outcome. *British Journal of Ophthalmology* 98: 1107-1111.

Heller JE, Benito-Garcia E, Maher NE, Chibnik LB, Maher CP, Shadick NA (2010) Behavioral and attitudes survey about Lyme disease among a Brazilian population in the endemic area of Martha's Vineyard, Massachusetts. *Journal of Immigrant & Minority Health* 12: 377-383.

Henningsson AJ, Malmvall BE, Ernerudh J, Matussek A, Forsberg P (2010) Neuroborreliosis--an epidemiological, clinical and healthcare cost study from an endemic area in the south-east of Sweden. *Clinical Microbiology and Infection* 16: 1245-1251.

Henningsson AJ, Christiansson M, Tjernberg I, Lofgren S, Matussek A (2014) Laboratory diagnosis of Lyme neuroborreliosis: a comparison of three CSF anti-Borrelia antibody assays. *European Journal of Clinical Microbiology & Infectious Diseases* 33: 797-803.

Henry B, Roth D, Reilly R, MacDougall L, Mak S, Li M, Muhamad M (2011) How big is the Lyme problem? Using novel methods to estimate the true number of Lyme disease cases in British Columbia residents from 1997 to 2008. *Vector Borne and Zoonotic Diseases* 11: 863-868.

Henry B, Crabtree A, Roth D, Blackman D, Morshed M (2012) Lyme disease: knowledge, beliefs, and practices of physicians in a low-endemic area. *Canadian Family Physician* 58: e289-295.

Hermanowska-Szpakowicz T, Skotarczak B, Kondrusik M, Rymaszewska A, Sawczuk M, Maciejewska A, Adamska M, Pancewicz S, Zajkowska J (2004) Detecting DNAs of Anaplasma phagocytophilum and Babesia in the blood of patients suspected of Lyme disease. *Annals of Agricultural and Environmental Medicine* 11: 351-354.

Hermansen LT, Loft AG, Christiansen AA, Gilbert L, Garg K, Karvonen K, Jurik AG, Weber U, Manniche C, Jensen TS, Arnbak B, Ostergaard M, Pedersen SJ, Barington T, Kolmos HJ, Horslev-Petersen K, Hendricks O (2015) Is there an association between spondyloarthritis and antibodies towards Borrelia, Ehrlichia and chlamydia species? *Annals of the Rheumatic Diseases* 74: 495.

Hernandez-Novoa B, Orduna A, Bratos MA, Eiros JM, Fernandez JM, Gutierrez MP, Alonso PA, Mantecon MA, Almaraz A, Oteo JA, Rodriguez-Torres A (2003) Utility of a commercial immunoblot kit (BAG-Borrelia blot) in the diagnosis of the preliminary stages of Lyme disease. *Diagnostic Microbiology and Infectious Disease* 47: 321-329.

Herremans T, Hofhuis A, Notermans DW, Nozari N, Nijhuis C, Kortbeek LM, Van Der Giessen J (2010) Combining C6 ELISA and IgM immunoblot for the detection of antibodies in early Lyme infection. *Clinical Microbiology and Infection* 16: S621.

Herrington James E, Jr. (2003) A national survey of risk perceptions and practices to prevent tick-borne Lyme disease and mosquito-borne viral encephalitis. *Dissertation Abstracts International: Section B: The Sciences and Engineering* 63: 4137.

Herrington JE (2004) Risk perceptions regarding ticks and Lyme disease: a national survey. *American Journal of Preventive Medicine* 26: 135-140.

Herrmann JA, Dahm NM, Ruiz MO, Brown WM (2014) Temporal and Spatial Distribution of Tick-Borne Disease Cases among Humans and Canines in Illinois (2000-2009). *Environmental health insights* 8: 15-27.

Hertmanowska H, Szepke K, Zielonka D (2014) *Borrelia burgdorferi* - infection agent - risk assessment in MS. *Multiple Sclerosis* 20: 174-175.

Hill D, Holmes T (2015) Provider knowledge, attitudes, and practices regarding Lyme disease in Arkansas. *Journal of Community Health* 40: 339-346.

Hill Dana G (2013) *Provider knowledge, attitudes, and practices regarding Lyme disease in Arkansas*. Walden University.

Hinckley AF, Connally NP, Meek JI, Johnson BJ, Kemperman MM, Feldman KA, White JL, Mead PS (2014) Lyme disease testing by large commercial laboratories in the United States. *Clinical Infectious Diseases* 59: 676-681.

Hinckley AF, Meek JI, Ray JA, Niesobecki SA, Connally NP, Feldman KA, Jones EH, Backenson PB, White JL, Lukacik G, Kay AB, Miranda WP, Mead PS (2016) Effectiveness of Residential Acaricides to Prevent Lyme and Other Tick-borne Diseases in Humans. *Journal of Infectious Diseases* 214: 182-188.

Hjetland R, Nilsen RM, Grude N, Ulvestad E (2014) Seroprevalence of antibodies to *Borrelia burgdorferi* sensu lato in healthy adults from western Norway: risk factors and methodological aspects. *APMIS* 122: 1114-1124.

Hjetland R, Reiso H, Ihlebaek C, Nilsen RM, Grude N, Ulvestad E (2015) Subjective health complaints are not associated with tick bites or antibodies to *Borrelia burgdorferi* sensu lato in blood donors in western Norway: a cross-sectional study. *BMC Public Health* 15: 657.

Ho-Yen D, Mavin S, Hopkins PC, Milner RM, Evans R, Chatterton JMW, Joss AWL (2008) Lyme borreliosis: differences between the patients who are tested and those with the infection. *HPS Weekly Report* 42: 441-443.

Hofhuis A, van der Giessen JW, Borgsteede FH, Wielinga PR, Notermans DW, van Pelt W (2006) Lyme borreliosis in the Netherlands: strong increase in GP consultations and hospital admissions in past 10 years. *Euro Surveillance* 11: E060622.060622.

Hofhuis A, Herremans T, Notermans DW, Sprong H, Fonville M, van der Giessen JWB, van Pelt W (2013) A prospective study among patients presenting at the general practitioner with a tick bite or erythema migrans in The Netherlands. *PLoS ONE* 8: e64361.

Hofhuis A, Arend SM, Davids CJ, Tukkie R, van Pelt W (2015a) General practitioner reported incidence of Lyme carditis in the Netherlands. *Netherlands Heart Journal* 23: 533-538.

Hofhuis A, Harms M, Bennema S, van den Wijngaard CC, van Pelt W (2015b) Physician reported incidence of early and late Lyme borreliosis. *Parasites & Vectors* 8: 161.

Hofhuis A, Harms M, van den Wijngaard C, Sprong H, van Pelt W (2015c) Continuing increase of tick bites and Lyme disease between 1994 and 2009. *Ticks and Tick-Borne Diseases* 6: 69-74.

Hofhuis A, Bennema S, Harms M, van Vliet AJH, Takken W, van den Wijngaard CC, van Pelt W (2016) Decrease in tick bite consultations and stabilization of early Lyme borreliosis in the Netherlands in 2014 after 15 years of continuous increase. *BMC Public Health* 16: 425.

Hofmann H, Wallich R, Lorenz I, Bechtel M (2006) Comparison of a new line assay using purified and recombinant antigens with a European lysate blot for serodiagnosis of Lyme borreliosis. *International Journal of Medical Microbiology* 296: 288-290.

Hohman MH, Hadlock TA (2014) Etiology, diagnosis, and management of facial palsy: 2000 patients at a facial nerve center. *Laryngoscope* 124: E283-293.

Honegr K, Hulinska D, Beran J, Dostal V, Havlasova J, Cermakova Z (2004) Long term and repeated electron microscopy and PCR detection of *Borrelia burgdorferi sensu lato* after an antibiotic treatment. *Central European Journal of Public Health* 12: 6-11.

Hook SA, Nelson CA, Mead PS (2015) U.S. public's experience with ticks and tick-borne diseases: Results from national HealthStyles surveys. *Ticks and Tick-Borne Diseases* 6: 483-488.

Horowitz HW, Aguero-Rosenfeld ME, Holmgren D, McKenna D, Schwartz I, Cox ME, Wormser GP (2013) Lyme disease and human granulocytic anaplasmosis coinfection: impact of case definition on coinfection rates and illness severity. *Clinical Infectious Diseases* 56: 93-99.

Hsia EC, Chung JB, Schwartz JS, Albert DA (2002) Cost-effectiveness analysis of the Lyme disease vaccine. *Arthritis and Rheumatism* 46: 1651-1660.

Hubalek Z (2005) North Atlantic weather oscillation and human infectious diseases in the Czech Republic, 1951-2003. *European Journal of Epidemiology* 20: 263-270.

Huckova D, Vozarova L, Ondrkalova M, Traubner P, Streharova A, Predny J (2003) Contribution to laboratory diagnostics of neuroborreliosis. *Bratislavske Lekarske Listy* 104: 120-124.

Huegli D, Moret J, Rais O, Moosmann Y, Erard P, Malinverni R, Gern L (2011) Prospective study on the incidence of infection by *Borrelia burgdorferi sensu lato* after a tick bite in a highly endemic area of Switzerland. *Ticks and Tick-Borne Diseases* 2: 129-136.

Hufschmidt A, Muller-Felber W, Tzitiridou M, Fietzek UM, Haberl C, Heinen F (2008) Canalicular magnetic stimulation lacks specificity to differentiate idiopathic facial palsy from borreliosis in children. *European Journal of Paediatric Neurology* 12: 366-370.

Hufschmidt A, Shabarin V, Yakovlev-Leyendecker O, Deppe O, Rauer S (2009) Prevalence of taste disorders in idiopathic and *B. burgdorferi*-associated facial palsy. *Journal of Neurology* 256: 1750-1752.

Hulinska D, Votypka J, Plch J, Vlcek E, Valesova M, Bojar M, Hulinsky V, Smetana K (2002) Molecular and microscopical evidence of *Ehrlichia* spp. and *Borrelia burgdorferi sensu lato* in patients, animals and ticks in the Czech Republic. *New Microbiologica* 25: 437-448.

Hunfeld KP, Ernst M, Zachary P, Jaulhac B, Sonneborn HH, Brade V (2002) Development and laboratory evaluation of a new recombinant ELISA for the serodiagnosis of Lyme disease. *Wiener Klinische Wochenschrift* 114: 580-585.

Hurt L, Dorsey KA (2014) The geographic distribution of incident Lyme disease among active component service members stationed in the continental United States, 2004-2013. *Medical Surveillance Monthly Report* 21: 13-15.

Hytonen J, Kortela E, Waris M, Puustinen J, Salo J, Oksi J (2014) CXCL13 and neopterin concentrations in cerebrospinal fluid of patients with Lyme neuroborreliosis and other diseases that cause neuroinflammation. *Journal of Neuroinflammation* 11: 103.

Insaf T, Lin S, Sheridan S (2012) Synoptic spatial classification and Lyme disease in New York state (1991-2006). *Epidemiology* 1: 5529.

Institute of Environmental Science and Research (2009) Notifiable disease surveillance. *New Zealand Public Health Surveillance Report* 7: 3-4.

Isaac BM, Masonbrink A, Kennedy J, Greene SK, Hennessy RR, Rosen JB, Trieu L, Ngai S, Morse SS, Weiss D (2016) Reportable Bacterial Infections among New York City-Born Infants, 2001-2009. *Journal of Pediatrics* 174: 218-255.e214.

Ivacic L, Reed KD, Mitchell PD, Ghebranious N (2007) A LightCycler TaqMan assay for detection of *Borrelia burgdorferi sensu lato* in clinical samples. *Diagnostic Microbiology and Infectious Disease* 57: 137-143.

Jaamaa S, Salonen M, Seppala I, Piiparinen H, Sarna S, Koskiniemi M (2003) Varicella zoster and *Borrelia burgdorferi* are the main agents associated with facial paresis, especially in children. *Journal of Clinical Virology* 27: 146-151.

Jaaskelainen AJ, Viitala SM, Kurkela S, Hepojoki S, Sillanpaa H, Kallio-Kokko H, Bergstrom T, Suni J, Narvanen A, Vapalahti O, Vaheri A (2014) Performance of a multiplexed serological microarray for the detection of antibodies against central nervous system pathogens. *Journal of Microbiological Methods* 100: 27-31.

Jackson AN, Orr KK, Bratberg JP, Silverblatt F (2014) Pharmacist initiation of postexposure doxycycline for Lyme disease prophylaxis. *Journal of the American Pharmacists Association* 54: 69-73.

Jackson LE, Hilborn ED, Thomas JC (2006a) Towards landscape design guidelines for reducing Lyme disease risk. *International Journal of Epidemiology* 35: 315-322.

Jackson LE, Levine JF, Hilborn ED (2006b) A comparison of analysis units for associating Lyme disease with forest-edge habitat. *Community Ecology* 7: 189-197.

Jacobson DM (2003) Lyme disease and optic neuritis: long-term follow-up of seropositive patients. *Neurology* 60: 881-882.

Jansson C, Carlsson SA, Granlund H, Wahlberg P, Nyman D (2005) Analysis of *Borrelia burgdorferi* IgG antibodies with a combination of IgG ELISA and VlsE C6 peptide ELISA. *Clinical Microbiology and Infection* 11: 147-150.

Jarefors S, Bennet L, You E, Forsberg P, Ekerfelt C, Berglund J, Ernerudh J (2006) Lyme borreliosis reinfection: might it be explained by a gender difference in immune response? *Immunology* 118: 224-232.

Jares TM, Mathiason MA, Kowalski TJ (2014) Functional outcomes in patients with *Borrelia burgdorferi* reinfection. *Ticks and Tick-Borne Diseases* 5: 58-62.

Jaulhac B, De Martino S, Tabouret M (2007) Evaluation of Platelia™ Lyme IgM and Platelia™ Lyme IgG assays for Lyme borreliosis diagnosis. *International Journal of Antimicrobial Agents* 29: S421-S421.

Jenke AC, Stoek LM, Zilbauer M, Wirth S, Borusiak P (2011) Facial palsy: etiology, outcome and management in children. *European Journal of Paediatric Neurology* 15: 209-213.

Jenks NP, Trapasso J (2005) Lyme risk for immigrants to the United States: the role of an educational tool. *Journal of Travel Medicine* 12: 157-160.

Jespersen DJ, Smith TF, Rosenblatt JE, Cockerill FR, III (2002) Comparison of the Borrelia DotBlot G, MarDx, and VIDAS enzyme immunoassays for detecting immunoglobulin G antibodies to Borrelia burgdorferi in human serum. *Journal of Clinical Microbiology* 40: 4782-4784.

Jiang Y, Wan KL, Geng Z, Hou XX (2005) Standard criteria of Western blot for the diagnosis of Lyme disease caused by Borrelia garinii in China. *Chinese Journal of Microbiology and Immunology* 25: 594-598.

Jin C, Roen D, Kellermann M, Kellermann G (2013a) Development and validation of a novel IFN-gamma ELISPOT assay for sensitive and specific detection of antigen-specific T Cell response to borrelia burgdorferi. *Clinical Chemistry* 1): A198.

Jin C, Roen DR, Lehmann PV, Kellermann GH (2013b) An Enhanced ELISPOT Assay for Sensitive Detection of Antigen-Specific T Cell Responses to Borrelia burgdorferi. *Cells* 2: 607-620.

Jobe DA, Lovrich SD, Asp KE, Mathiason MA, Albrecht SE, Schell RF, Callister SM (2008) Significantly improved accuracy of diagnosis of early Lyme disease by peptide enzyme-linked immunosorbent assay based on the borreliacidal antibody epitope of Borrelia burgdorferi OspC. *Clinical and Vaccine Immunology* 15: 981-985.

Johnson BJ, Pilgard MA, Russell TM (2014a) Assessment of new culture method for detection of Borrelia species from serum of Lyme disease patients. *Journal of Clinical Microbiology* 52: 721-724.

Johnson JL, Ginsberg HS, Zhioua E, Whitworth UG, Jr., Markowski D, Hyland KE, Hu R (2004) Passive tick surveillance, dog seropositivity, and incidence of human Lyme disease. *Vector Borne and Zoonotic Diseases* 4: 137-142.

Johnson L, Aylward A, Stricker RB (2011) Healthcare access and burden of care for patients with Lyme disease: a large United States survey. *Health Policy* 102: 64-71.

Johnson L, Wilcox S, Mankoff J, Stricker RB (2014b) Severity of chronic Lyme disease compared to other chronic conditions: a quality of life survey. *PeerJ* 2: e322.

Johnson M, Feder HM, Jr. (2010) Chronic Lyme disease: a survey of Connecticut primary care physicians. *Journal of Pediatrics* 157: 1025-1029.e1021.

Jones KL, Muellegger RR, Means TK, Lee M, Glickstein LJ, Damle N, Sikand VK, Luster AD, Steere AC (2008) Higher mRNA levels of chemokines and cytokines associated with macrophage activation in erythema migrans skin lesions in patients from the United States than in patients from Austria with Lyme borreliosis. *Clinical Infectious Diseases* 46: 85-92.

Jones SG, Conner W, Song B, Gordon D, Jayakaran A (2012) Comparing spatio-temporal clusters of arthropod-borne infections using administrative medical claims and state reported surveillance data. *Spatial and Spatio-Temporal Epidemiology* 3: 205-213.

Jones SG, Coulter S, Conner W (2013) Using administrative medical claims data to supplement state disease registry systems for reporting zoonotic infections. *Journal of the American Medical Informatics Association* 20: 193-198.

Jordan RA, Schulze TL, Jahn MB (2007) Effects of reduced deer density on the abundance of *Ixodes scapularis* (Acari: Ixodidae) and Lyme disease incidence in a northern New Jersey endemic area. *Journal of Medical Entomology* 44: 752-757.

Joss AW, Evans R, Mavin S, Chatterton J, Ho-Yen DO (2008) Development of real time PCR to detect *Toxoplasma gondii* and *Borrelia burgdorferi* infections in postal samples. *Journal of Clinical Pathology* 61: 221-224.

Joss AWL, Davidson MM, Ho-Yen DO, Ludbrook A (2003) Lyme disease - What is the cost for Scotland? *Public Health* 117: 264-273.

Jovanovic D, Atanasievska S, Protic-Djokic V, Rakic U, Lukac-Radoncic E, Ristanovic E (2015) Seroprevalence of *Borrelia burgdorferi* in occupationally exposed persons in the Belgrade area, Serbia. *Brazilian Journal of Microbiology* 46: 807-814.

Jovicic V, Grego EM, Lako BL, Ristovic BM, Lepsanovic ZA, Stajkovic NT (2003) Improved serodiagnosis of early Lyme borreliosis: immunoblot with local *Borrelia afzelii* strain. *APMIS* 111: 1053-1059.

Juchnowicz D, Konarzewska B, Popawska R (2004a) Cognitive functioning in Lyme borreliosis. *European Neuropsychopharmacology* 14: S374-S374.

Juchnowicz D, Rudnik I, Konarzewska B (2004b) Psychiatric symptoms in the course of Lyme borreliosis and tick borne encephalitis. *International Journal of Neuropsychopharmacology* 7: S277-S277.

Jurke A, Bannert N, Brehm K, Fingerle V, Kempf VAJ, Koempf D, Lunemann M, Mayer-Scholl A, Niedrig M, Scholz H, Splettstoesser W, Tappe D, Fischer SF (2015) Serological survey of *Bartonella* spp., *Borrelia burgdorferi*, *Brucella* spp., *Coxiella burnetii*, *Francisella tularensis*, *Leptospira* spp., *Echinococcus*, Hanta-, Tick-borne encephalitis (TBE)-and xenotropic murine leukemia virus-related virus (XMRV) infection in employees of two forestry enterprises in North Rhine-Westphalia (NRW), Germany, 2011-2013. *International Journal of Medical Microbiology* 305: 106-107.

Kacinski M, Zajac A, Skowronek-Bala B, Krocicka S, Gergont A, Kubik A (2007) CNS Lyme disease manifestation in children. *Przegląd Lekarski* 64 Suppl 3: 38-40.

Kadkhoda K, Van Caesele P, Smart G, Mar W (2011) Evaluation of a new health Canada-approved Lyme immunoblot assay for confirmation of positive EIA screen results. *Canadian Journal of Infectious Diseases and Medical Microbiology* 22: 26A.

Kalinova Z, Halanova M, Cislakova L, Sulinova Z, Jarcuska P (2009) Occurrence of IgG antibodies to *Anaplasma phagocytophilum* in humans suspected of Lyme borreliosis in eastern Slovakia. *Annals of Agricultural and Environmental Medicine* 16: 285-288.

Kanerva M, Nissinen J, Moilanen K, Maki M, Lahdenne P, Pitkaranta A (2013) Microbiologic findings in acute facial palsy in children. *Otology & Neurotology* 34: e82-87.

Kaplan RF, Trevino RP, Johnson GM, Levy L, Dornbush R, Hu LT, Evans J, Weinstein A, Schmid CH, Klempner MS (2003) Cognitive function in post-treatment Lyme disease: do additional antibiotics help? *Neurology* 60: 1916-1922.

Karaban I, Vedenkov A, Sebut N (2008) Tick-borne encephalitis and Lyme borreliosis in Belarus Republic, 1998-2007. *EpiNorth* 9: 126.

Karaban I, Vedenkov A, Yashkova S, Sebut N (2009) Epidemiology of tick-borne encephalitis and Lyme disease in the Republic of Belarus, 1998-2007. *EpiNorth* 10: 48-57.

Karatolios K, Maisch B, Pankuweit S (2015) Suspected inflammatory cardiomyopathy. Prevalence of *Borrelia burgdorferi* in endomyocardial biopsies with positive serological evidence. *Herz* 40 Suppl 1: 91-95.

Karreman J, van Norel N, Uiters E, Beaujean D (2014) How to Design Work Related Information for Low-literate Employees? Paper presented at: *2014 IEEE International Professional Communication Conference*, New York, 2014.

Kaya AD, Parlak AH, Ozturk CE, Behcet M (2008) Seroprevalence of *Borrelia burgdorferi* infection among forestry workers and farmers in Duzce, north-western Turkey. *New Microbiologica* 31: 203-209.

Kazakov DV, Belousova IE, Kacerovska D, Sima R, Vanecek T, Vazmitel M, Pizinger K, Michal M (2008) Hyperplasia of hair follicles and other adnexal structures in cutaneous lymphoproliferative disorders: a study of 53 cases, including so-called pseudolymphomatous folliculitis and overt lymphomas. *American Journal of Surgical Pathology* 32: 1468-1478.

Kazi H, de Groot-Mijnes JD, Ten Dam-van Loon NH, Ossewaarde-van Norel J, Oosterheert JJ, de Boer JH (2016) No Value for Routine Serologic Screening for *Borrelia burgdorferi* in Patients With Uveitis in the Netherlands. *American Journal of Ophthalmology* 166: 189-193.

Keilp JG, Corbera K, Slavov I, Taylor MJ, Sackeim HA, Fallon BA (2006) WAIS-III and WMS-III performance in chronic Lyme disease. *Journal of the International Neuropsychological Society* 12: 119-129.

Keino H, Nakashima C, Watanabe T, Taki W, Hayakawa R, Sugitani A, Okada AA (2009) Frequency and clinical features of intraocular inflammation in Tokyo. *Clinical and Experimental Ophthalmology* 37: 595-601.

Kempf W, Kazakov DV, Hubscher E, Gugerli O, Gerbig AW, Schmid R, Palmedo G, Kutzner H (2015) Cutaneous borreliosis associated with T cell-predominant infiltrates: a diagnostic challenge. *Journal of the American Academy of Dermatology* 72: 683-689.

Kerimovic-Morina DK, Jablanovic D, Dmitrovic RP, Peklar P (2003) Juvenile Lyme arthritis. *Annals of the Rheumatic Diseases* 62: 520-520.

Kerimovic-Morina DK, Dmitrovic RRD, Radivojevic SSR, Dunic-Babic VVD, Prodanovic SSP (2006) Antibodies to *Borrelia burgdorferi* in sera and synovial fluid in patients with Lyme arthritis. *Annals of the Rheumatic Diseases* 65: 550-550.

Khatchikian CE, Nadelman RB, Nowakowski J, Schwartz I, Wormser GP, Brisson D (2014) Evidence for strain-specific immunity in patients treated for early Lyme disease. *Infection and Immunity* 82: 1408-1413.

Khatchikian CE, Nadelman RB, Nowakowski J, Schwartz I, Levy MZ, Brisson D, Wormser GP (2015) Public health impact of strain specific immunity to *Borrelia burgdorferi*. *BMC Infectious Diseases* 15: 472.

Kilpatrick HJ, LaBonte AM (2003) Deer hunting in a residential community: the community's perspective. *Wildlife Society Bulletin* 31: 340-348.

Kilpatrick HJ, LaBonte AM, Stafford KC (2014) The relationship between deer density, tick abundance, and human cases of Lyme disease in a residential community. *Journal of Medical Entomology* 51: 777-784.

Kimura M, Sakamoto M, Adachi T, Sagara H (2005) Diagnosis of febrile illnesses in returned travelers using the PC software GIDEON. *Travel Medicine and Infectious Disease* 3: 157-160.

Kindler W, Wolf H, Thier K, Oberndorfer S (2013) Facial palsy as an initial symptom of Lyme neuroborreliosis in an Austrian endemic area. *Journal of the Neurological Sciences* 333: e623.

Kindler W, Wolf H, Thier K, Oberndorfer S (2015) Peripheral facial palsy as an initial symptom of Lyme neuroborreliosis in an Austrian endemic area. *Wiener Klinische Wochenschrift* 10: 10.

Kindstrand E, Nilsson BY, Hovmark A, Pirskanen R, Asbrink E (2002) Peripheral neuropathy in acrodermatitis chronica atrophicans - effect of treatment. *Acta Neurologica Scandinavica*, 106: 253-257.

Kisand KE, Utt M, Kisand KV, Prukk T, Uibo R (2004) Serological description of Estonian patients with Lyme disease, a comparison with control sera from endemic and non-endemic areas. *International Journal of Medical Microbiology* 293 Suppl 37: 174-178.

Kleitz C, Blanc F, Sellal F, Namer IJ, Stephane K, Tranchant C, de Seze J (2007) Lyme disease and dementia. *Neurology* 68: A16-A16.

Klier C, Liebl B, Sing A, Wildner M, Fingerle V (2013) LYDI-sentinel - a surveillance network on the incidence of Lyme disease in Bavaria. *International Journal of Medical Microbiology* 303: 102-102.

Knoll JM, Ridgeway AC, Boogaerts CM, Burket GA, III (2014) Appalachian Trail hikers' ability to recognize Lyme disease by visual stimulus photographs. *Wilderness & Environmental Medicine* 25: 24-28.

Koetsveld J, Tijssse-Klasen E, Herremans T, Hovius JW, Sprong H (2016) Serological and molecular evidence for spotted fever group Rickettsia and Borrelia burgdorferi sensu lato co-infections in The Netherlands. *Ticks and Tick-Borne Diseases* 7: 371-377.

Kondrusik M, Zajkowska J, Pancewicz SA, Grygorczuk S, Hermanowska-Szpakowicz T (2006) Serologic evidence of Borrelia burgdorferi and Anaplasma phagocytophilum infection among patients hospitalized with tick-borne encephalitis (TBE). *International Journal of Medical Microbiology* 296: 302-303.

Kondrusik M, Grygorczuk S, Skotarczak B, Wodecka B, Rymaszewska A, Pancewicz S, Zajkowska J, Swierzbinska R, Hermanowska-Szpakowicz T (2007) Molecular and serological diagnosis of Borrelia burgdorferi infection among patients with diagnosed Erythema migrans. *Annals of Agricultural and Environmental Medicine* 14: 209-213.

Kosan TT, Mavioglu H, Sanlidag T, Akcali S, Ecemis T, Horasan GD (2012) Antibodies against EBV, CMV, VZV, HSV-1, HSV-2, HHV-6B and borrelia Burgdorferi and viral nucleic acids in serum and CSF samples of patients with multiple sclerosis. *European Journal of Neurology* 19: 723-723.

Kovalenko AI, Bondarenko GE, Kotovich LM (2012) Epidemiological situation for tick-borne encephalitis and Lyme disease in the Republic of Karelia, Russia, in 2002-2011. *EpiNorth* 13: 105-111.

Kowalski TJ, Tata S, Berth W, Mathiason MA, Agger WA (2010) Antibiotic treatment duration and long-term outcomes of patients with early Lyme disease from a Lyme disease-hyperendemic area. *Clinical Infectious Diseases* 50: 512-520.

Kowalski TJ, Berth WL, Mathiason MA, Agger WA (2011) Oral antibiotic treatment and long-term outcomes of Lyme facial nerve palsy. *Infection* 39: 239-245.

Krause PJ, McKay K, Thompson CA, Sikand VK, Lentz R, Lepore T, Closter L, Christianson D, Telford SR, Persing D, Radolf JD, Spielman A (2002) Disease-specific diagnosis of coinfecting tickborne zoonoses: babesiosis, human granulocytic ehrlichiosis, and Lyme disease. *Clinical Infectious Diseases* 34: 1184-1191.

Krause PJ, Foley DT, Burke GS, Christianson D, Closter L, Spielman A, Tick-Borne Disease Study G (2006) Reinfection and relapse in early Lyme disease. *American Journal of Tropical Medicine and Hygiene* 75: 1090-1094.

Krause PJ, Narasimhan S, Wormser GP, Barbour AG, Platonov AE, Brancato J, Lepore T, Dardick K, Mamula M, Rollend L, Steeves TK, Diuk-Wasser M, Usmani-Brown S, Williamson P, Sarkisyan DS, Fikrig E, Fish D, Tick Borne D, Group (2014) *Borrelia miyamotoi* sensu lato seroreactivity and seroprevalence in the northeastern United States. *Emerging Infectious Diseases* 20: 1183-1190.

Krbkova L, Bednarova J, Cermakova Z (2016) Improvement of diagnostic approach to Lyme neuroborreliosis in children by using recombinant antigens in detection of intrathecally produced IgM/IgG. *Epidemiologie, Mikrobiologie, Immunologie* 65: 112-117.

Krupp LB, Hyman LG, Grimson R, Coyle PK, Melville P, Ahnn S, Dattwyler R, Chandler B (2003) Study and treatment of post Lyme disease (STOP-LD): a randomized double masked clinical trial. *Neurology* 60: 1923-1930.

Kubanek M, Maluskova J, Hulinska D, Sramko M, Malek I, Kautzner J (2011) Comprehensive assessment of endomyocardial biopsy specimens in patients with recent-onset dilated cardiomyopathy. *European Journal of Heart Failure* 10: S164.

Kubanek M, Sramko M, Berenova D, Hulinska D, Hrbackova H, Maluskova J, Lodererova A, Malek I, Kautzner J (2012) Detection of *Borrelia burgdorferi* sensu lato in endomyocardial biopsy specimens in individuals with recent-onset dilated cardiomyopathy. *European Journal of Heart Failure* 14: 588-596.

Kubova Z, Szanyi J, Langrova J, Kremlacek J, Kuba M, Honegr K (2006) Motion-onset and pattern-reversal visual evoked potentials in diagnostics of neuroborreliosis. *Journal of Clinical Neurophysiology* 23: 416-420.

Kuchynka P, Palecek T, Simek S, Nemecek E, Horak J, Hulinska D, Schramlova J, Vitkova I, Aster V, Linhart A (2010a) The improvement of left ventricular systolic function induced by antibiotic therapy in patients with inflammatory cardiomyopathy caused by *Borrelia burgdorferi* infection. *European Journal of Echocardiography* 11: ii19.

Kuchynka P, Palecek T, Simek S, Nemecek E, Horak J, Schramlova J, Hulinska D, Vitkova I, Aster V, Linhart A (2010b) Has serological testing of antibodies to cardiotropic agents any role in the diagnosis of inflammatory cardiomyopathy? *European Heart Journal* 31: 479.

Kuchynka P, Palecek T, Nemecek E, Kovarnik T, Horak J, Vitkova I, Linhart A (2012) Is improvement of the left ventricular systolic function in patients with new-onset dilated cardiomyopathy related to the presence of virus or inflammation in endomyocardial biopsy? *European Heart Journal* 33: 48.

Kuchynka P, Palecek T, Havranek S, Vitkova I, Nemecek E, Trckova R, Berenova D, Krsek D, Podzimekova J, Fikrle M, Danek BA, Linhart A (2015) Recent-onset dilated cardiomyopathy associated with *Borrelia burgdorferi* infection. *Herz* 40: 892-897.

Kuchynka P, Palecek T, Grus T, Lindner J, Berenova D, Kurzova Z, Balatova P, Krsek D, Vitkova I, Nemecek E, Podzimekova J, Danek AB, Linhart A (2016) Absence of *Borrelia burgdorferi* in the myocardium of subjects with normal left ventricular systolic function: a study using PCR and electron microscopy. *Biomedical Papers of the Medical Faculty of Palacky University in Olomouc, Czech Republic* 160: 136-139.

Kudish K, Sleavin W, Hathcock L (2007) Lyme disease trends: Delaware, 2000 - 2004. *Delaware Medical Journal* 79: 51-58.

Kugeler KJ (2015) *Spatial analysis of human Lyme disease risk in an endemic county*. Colorado State University.

Kugeler KJ, Farley GM, Forrester JD, Mead PS (2015) Geographic Distribution and Expansion of Human Lyme Disease, United States. *Emerging Infectious Diseases* 21: 1455-1457.

Kurnatowski P, Warpechowska M, Kurnatowska AJ (2011) Knowledge on Lyme disease among foresters. *International Journal of Occupational Medicine and Environmental Health* 24: 78-93.

Laba A, Kalisz N, Olbromski K, Skalisz H (2015) The pilot studies for Lyme disease (Lyme Borreliosis) in blood donors in rckik in Poznan. *Vox Sanguinis* 109: 234.

Lahey LJ, Panas MW, Mao R, Delanoy M, Flanagan JJ, Binder SR, Rebman AW, Montoya JG, Soloski MJ, Steere AC, Dattwyler RJ, Arnaboldi PM, Aucott JN, Robinson WH (2015) Development of a Multiantigen Panel for Improved Detection of *Borrelia burgdorferi* Infection in Early Lyme Disease. *Journal of Clinical Microbiology* 53: 3834-3841.

Lake TM, Ruocco A, Mandel S, Swirsky-Sacchetti T (2008) Personality function in Chronic Lyme Disease. *Clinical Neuropsychologist* 22: 413-413.

Lakos A, Reiczigel J, Solymosi N (2010) The positive predictive value of *Borrelia burgdorferi* serology in the light of symptoms of patients sent to an outpatient service for tick-borne diseases. *Inflammation Research* 59: 959-964.

Lakos A, Solymosi N (2010) Maternal Lyme borreliosis and pregnancy outcome. *International Journal of Infectious Diseases* 14: e494-498.

Lakos A, Igari Z, Solymosi N (2012a) Recent lesson from a clinical and seroepidemiological survey: low positive predictive value of *Borrelia burgdorferi* antibody testing in a high risk population. *Advances in Medical Sciences* 57: 356-363.

Lakos A, Korosi A, Foldvari G (2012b) Contact with horses is a risk factor for tick-borne lymphadenopathy (TIBOLA): a case control study. *Wiener Klinische Wochenschrift* 124: 611-617.

Lane RS, Steinlein DB, Mun J (2004) Human behaviors elevating exposure to *Ixodes pacificus* (Acari: Ixodidae) nymphs and their associated bacterial zoonotic agents in a hardwood forest. *Journal of Medical Entomology* 41: 239-248.

Lantos PM, Brinkerhoff RJ, Wormser GP, Clemen R (2013) Empiric antibiotic treatment of erythema migrans-like skin lesions as a function of geography: a clinical and cost effectiveness modeling study. *Vector Borne and Zoonotic Diseases* 13: 877-883.

Lantos PM, Branda JA, Boggan JC, Chudgar SM, Wilson EA, Ruffin F, Fowler V, Auwaerter PG, Nigrovic LE (2015a) Poor Positive Predictive Value of Lyme Disease Serologic Testing in an Area of Low Disease Incidence. *Clinical Infectious Diseases* 61: 1374-1380.

Lantos PM, Nigrovic LE, Auwaerter PG, Fowler VG, Jr., Ruffin F, Brinkerhoff RJ, Reber J, Williams C, Broyhill J, Pan WK, Gaines DN (2015b) Geographic Expansion of Lyme Disease in the Southeastern United States, 2000-2014. *Open Forum Infectious Diseases* 2: 1-6.

Lantos PM, Lipsett SC, Nigrovic LE (2016) False Positive Lyme Disease IgM Immunoblots in Children. *Journal of Pediatrics* 174: 267-269.e261.

Larsen AE, MacDonald AJ, Plantinga AJ (2014) Lyme disease risk influences human settlement in the wildland-urban interface: evidence from a longitudinal analysis of counties in the northeastern United States. *American Journal of Tropical Medicine and Hygiene* 91: 747-755.

Lashley D, Darsh G, Auckland C, Gutowski N (2014) Neuroborreliosis in South West England. *Journal of Neurology, Neurosurgery & Psychiatry* 85 (10): A7.

Lathrop SL, Ball R, Haber P, Mootrey GT, Braun MM, Shadomy SV, Ellenberg SS, Chen RT, Hayes EB (2002) Adverse event reports following vaccination for Lyme disease: December 1998-July 2000. *Vaccine* 20: 1603-1608.

Latov N, Wu AT, Chin RL, Sander HW, Alaedini A, Brannagan TH, III (2004) Neuropathy and cognitive impairment following vaccination with the OspA protein of *Borrelia burgdorferi*. *Journal of the Peripheral Nervous System* 9: 165-167.

Lawrence J, Jones J (2007) *Foreign travel associated illness, England, Wales and Northern Ireland: 2007 report*. London: Health Protection Agency.
http://webarchive.nationalarchives.gov.uk/20140714084352/http://www.hpa.org.uk/webc/HPAwebFile/HPAweb_C/1204186182561

Lawrence M, Quilliam DN, Bandy U, Fulton JP, Marak TP, Berns A (2014) Rhode Island tick-borne disease surveillance summary 2012-2013. *Rhode Island Medicine* 97: 46-49.

Ledue TB, Collins MF, Young J, Schriefer ME (2008) Evaluation of the recombinant VlsE-based liaison chemiluminescence immunoassay for detection of *Borrelia burgdorferi* and diagnosis of Lyme disease. *Clinical and Vaccine Immunology* 15: 1796-1804.

Lee SH, Vigliotti VS, Vigliotti JS, Jones W, Williams J, Walshon J (2010) Early Lyme disease with spirochetemia - diagnosed by DNA sequencing. *BMC Research Notes* 3: 273.

Lee SH, Vigliotti JS, Vigliotti VS, Jones W, Shearer DM (2014) Detection of borreliae in archived sera from patients with clinically suspect Lyme disease. *International Journal of Molecular Sciences* 15: 4284-4298.

Leeflang MM, Ang CW, Berkhout J, Bijlmer HA, Van Bortel W, Brandenburg AH, Van Burgel ND, Van Dam AP, Dessau RB, Fingerle V, Hovius JW, Jaulhac B, Meijer B, Van Pelt W, Schellekens JF, Spijker R, Stelma FF, Stanek G, Verduyn-Lunel F, Zeller H, Sprong H (2016) The diagnostic accuracy of serological tests for Lyme borreliosis in Europe: a systematic review and meta-analysis. *BMC Infectious Diseases* 16: 140.

Lencakova D, Stefancikova A, Ivanova R, Petko B (2007) Immune complexes in early Lyme disease. *Canadian Journal of Microbiology* 53: 1375-1377.

Lencakova D, Fingerle V, Stefancikova A, Schulte-Spechtel U, Petko B, Schreter I, Wilske B (2008) Evaluation of recombinant line immunoblot for detection of Lyme disease in Slovakia: comparison with two other immunoassays. *Vector Borne and Zoonotic Diseases* 8: 381-390.

Lerner AM, Beqaj S, Fitzgerald JT, Gill K, Gill C, Edington J (2010) Subset-directed antiviral treatment of 142 herpesvirus patients with chronic fatigue syndrome. *Virus Adaptation and Treatment*: 47-57.

Letrilliart L, Ragon B, Hanslik T, Flahault A (2005) Lyme disease in France: a primary care-based prospective study. *Epidemiology and Infection* 133: 935-942.

Levi T, Kilpatrick AM, Mangel M, Wilmers CC (2012) Deer, predators, and the emergence of Lyme disease. *Proceedings of the National Academy of Sciences of the United States of America* 109: 10942-10947.

Lewandowska A, Kruba Z, Filip R (2013) Epidemiology of Lyme disease among workers of forest inspectorates in Poland. *Annals of Agricultural and Environmental Medicine* 20: 329-331.

Li J, Kolivras KN, Hong Y, Duan Y, Seukep SE, Prisley SP, Campbell JB, Gaines DN (2014) Spatial and temporal emergence pattern of Lyme disease in Virginia. *American Journal of Tropical Medicine and Hygiene* 91: 1166-1172.

Li X, McHugh GA, Damle N, Sikand VK, Glickstein L, Steere AC (2011) Burden and viability of *Borrelia burgdorferi* in skin and joints of patients with erythema migrans or Lyme arthritis. *Arthritis and Rheumatism* 63: 2238-2247.

Linard C, Lamarque P, Heyman P, Ducoffre G, Luyasu V, Tersago K, Vanwambeke SO, Lambin EF (2007) Determinants of the geographic distribution of Puumala virus and Lyme borreliosis infections in Belgium. *International Journal of Health Geographics* 6: 15.

Lindblom A, Wallmenius K, Nordberg M, Forsberg P, Eliasson I, Pahlson C, Nilsson K (2013) Seroreactivity for spotted fever rickettsiae and co-infections with other tick-borne agents among inhabitants in central and southern Sweden. *European Journal of Clinical Microbiology & Infectious Diseases* 32: 317-323.

Lindqvist EK, Goldin LR, Landgren O, Blimark C, Mellqvist UH, Turesson I, Wahlin A, Bjorkholm M, Kristinsson SY (2011) Personal and family history of immune-related conditions increase the risk of plasma cell disorders: A population-based study. *Blood* 118: 6284-6291.

Lipowsky C, Altwegg M, Michel BA, Bruhlmann P (2003) Detection of *Borrelia burgdorferi* by species-specific and broad-range PCR of synovial fluid and synovial tissue of Lyme arthritis patients before and after antibiotic treatment. *Clinical and Experimental Rheumatology* 21: 271-272.

Lipsett SC, Pollock NR, Branda JA, Gordon CD, Gordon CR, Lantos PM, Nigrovic LE (2015) The Positive Predictive Value of Lyme Elisa for the Diagnosis of Lyme Disease in Children. *Pediatric Infectious Disease Journal* 34: 1260-1262.

Lipsett SC, Branda JA, McAdam AJ, Vernacchio L, Gordon CD, Gordon CR, Nigrovic LE (2016) Evaluation of the C6 Lyme Enzyme Immunoassay for the Diagnosis of Lyme Disease in Children and Adolescents. *Clinical Infectious Diseases* 28: 28.

Lipsker D, Antoni-Bach N, Hansmann Y, Jaulhac B (2002) Long-term prognosis of patients treated for erythema migrans in France. *British Journal of Dermatology* 146: 872-876.

Lipsker D, Lieber-Mbomeyo A, Hedelin G (2004) How accurate is a clinical diagnosis of erythema chronicum migrans? Prospective study comparing the diagnostic accuracy of general practitioners and dermatologists in an area where Lyme borreliosis is endemic. *Archives of Dermatology* 140: 620-621.

Lisa I, Durovska J, Pancak J, Timarova G, Lisy L (2016) Borreliosis and associated autoimmunity. *European Journal of Neurology* 23: 702.

Liu W, Liu H-X, Zhang L, Hou X-X, Wan K-L, Hao Q (2016a) A novel isothermal assay of *Borrelia burgdorferi* by recombinase polymerase amplification with lateral flow detection. *International Journal of Molecular Sciences* 17: 1250.

Liu W, Liu HX, Zhang L, Hou XX, Wan KL, Hao Q (2016b) Evaluation of Six Recombinant Proteins for Serological Diagnosis of Lyme Borreliosis in China. *Biomedical and Environmental Sciences* 29: 323-330.

Liu Z-Y, Hou X-X, Huo Q, Geng Z, Liu J, Wan K, Hao Q (2011) Serologic diagnosis of Lyme disease with indirect immunofluorescence assay, enzyme-linked immunosorbent assay and western blot. *Zhongguo Meijie Shengwuxue ji Kongzhi Zazhi* 22: 236-238.

Liu ZY, Hao Q, Hou XX, Jiang Y, Geng Z, Wu YM, Wan KL (2013) A study of the technique of western blot for diagnosis of Lyme disease caused by *Borrelia afzelii* in China. *Biomedical and Environmental Sciences* 26: 190-200.

Liveris D, Wang G, Girao G, Byrne DW, Nowakowski J, McKenna D, Nadelman R, Wormser GP, Schwartz I (2002) Quantitative detection of *Borrelia burgdorferi* in 2-millimeter skin samples of erythema migrans lesions: correlation of results with clinical and laboratory findings. *Journal of Clinical Microbiology* 40: 1249-1253.

Liveris D, Schwartz I, McKenna D, Nowakowski J, Nadelman R, Demarco J, Iyer R, Bittker S, Cooper D, Holmgren D, Wormser GP (2012) Comparison of five diagnostic modalities for direct detection of *Borrelia burgdorferi* in patients with early Lyme disease. *Diagnostic Microbiology and Infectious Disease* 73: 243-245.

Ljostad U, Okstad S, Topstad T, Mygland A, Monstad P (2005) Acute peripheral facial palsy in adults. *Journal of Neurology* 252: 672-676.

Ljostad U, Mygland A (2007) Diagnostic accuracy of CSFB-lymphocyte chemoattractant in Lyme neuroborreliosis. *Neurology* 68: A138-A138.

Ljostad U, Skarpaas T, Mygland A (2007) Clinical usefulness of intrathecal antibody testing in acute Lyme neuroborreliosis. *European Journal of Neurology* 14: 873-876.

Ljostad U, Eikeland R, Midgard R, Skogvoll E, Skarpass T, Berg A (2008a) Oral doxycycline vs. IV ceftriaxone for European Lyme neuro-borreliosis. A double-blind, randomized controlled clinical trial. *European Journal of Neurology* 15: 338-389.

Ljostad U, Mygland A (2008) CSF B-lymphocyte chemoattractant (CXCL13) in the early diagnosis of acute Lyme neuroborreliosis. [Erratum appears in J Neurol. 2008 May;255(5):782]. *Journal of Neurology* 255: 732-737.

Ljostad U, Skogvoll E, Eikeland R, Midgard R, Skarpaas T, Berg A, Mygland A (2008b) Oral doxycycline versus intravenous ceftriaxone for European Lyme neuroborreliosis: a multicentre, non-inferiority, double-blind, randomised trial. [Erratum appears in Lancet Neurol. 2008 Aug;7(8):675]. *The Lancet Neurology* 7: 690-695.

Ljostad U, Mygland A (2010) Remaining complaints 1 year after treatment for acute Lyme neuroborreliosis; frequency, pattern and risk factors. *European Journal of Neurology* 17: 118-123.

Ljøstad U, Mygland Å (2012) The Phenomenon of "Chronic Lyme"; an Observational Study. *European Journal of Neurology*: 1128-1135.

Lledo L, Gegundez MI, Saz JV, Beltran M (2004) Screening of the prevalence of antibodies to *Borrelia burgdorferi* in Madrid province, Spain. *European Journal of Epidemiology* 19: 471-472.

Lledo L, Gegundez MI, Gimenez-Pardo C, Alamo R, Fernandez-Soto P, Nuncio MS, Saz JV (2014) A seventeen-year epidemiological surveillance study of *Borrelia burgdorferi* infections in two provinces of northern Spain. *International Journal of Environmental Research & Public Health* 11: 1661-1672.

Lobraico J, Butler A, Petrini J, Ahmadi R (2014) New insights into stages of lyme disease symptoms from a novel hospital-based registry. *Journal of Primary Care & Community Health* 5: 284-287.

Logar M, Ruzic-Sabljić E, Maraspin V, Lotric-Furlan S, Cimperman J, Jurca T, Strle F (2004) Comparison of erythema migrans caused by *Borrelia afzelii* and *Borrelia garinii*. *Infection* 32: 15-19.

Logina I, Krumina A, Karelis G, Elson L, Viksna L, Rozentale B, Donaghy M (2005) Double infection with encephalitis and Lyme borreliosis transmitted by tick bite. *Journal of Neurology* 252: 35-35.

Logina I, Krumina A, Karelis G, Elson L, Viksna L, Rozentale B, Donaghy M (2006) Clinical features of double infection with tick-borne encephalitis and Lyme borreliosis transmitted by tick bite. *Journal of Neurology, Neurosurgery & Psychiatry* 77: 1350-1353.

Lohr B, Muller I, Mai M, Norris DE, Schöffski O, Hunfeld KP (2015) Epidemiology and cost of hospital care for Lyme borreliosis in Germany: lessons from a health care utilization database analysis. *Ticks and Tick-Borne Diseases* 6: 56-62.

Lopes de Carvalho I, Nuncio MS (2006) Laboratory diagnosis of Lyme borreliosis at the Portuguese National Institute of Health (1990-2004). *Euro Surveillance* 11: 257-260.

Lorenzi MC, Bittar RS, Pedalini ME, Zerati F, Yoshinari NH, Bento RF (2003) Sudden deafness and Lyme disease. *Laryngoscope* 113: 312-315.

Losevicha M, Kuznetsov V (2012) "Two great masqueraders" in a psychiatry clinic-case series of neurosyphilis and neuroborreliosis. *European Psychiatry* 27: 1.

Lotric-Furlan S, Strle F (2012) Peripheral facial palsy in patients with tick-borne encephalitis. *Clinical Microbiology and Infection* 18: 1027-1032.

Lovett JK, Evans PH, Gutowski NJ (2006) Neuroborreliosis in the South West of England. *Journal of Neurology, Neurosurgery & Psychiatry* 77: 1390-1390.

Lovett JK, Evans PH, O'Connell S, Gutowski NJ (2008) Neuroborreliosis in the South West of England. *Epidemiology and Infection* 136: 1707-1711.

Lucenko I, Arsa F, Bormane A, Perevoscikovs J, Rohlina L, Storozenko J, Trofimova J, Rozentale B, Viksna L, Brigis G, Krumina A (2012) Lyme borreliosis and tick-borne encephalitis in Latvia: A comparative study of cases reported in 2007-2010. *Clinical Microbiology and Infection* 18: 837.

Lukacik G, White J, Noonan-Toly C, DiDonato C, Backenson PB (2016) Lyme Disease Surveillance Using Sampling Estimation: Evaluation of an Alternative Methodology in New York State. *Zoonoses and Public Health* 29: 29.

Lupse M, Briciu V, Flonta M, Nastase V, Todor N, Kullberg BJ (2014) Serological and clinical one year follow-up of patients with erythema migrans treated in a Romanian infectious disease hospital. *Romanian Review of Laboratory Medicine* 22: 221-231.

Macauda Mark M (2007) *Understanding Lyme disease: Illness experience, prevention, and the health belief model*. University of Connecticut.

Macauda MM, Erickson P, Miller J, Mann P, Closter L, Krause PJ (2011) Long-term Lyme disease antibiotic therapy beliefs among New England residents. *Vector Borne and Zoonotic Diseases* 11: 857-862.

MacDonald E, Vestrheim DF, White RA, Konsmo K, Lange H, Aase A, Nygård K, Stefanoff P, Aaberge I, Vold L (2016) Are the current notification criteria for Lyme borreliosis in Norway suitable? Results of an evaluation of Lyme borreliosis surveillance in Norway, 1995-2013. *BMC Public Health* 16: (5 August 2016).

Machcinska M, Noworyta J, Brasse-Rumin M, Gago J, Zabek J (2013) Prevalence of *Yersinia* spp., *Chlamydia trachomatis*, *Chlamydia pneumoniae* and *Borrelia burgdorferi* antibodies in healthy blood donors' sera. *Reumatologia* 51: 422-428.

Mackensen F, Zimmermann S, Alle W, Max R, Jakob E, Becker MD, Thiemeyer D (2011) Difficulties of interpreting *Borrelia* serology in patients with uveitis. *Ocular Immunology and Inflammation* 19: 227-231.

Maczka I, Chmielewski T, Walczak E, Rozanski J, Religa G, Tylewska-Wierzbanowska S (2011) Tick-borne infections as a cause of heart transplantation. *Polish Journal of Microbiology* 60: 341-343.

Maggi RG, Mozayeni BR, Pultorak EL, Hegarty BC, Bradley JM, Correa M, Breitschwerdt EB (2012) *Bartonella* spp. bacteremia and rheumatic symptoms in patients from Lyme disease-endemic region. *Emerging Infectious Diseases* 18: 783-791.

Magnarelli LA, Lawrenz M, Norris SJ, Fikrig E (2002) Comparative reactivity of human sera to recombinant VlsE and other *Borrelia burgdorferi* antigens in class-specific enzyme-linked immunosorbent assays for Lyme borreliosis. *Journal of Medical Microbiology* 51: 649-655.

Magnaval JF, Tolou H, Gibert M, Innokentiev V, Laborde M, Melnichuk O, Grandadam M, Crubezy E, Alekseev A (2011) Seroepidemiology of nine zoonoses in Viljujsk, Republic of Sakha (Northeastern Siberia, Russian Federation). *Vector Borne and Zoonotic Diseases* 11: 157-160.

Magnaval JF, Leparac-Goffart I, Gibert M, Gurieva A, Outreville J, Dyachkovskaya P, Fabre R, Fedorova S, Nikolaeva D, Dubois D, Melnitchuk O, Daviaud-Fabre P, Marty M, Alekseev A, Crubezy E (2016) A Serological Survey About Zoonoses in the Verkhoyansk Area, Northeastern Siberia (Sakha Republic, Russian Federation). *Vector Borne and Zoonotic Diseases* 16: 103-109.

Magni R, Espina BH, Shah K, Lepene B, Mayuga C, Douglas TA, Espina V, Rucker S, Dunlap R, Petricoin EF, Kilavos MF, Poretz DM, Irwin GR, Shor SM, Liotta LA, Luchini A (2015) Application of Nanotrap technology for high sensitivity measurement of urinary outer surface protein A carboxyl-terminus domain in early stage Lyme borreliosis. *Journal of Translational Medicine* 13: 346.

Magri JM, Johnson MT, Herring TA, Greenblatt JF (2002) Lyme disease knowledge, beliefs, and practices of New Hampshire primary care physicians. *Journal of the American Board of Family Practice* 15: 277-284.

Maher NE, Akerblom JL, Karlson JE, Maher CP, Cantor FL, Soliva S, Shadick NA (2004) A Lyme disease education program changes knowledge, attitudes and behaviors in elementary school children living in an endemic area. *Arthritis and Rheumatism* 50: S77-S77.

Malouin R, Winch P, Leontsini E, Glass G, Simon D, Hayes EB, Schwartz BS (2003) Longitudinal evaluation of an educational intervention for preventing tick bites in an area with endemic Lyme disease in Baltimore County, Maryland. *American Journal of Epidemiology* 157: 1039-1051.

Mannion TA (2015) *Pediatric Lyme Disease Prevention*. University of Massachusetts.

Mappa S, Govi S, Pasini E, Ferreri AJ, Ponzoni M, Facchetti F, Doglioni C, Berti E, Dolcetti R (2011) Prevalence of chlamydia psittaci and borrelia burgdorferi infections in a series of 108 primary cutaneous lymphomas. *Annals of Oncology* 22: 183-183.

Marangoni A, Sparacino M, Cavrini F, Storni E, Mondardini V, Sambri V, Cevenini R (2005a) Comparative evaluation of three different ELISA methods for the diagnosis of early culture-confirmed Lyme disease in Italy. *Journal of Medical Microbiology* 54: 361-367.

Marangoni A, Sparacino M, Mondardini V, Cavrini F, Storni E, Donati M, Cevenini R, Sambri V (2005b) Comparative evaluation of two enzyme linked immunosorbent assay methods and three Western Blot methods for the diagnosis of culture-confirmed early Lyme borreliosis in Italy. *New Microbiologica* 28: 37-43.

Marangoni A, Sambri V, Accardo S, Cavrini F, Mondardini V, Moroni A, Storni E, Cevenini R (2006) A decrease in the immunoglobulin G antibody response against the VlsE protein of Borrelia burgdorferi sensu lato correlates with the resolution of clinical signs in antibiotic-treated patients with early Lyme disease. *Clinical and Vaccine Immunology* 13: 525-529.

Marangoni A, Moroni A, Mondardini V, Accardo S, Cevenini R (2007) Comparison between Enzygnost((R)) Lyme link VlsE/IgG and LIAISON((R)) Borrelia IgG for the laboratory diagnosis of Lyme disease. *International Journal of Antimicrobial Agents* 29: S419-S420.

Marangoni A, Moroni A, Accardo S, Cevenini R (2008) Borrelia burgdorferi VlsE antigen for the serological diagnosis of Lyme borreliosis. *European Journal of Clinical Microbiology & Infectious Diseases* 27: 349-354.

Maraspin V, Cimperman J, Lotric-Furlan S, Ruzic-Sabljić E, Jurca T, Picken RN, Strle F (2002a) Solitary borrelial lymphocytoma in adult patients. *Wiener Klinische Wochenschrift* 114: 515-523.

Maraspin V, Lotric-Furlan S, Strle F (2002b) Development of erythema migrans in spite of treatment with antibiotics after a tick bite. *Wiener Klinische Wochenschrift* 114: 616-619.

Maraspin V, Cimperman J, Lotric F, Ruzic S, Strle F (2011a) Course and outcome of Erythema migrans in patients with underlying rheumatological disease. *Clinical Microbiology and Infection* 17: S819.

Maraspin V, Ogrinc K, Ruzic-Sabljić E, Lotric-Furlan S, Strle F (2011b) Isolation of *Borrelia burgdorferi sensu lato* from blood of adult patients with borrelial lymphocytoma, Lyme neuroborreliosis, Lyme arthritis and acrodermatitis chronica atrophicans. *Infection* 39: 35-40.

Maraspin V, Ruzic-Sabljić E, Pleterški-Rigler D, Strle F (2011c) Pregnant women with erythema migrans and isolation of borreliae from blood: course and outcome after treatment with ceftriaxone. *Diagnostic Microbiology and Infectious Disease* 71: 446-448.

Maraspin V, Ruzic-Sabljić E, Lusa L, Strle F (2015) Course and outcome of Early Lyme borreliosis in patients with hematological malignancies. *Clinical Infectious Diseases* 61: 427-431.

Maraspin V, Nahtigal Klevisar M, Ruzic-Sabljić E, Lusa L, Strle F (2016) Borrelial Lymphocytoma in Adult Patients. *Clinical Infectious Diseases* 21: 21.

Marcu A, Uzzell D, Barnett J (2011) Making sense of unfamiliar risks in the countryside: the case of Lyme disease. *Health & Place* 17: 843-850.

Marcu A, Barnett J, Uzzell D, Vasileiou K, O'Connell S (2013) Experience of Lyme disease and preferences for precautions: a cross-sectional survey of UK patients. *BMC Public Health* 13: 481.

Mariet AS, Retel O, Avocat H, Serre A, Schapman L, Schmitt M, Charron M, Monnet E (2013) Estimated incidence of erythema migrans in five regions of France and ecological correlations with environmental characteristics. *Vector Borne and Zoonotic Diseases* 13: 666-673.

Markowicz M, Kivaranovic D, Stanek G (2015) Testing patients with non-specific symptoms for antibodies against *Borrelia burgdorferi sensu lato* does not provide useful clinical information about their aetiology. *Clinical Microbiology and Infection* 21: 1098-1103.

Marks DH (2011) Neurological complications of vaccination with outer surface protein A (OspA). *International Journal of Risk & Safety in Medicine* 23: 89-96.

Marquard R, Kurz A, Bremer D, Dose M (2011) *Borrelia burgdorferi*: Risk factor in Alzheimer's disease: RISK FACTOR IN ALZHEIMER'S DISEASE. *European Journal of Neurology* 18: 345-345.

Marquard RPW, Kurz A (2012) *Borrelia Burgdorferi*: risk factor in Alzheimer's disease. *European Journal of Neurology* 19: 100-100.

Marques A, Telford SR, III, Turk SP, Chung E, Williams C, Dardick K, Krause PJ, Brandenburg C, Crowder CD, Carolan HE, Eshoo MW, Shaw PA, Hu LT (2014) Xenodiagnosis to detect *Borrelia burgdorferi* infection: a first-in-human study. *Clinical Infectious Diseases* 58: 937-945.

Marques AR, Martin DS, Philipp MT (2002) Evaluation of the C6 peptide enzyme-linked immunosorbent assay for individuals vaccinated with the recombinant OspA vaccine. *Journal of Clinical Microbiology* 40: 2591-2593.

Marshall S, Hayes E, Dennis D (2002a) Lyme disease - United States, 2000. *Archives of Dermatology* 138: 555-556.

Marshall S, Hayes E, Dennis D (2002b) Lyme disease - United States, 2000. *Morbidity and Mortality Weekly Report* 51: 29-31.

Marzano M, Moseley D, Quine CP, Barnett J (2013) Organisational intentions and responses: presenting the risk of Lyme disease to countryside users. *Journal of Environmental Planning and Management* 56: 305-328.

Matta NS, Singman EL, McCarus C (2006) Lyme disease and convergence insufficiency: is it a near fit? *American Orthoptic Journal* 56: 147-150.

Matthys C, Petrens E, Padalko E, Lagrou K, Van Renterghem L (2007) Evaluation of five commercial screening assays and two commercial immunoblots for the serological diagnosis of Lyme borreliosis. *International Journal of Antimicrobial Agents* 29: S126-S126.

Mavin S, Milner RM, Evans R, Chatterton JM, Joss AW, Ho-Yen DO (2007) The use of local isolates in Western blots improves serological diagnosis of Lyme disease in Scotland. *Journal of Medical Microbiology* 56: 47-51.

Mavin S, Evans R, Milner RM, Chatterton JM, Ho-Yen DO (2009a) Local *Borrelia burgdorferi* sensu stricto and *Borrelia afzelii* strains in a single mixed antigen improves western blot sensitivity. *Journal of Clinical Pathology* 62: 552-554.

Mavin S, Hopkins PC, MacLennan A, Joss AW, Ho-Yen DO (2009b) Urban and rural risks of Lyme disease in the Scottish Highlands. *Scottish Medical Journal* 54: 24-26.

Mavin S, Watson EJ, Evans R (2014) Laboratory diagnosis of Lyme borreliosis in Scottish patients: a novel approach. *British Journal of Biomedical Science* 71: 51-54.

Mavin S, Watson EJ, Evans R (2015) Distribution and presentation of Lyme borreliosis in Scotland - analysis of data from a national testing laboratory. *Journal of the Royal College of Physicians of Edinburgh* 45: 196-200.

Mayne PJ (2011) Emerging incidence of Lyme borreliosis, babesiosis, bartonellosis, and granulocytic ehrlichiosis in Australia. *International journal of general medicine* 4: 845-852.

Mayne PJ (2015) Clinical determinants of Lyme borreliosis, babesiosis, bartonellosis, anaplasmosis, and ehrlichiosis in an Australian cohort. *International journal of general medicine* 8: 15-26.

Mazer NA, Rubinstein A (2012) IgM deficiency: A retrospective chart review of clinical and immunologic features. *Journal of Allergy and Clinical Immunology* 129: AB156.

McAuliffe P (2007) Memory and executive functions in adolescents with Lyme disease. *Dissertation Abstracts International: Section B: The Sciences and Engineering* 67: 6089.

McAuliffe P, Brassard MR, Fallon B (2008) Memory and executive functions in adolescents with posttreatment Lyme disease. *Applied Neuropsychology* 15: 208-219.

McCabe GJ, Bunnell JE (2004) Precipitation and the occurrence of Lyme disease in the northeastern United States. *Vector Borne and Zoonotic Diseases* 4: 143-148.

McGinnis J, Bohnker BK, Malakooti M, Mann M, Sack DM (2003) Lyme disease reporting for Navy and Marine Corps (1997-2000). *Military Medicine* 168: 1011-1014.

McKenna D, Faustini Y, Nowakowski J, Wormser GP (2004) Factors influencing the utilization of Lyme disease-prevention behaviors in a high-risk population. *Journal of the American Academy of Nurse Practitioners* 16: 24-30.

Mehnert WH, Krause G (2005) Surveillance of Lyme borreliosis in Germany, 2002 and 2003. *Euro Surveillance* 10: 83-85.

Meloska IHP, Jankijevic AHP (2014) Project management of Lyme disease through monitoring of seroprevalence of anti-borrelia antibodies in Macedonian patients. In: Bacher U, Barkovic D, Dernoscheg KH, LamzaMaronic M, Matic B, Pap N, Runzheimer B (eds) *Interdisciplinary Management Research X*. vol. 10 Osijek: Josip Juraj Strossmayer Univ Osijek, pages 245-254.

Merljak Skocir L, Ruzic-Sabljić E, Maraspin-Carman V, Lotric-Furlan S, Logar M, Strle F (2008) Comparison of different *Borrelia burgdorferi sensu lato* strains for detection of immune response in patients with erythema migrans. *International Journal of Medical Microbiology* 298: 493-504.

Messier KP, Jackson LE, White JL, Hilborn ED (2015) Landscape risk factors for Lyme disease in the eastern broadleaf forest province of the Hudson River valley and the effect of explanatory data classification resolution. *Spatial and Spatio-Temporal Epidemiology* 12: 9-17.

Meyer W, Janssen A, Scheper T, Schlumberger W, Stocker W (2008) Lyme borreliosis: Prevalence of antibodies against non-proteinic (lipid) antigens. *International Journal of Medical Microbiology* 298: 39-39.

Meyer W, Scheper T, Ott A, Kuehn B, Falke S, Persson R, Steinhagen K, Eichhorst D, Schlumberger W, Stoecker W (2011) Neuroborreliosis: Detection of intrathecally produced antibodies against Borrelia in cerebrospinal fluid using the line blot immunoassay Anti-Borrelia Euroline-RN-AT. *Clinical Microbiology and Infection* 17: S398-S399.

Michel H, Wilske B, Hettche G, Göttner G, Heimerl C, Reischl U, Schulte-Spechtel U, Fingerle V (2004) An ospA-polymerase chain reaction/restriction fragment length polymorphism-based method for sensitive detection and reliable differentiation of all European Borrelia burgdorferi sensu lato species and OspA types. *Medical Microbiology and Immunology* 193: 219-226.

Middelveen MJ, Bandoski C, Burke J, Sapi E, Mayne PJ, Stricker RB (2014) Isolation and detection of borrelia burdorgferi from human vaginal and seminal secretions. *Journal of Investigative Medicine* 62: 280-281.

Middelveen MJ, Bandoski C, Burke J, Sapi E, Filush KR, Wang Y, Franco A, Mayne PJ, Stricker RB (2015) Exploring the association between Morgellons disease and Lyme disease: identification of Borrelia burgdorferi in Morgellons disease patients. *BMC Dermatology* 15: 1.

Middleton WK (2015) *Tick-borne diseases: Assessing the knowledge, attitudes, and behaviors of college students*. Southern Illinois University Carbondale.

Mihailescu P, Cretu C (2012) Correlation between indirect immunofluorescence and Western blot, serological techniques used for the diagnosis of Lyme disease. *Clinical Microbiology and Infection* 18: 592-593.

Mihailescu P, Predeteanu D, Craciunoiu A, Ceaus G, Istrate C, Cretu CM (2014) Diagnosis and management of human borreliosis in Romania. *Parasites & Vectors* 7.

Mikhaylova EA (2012) Incidence of Tick-Borne Encephalitis and Lyme Disease in Leningrad Oblast. *EpiNorth* 13: C65.

Mikolasek P, Homola L, Krbkova L, Pavelka J, Bartosova D (2010) Spectrum of clinical forms and seasonal distribution of Lyme borreliosis in children. *Clinical Microbiology and Infection* 16: S622.

Milewski MD, Cruz A, Jr., Miller CP (2011a) Differentiating Lyme arthritis from septic arthritis: Clues uncovered. *Journal of Musculoskeletal Medicine* 28: 161-161.

Milewski MD, Cruz AI, Jr., Miller CP, Peterson AT, Smith BG (2011b) Lyme arthritis in children presenting with joint effusions. *Journal of Bone & Joint Surgery* 93: 252-260.

Milewski MD, Cruz AI, Jr., Miller CP, Peterson AT, Smith BG (2011c) Lyme arthritis in children presenting with joint effusions. [Erratum appears in *J Bone Joint Surg Am.* 2011 Feb;93(3):e11]. *Journal of Bone & Joint Surgery - American Volume* 93: 252-260.

Miller JD, Bonafede MM (2014) Antibiotic treatment patterns associated with persons newly-diagnosed with Lyme disease in the United States. *Value in Health* 17 (3): A265.

Milner RM, Mavin S, Ho-Yen DO (2009) Lyme borreliosis in Scotland during two peak periods. *Journal of the Royal College of Physicians of Edinburgh* 39: 196-199.

Milovanović A, Milovanović J, Obrenović S, Milovanović A, Simonović P, Čemerikić D, Tačević Z, Petronić I, Grajić M, Kekuš D, Popević M (2011) Lyme neuroborreliosis. *Acta Veterinaria (Beograd)* 61: 89-98.

Mlynarczyk E, Kopala W, Morski J, Melnyk A (2014) The degree of damage in the peripheral facial nerve palsy in children depending on the cause: The role of Lyme neuroborreliosis. *Polish Annals of Medicine* 21: 31-35.

Mogilyansky E, Loa CC, Adelson ME, Mordechai E, Tilton RC (2004) Comparison of Western immunoblotting and the C6 Lyme antibody test for laboratory detection of Lyme disease. *Clinical and Diagnostic Laboratory Immunology* 11: 924-929.

Molins CR, Sexton C, Young JW, Ashton LV, Pappert R, Beard CB, Schriefer ME (2014) Collection and characterization of samples for establishment of a serum repository for Lyme disease diagnostic test development and evaluation. *Journal of Clinical Microbiology* 52: 3755-3762.

Molins CR, Ashton LV, Wormser GP, Hess AM, Delorey MJ, Mahapatra S, Schriefer ME, Belisle JT (2015) Development of a metabolic biosignature for detection of early Lyme disease. *Clinical Infectious Diseases* 60: 1767-1775.

Monaghan AJ, Moore SM, Sampson KM, Beard CB, Eisen RJ (2015) Climate change influences on the annual onset of Lyme disease in the United States. *Ticks and Tick-Borne Diseases* 6: 615-622.

Moniuszko-Malinowska A, Luczaj W, Jarocka-Karpowicz I, Pancewicz S, Zajkowska J, Andrisic L, Zarkovic N, Skrzydlewska E (2016) Lipid peroxidation in the pathogenesis of neuroborreliosis. *Free Radical Biology & Medicine* 96: 255-263.

Moniuszko A, Czupryna P, Bell-Sakyi L, Fazakerley J, Zajkowska J, Pancewicz S (2012a) Co-infection with *Borrelia burgdorferi* and tick-borne encephalitis virus in humans, ticks and tick cells - Analysis of clinical cases, literature and experimental possibilities. *Clinical Microbiology and Infection* 18: 146.

Moniuszko A, Gindzienska-Sieskiewicz E, Pancewicz SA, Czupryna P, Zajkowska J, Sierakowski S (2012b) Evaluation of skin thickness lesions in patients with Lyme disease measured by modified Rodnan total skin score. *Rheumatology International* 32: 3189-3191.

Moniuszko A, Dunaj J, Swiecicka I, Zambrowski G, Chmielewska-Badora J, Zukiewicz-Sobczak W, Zajkowska J, Czupryna P, Kondrusik M, Grygorczuk S, Swierzbinska R, Pancewicz S (2014a) Co-infections with *Borrelia* species, *Anaplasma phagocytophilum* and *Babesia* spp. in patients with tick-borne encephalitis. *European Journal of Clinical Microbiology & Infectious Diseases* 33: 1835-1841.

Moniuszko A, Popko J, Guszczyn T, Walinski T, Zukiewicz-Sobczak W, Pancewicz S (2014b) Lyme disease with effusion either in hip or knee in children from Podlaskie region treated in clinic in 2004-2010. *Przegląd Epidemiologiczny* 68: 425-428, 535.

Moniuszko A, Dunaj J, Zajkowska J, Czupryna P, Swierzbinska R, Guziejko K, Aleksiejczuk P, Barry G, Kondrusik M, Pancewicz S (2015) Comparison of detection of *Borrelia burgdorferi* DNA and anti-*Borrelia burgdorferi* antibodies in patients with erythema migrans in north-eastern Poland. *Postepy Dermatologii i Alergologii* 32: 11-14.

Montejano LB (2014) Assessing the incidence and treatment of post-treatment Lyme disease syndrome in an administrative claims database. *Value in Health* 17 (3): A267.

Moon S, Hong Y, Hwang KJ, Kim S, Eom J, Kwon D, Park JH, Youn SK, Sohn A (2015) Epidemiological features and clinical manifestations of Lyme borreliosis in Korea during the period 2005-2012. *Japanese Journal of Infectious Diseases* 68: 1-4.

Moore SM, Eisen RJ, Monaghan A, Mead P (2014) Meteorological influences on the seasonality of Lyme disease in the United States. *American Journal of Tropical Medicine and Hygiene* 90: 486-496.

Moreno C, Kutzner H, Palmedo G, Goerttler E, Carrasco L, Requena L (2003) Interstitial granulomatous dermatitis with histiocytic pseudorosettes: a new histopathologic pattern in cutaneous borreliosis. Detection of *Borrelia burgdorferi* DNA sequences by a highly sensitive PCR-ELISA. *Journal of the American Academy of Dermatology* 48: 376-384.

Moritz E, Stramer SL (2014) Risk factors identified in blood donors screening positive or inconclusive for babesia microti. *Transfusion* 54: 207A-208A.

Morlando S, Schmidt SJ, LoGiudice K (2012) Reduction in Lyme disease risk as an economic benefit of habitat restoration. *Restoration Ecology* 20: 498-504.

Mosayebi G, Khakei M, Ghazavi A, Ghasami K, Rafei M (2009) *Borrelia burgdorferi* infection in Iranian patients with multiple sclerosis. *European Journal of Immunology* 39: S452.

Mowbray F, Amlot R, Rubin GJ (2012) Ticking All the Boxes? A Systematic Review of Education and Communication Interventions to Prevent Tick-Borne Disease. *Vector-Borne and Zoonotic Diseases* 12: 817-825.

Mowbray F, Amlot R, Rubin GJ (2014) Predictors of protective behaviour against ticks in the UK: a mixed methods study. *Ticks and Tick-Borne Diseases* 5: 392-400.

Mravljak M, Velnar T, Bricelj V, Ruzic-Sabljić E, Arnez M (2006) Electrocardiographic findings in children with erythema migrans. *Wiener Klinische Wochenschrift* 118: 691-695.

Muehlenbachs A, Bollweg BC, Schulz TJ, Forrester JD, DeLeon C, Molins C, Ray GS, Cummings PM, Ritter JM, Blau DM, Andrew TA, Prial M, Ng DL, Prahlow JA, Sanders JH, Shieh WJ, Paddock CD, Schriefer ME, Mead P, Zaki SR (2016) Cardiac Tropism of *Borrelia burgdorferi*: An Autopsy Study of Sudden Cardiac Death Associated with Lyme Carditis. *American Journal of Pathology* 186: 1195-1205.

Mulic R, Ropac BD, Zoric I, Bradaric N (2002) Epidemiologic and ecologic characteristics of some diseases transmitted by arthropods on the littoral of the Republic of Croatia. *Military Medicine* 167: 321-325.

Mulic R, Antonijevec S, Klismanic Z, Ropac D, Lucev O (2006) Epidemiological characteristics and clinical manifestations of Lyme borreliosis in Croatia. *Military Medicine* 171: 1105-1109.

Muller G, Cherasse A, Bour JB, Tavernier C, Maillefert JF (2003) Diagnostic usefulness of routine Lyme serology in patients with early inflammatory arthritis in nonendemic areas. *Joint Bone Spine* 70: 119-121.

Muller I, Hunfeld KP, Brade V (2006) Quality of Lyme disease serology. Insights and trends from the German proficiency testing program 2000-2005. *International Journal of Medical Microbiology* 296: 151-151.

Müller I, Freitag MH, Poggensee G, Scharnetzky E, Straube E, Schoerner C, Hlobil H, Hagedorn HJ, Stanek G, Schubert-Unkmeir A, Norris DE, Gensichen J, Hunfeld KP (2012) Evaluating Frequency, Diagnostic Quality, and Cost of Lyme Borreliosis Testing in Germany: A Retrospective Model Analysis. *Clinical and Developmental Immunology* 2012: 1-13.

Munksgaard L, Obitz ER, Goodlad JR, Davidson MM, Ho-Yen DO, Hamilton-Dutoit S, Hjalgrim H (2004) Demonstration of *B. burgdorferi*-DNA in two cases of nodal lymphoma. *Leukemia & Lymphoma* 45: 1721-1723.

Munro H, Dow B, Mavin S, Ho-Yen D (2011) Prevalence of Lyme borreliosis in Scottish blood donors. *Transfusion Medicine* 21: 28.

Münstedt K, Thienel J (2012) Beekeepers in central Europe are at high risk for contracting Lyme borreliosis. *Journal of Apicultural Research* 51: 291-297.

Mygland A, Skarpaas T, Ljostad U (2006) Chronic polyneuropathy and Lyme disease. *European Journal of Neurology* 13: 1213-1215.

Nagel T, Gajovic-Eichelmann N, Tobisch S, Schulte-Spechtel U, Bier FF (2008) Serodiagnosis of Lyme borreliosis infection using surface plasmon resonance. *Clinica Chimica Acta* 394: 110-113.

Nahimana I, Gern L, Blanc DS, Praz G, Francioli P, Peter O (2004) Risk of *Borrelia burgdorferi* infection in western Switzerland following a tick bite. *European Journal of Clinical Microbiology & Infectious Diseases* 23: 603-608.

Naleway AL, Belongia EA, Kazmierczak JJ, Greenlee RT, Davis JP (2002) Lyme disease incidence in Wisconsin: a comparison of state-reported rates and rates from a population-based cohort. *American Journal of Epidemiology* 155: 1120-1127.

Neifer S, Wankmuller O (2012) Performance evaluation of the new VIDAS Lyme IgM and IgG assays compared to the previous VIDAS Lyme total antibodies assay on fresh prospective sera. *Clinical Microbiology and Infection* 18: 592.

Nelson CA, Saha S, Kugeler KJ, Delorey MJ, Shankar MB, Hinckley AF, Mead PS (2015) Incidence of Clinician-Diagnosed Lyme Disease, United States, 2005-2010. *Emerging Infectious Diseases* 21: 1625-1631.

Nelson CA, Starr JA, Kugeler KJ, Mead PS (2016) Lyme Disease in Hispanics, United States, 2000-2013. *Emerging Infectious Diseases* 22: 522-525.

Newberg A, Hassan A, Alavi A (2002) Cerebral metabolic changes associated with Lyme disease. *Nuclear Medicine Communications* 23: 773-777.

Newton C (2017) Fight Lyme Now Survey. Fight Lyme Now.

Ni XB, Jia N, Jiang BG, Sun T, Zheng YC, Huo QB, Liu K, Ma L, Zhao QM, Yang H, Wang X, Jiang JF, Cao WC (2014) Lyme borreliosis caused by diverse genospecies of *Borrelia burgdorferi* sensu lato in northeastern China. *Clinical Microbiology and Infection* 20: 808-814.

Nicolson GL, Nicolson NL, Haier J (2008) Chronic fatigue syndrome patients subsequently diagnosed with Lyme disease *Borrelia burgdorferi*: Evidence for mycoplasma species coinfections. *Journal of Chronic Fatigue Syndrome* 14: 5-17.

Niedzielski KR, Malecki K (2013) Analysis of the influence of Ascaris, Borrelia, Toxocara, Toxoplasma and Mycoplasma infections on the incidence and course of Perthes disease - pilot study. *Ortopedia Traumatologia Rehabilitacja* 15: 245-252.

Nielsen H, Fournier PE, Pedersen IS, Krarup H, Ejlertsen T, Raoult D (2004) Serological and molecular evidence of Rickettsia helvetica in Denmark. *Scandinavian Journal of Infectious Diseases* 36: 559-563.

Nigrovic LE, Thompson AD, Fine AM, Kimia A (2008) Clinical predictors of Lyme disease among children with a peripheral facial palsy at an emergency department in a Lyme disease-endemic area. *Pediatrics* 122: e1080-1085.

Nigrovic LE, Cohn KA, Lyons TW, Thompson AD, Hines EM, Welsh EJ, Shah SS (2013) Enteroviral testing and length of hospital stay for children evaluated for Lyme meningitis. *Journal of Emergency Medicine* 44: 1196-1200.

Niscigorska J, Skotarczak B, Wodecka B (2003) Borrelia burgdorferi infection among forestry workers - assessed with an immunoenzymatic method (ELISA), PCR and correlated with the clinical state of the patients. *Annals of Agricultural and Environmental Medicine* 10: 15-19.

Niścigorska J, Morańska I, Szych Z (2004) Serological markers of Borrelia burgdorferi infection among forestry workers in West Pomerania during a five-year period. *Advances in Agricultural Sciences* 9: 63-67.

Nizic T, Velikanje E, Ruzic-Sabljić E, Arnez M (2012) Solitary erythema migrans in children: comparison of treatment with clarithromycin and amoxicillin. *Wiener Klinische Wochenschrift* 124: 427-433.

Nolan K, Mauer MP (2006) An evaluation of a Lyme disease prevention program in a working population. *American Journal of Health Promotion* 20: 379-382.

Nordberg M, Forsberg P, Nyman D, Skogman BH, Nyberg C, Ernerudh J, Eliasson I, Ekerfelt C (2012) Can ELISPOT Be Applied to A Clinical Setting as A Diagnostic Utility for Neuroborreliosis? *Cells* 1: 153-167.

Nowakowski J, Nadelman RB, Sell R, McKenna D, Cavaliere LF, Holmgren D, Gaidici A, Wormser GP (2003) Long-term follow-up of patients with culture-confirmed Lyme disease. *American Journal of Medicine* 115: 91-96.

Nowakowski J, McKenna D, Nadelman RB, Bittker S, Cooper D, Pavia C, Holmgren D, Visintainer P, Wormser GP (2009) Blood cultures for patients with extracutaneous manifestations of Lyme disease in the United States. *Clinical Infectious Diseases* 49: 1733-1735.

Nubling M, Rieger MA, Batsford S, Wagner M, Wertenschlag E, Hofmann F (2002) Seroprevalence of infection with *Borrelia burgdorferi* s. l. in two adjacent regions of eastern France and southwestern Germany. *International Journal of Medical Microbiology* 291 Suppl 33: 218.

Nygard K, Brantsaeter AB, Mehl R (2005) Disseminated and chronic Lyme borreliosis in Norway, 1995 - 2004. *Euro Surveillance* 10: 235-238.

O'Brien L, Marcu A, Marzano M, Barnett J, Quine C, Uzzell D (2012) Situating risk in the context of a woodland visit: a case study on Lyme borreliosis. *Scottish Forestry* 66: 14-24.

O'Rourke M, Traweger A, Lusa L, Stupica D, Maraspin V, Barrett PN, Strle F, Livey I (2013) Quantitative detection of *Borrelia burgdorferi* sensu lato in erythema migrans skin lesions using internally controlled duplex real time PCR. *PLoS ONE* 8: e63968.

Oehme R, Hartelt K, Backe H, Brockmann S, Kimmig P (2002) Foci of tick-borne diseases in southwest Germany. *International Journal of Medical Microbiology* 291 Suppl 33: 22-29.

Ogden N, Barton M, Koffi J, Leonard E, Lindsay R, Langley J (2015a) Surveillance for childhood Lyme disease by the Canadian pediatric surveillance program (CPSP): Initial findings. *Paediatrics and Child Health* 20 (5): e78-e79.

Ogden NH, Koffi JK, Lindsay LR, Fleming S, Mombourquette DC, Sanford C, Badcock J, Gad RR, Jain-Sheehan N, Moore S, Russell C, Hobbs L, Baydack R, Graham-Derham S, Lachance L, Simmonds K, Scott AN (2015b) Surveillance for Lyme disease in Canada, 2009 to 2012. *Canada Communicable Disease Report* 41: 132-145.

Ogrinc K, Logar M, Lotric-Furlan S, Cerar D, Ruzic-Sabljic E, Strle F (2006) Doxycycline versus ceftriaxone for the treatment of patients with chronic Lyme borreliosis. *Wiener Klinische Wochenschrift* 118: 696-701.

Ogrinc K, Ruzic-Sabljic E, Strle F (2008) Clinical assessment of patients with suspected Lyme borreliosis. *International Journal of Medical Microbiology* 298: 356-360.

Ogrinc K, Lotric-Furlan S, Maraspin V, Lusa L, Cerar T, Ruzic-Sabljic E, Strle F (2013) Suspected early Lyme neuroborreliosis in patients with erythema migrans. *Clinical Infectious Diseases* 57: 501-509.

Ogrinc K, Lusa L, Lotric-Furlan S, Bogovic P, Stupica D, Cerar T, Ruzic-Sabljic E, Strle F (2016) Course and Outcome of Early European Lyme Neuroborreliosis (Bannwarth Syndrome): Clinical and Laboratory Findings. *Clinical Infectious Diseases* 63: 346-353.

Oksi J, Nikoskelainen J, Hiekkanen H, Lauhio A, Peltomaa M, Pitkaranta A, Nyman D, Granlund H, Carlsson SA, Seppala I, Valtonen V, Viljanen M (2007) Duration of antibiotic treatment in disseminated Lyme borreliosis: a double-blind, randomized, placebo-

controlled, multicenter clinical study. *European Journal of Clinical Microbiology & Infectious Diseases* 26: 571-581.

Olczak A, Grabczewska E (2010) Clinical aspects of neuroborreliosis in bydgoszcz, Poland. *International Journal of Infectious Diseases* 14: e392.

Ondrejko A, Spackova I, Svandova H, Chlebkova J, Ondrejka G (2015) Our experience with enzyme-linked immunospot assay in the laboratory diagnostics of Lyme borreliosis. *World Allergy Organization Journal* 8: A121.

Onen F, Tuncer D, Akar S, Birlik M, Akkoc N (2003) Seroprevalence of *Borrelia burgdorferi* in patients with Behcet's disease. *Rheumatology International* 23: 289-293.

Ornstein K, Berglund J, Bergstrom S, Norrby R, Barbour AG (2002) Three major Lyme *Borrelia* genospecies (*Borrelia burgdorferi* sensu stricto, *B. afzelii* and *B. garinii*) identified by PCR in cerebrospinal fluid from patients with neuroborreliosis in Sweden. *Scandinavian Journal of Infectious Diseases* 34: 341-346.

Oteo JA, Ibarra V, Blanco JR, Metola L, Vallejo M, De Artola VM (2003) Epidemiological and clinical differences among *Rickettsia slovaca* rickettsiosis and other tick-borne diseases in Spain. *Annals of the New York Academy of Sciences* 990: 355-356.

Ott A, Komorowski L, Probst C, Schlumberger W, Stoecker W, Scheper T, Meyer W (2011) Dimeric OspCadv - Advanced recombinant OspC antigens for the sensitive and specific detection of class IgM antibodies in early stages of *Borrelia* infections. *Clinical Microbiology and Infection* 17: S399.

Oymar K, Tveitnes D (2009) Clinical characteristics of childhood Lyme neuroborreliosis in an endemic area of northern Europe. *Scandinavian Journal of Infectious Diseases* 41: 88-94.

Ozdenerol E (2015) GIS and Remote Sensing Use in the Exploration of Lyme Disease Epidemiology. *International Journal of Environmental Research & Public Health* 12: 15182-15203.

Palecek T, Kuchynka P, Hulinska D, Schramlova J, Hrbackova H, Vitkova I, Simek S, Horak J, Louch WE, Linhart A (2010) Presence of *Borrelia burgdorferi* in endomyocardial biopsies in patients with new-onset unexplained dilated cardiomyopathy. *Medical Microbiology and Immunology* 199: 139-143.

Panczuk A, Koziol-Montewka M, Tokarska-Rodak M (2014) Exposure to ticks and seroprevalence of *Borrelia burgdorferi* among a healthy young population living in the area of southern Podlasie, Poland. *Annals of Agricultural and Environmental Medicine* 21: 512-517.

Panelius J, Lahdenne P, Saxen H, Carlsson SA, Heikkila T, Peltomaa M, Lauhio A, Seppala I (2003) Diagnosis of Lyme neuroborreliosis with antibodies to recombinant proteins DbpA, BBK32, and OspC, and VlsE IR6 peptide. *Journal of Neurology* 250: 1318-1327.

Panelius J, Meri T, Seppala I, Eholuoto M, Alitalo A, Meri S (2008) Outer surface protein E antibody response and its effect on complement factor H binding to OspE in Lyme borreliosis. *Microbes and Infection* 10: 135-142.

Paradowska-Stankiewicz I, Chrzescijanska I (2013) Lyme disease in Poland in 2011. *Przegląd Epidemiologiczny* 67: 255-257, 359.

Paradowska-Stankiewicz I, Chrzescijanska I (2014) Lyme disease in Poland in 2012. *Przegląd Epidemiologiczny* 68: 275-277, 375.

Paradowska-Stankiewicz I (2015) Lyme disease in Poland in 2013. *Przegląd Epidemiologiczny* 69: 763-764, 897.

Park SH, Hwang KJ, Chu H, Park MY (2011) Serological detection of Lyme borreliosis agents in patients from Korea, 2005-2009. *Osong Public Health and Research Perspectives* 2: 29-33.

Patrick DM, Miller RR, Gardy JL, Parker SM, Morshed MG, Steiner TS, Singer J, Shojania K, Tang P, for the Complex Chronic Disease Study G (2015) Lyme Disease Diagnosed by Alternative Methods: A Phenotype Similar to That of Chronic Fatigue Syndrome. *Clinical Infectious Diseases* 61: 1084-1091.

Patriquin G, LeBlanc J, Heinstein C, Roberts C, Lindsay R, Hatchette TF (2016) Cross-reactivity between Lyme and syphilis screening assays: Lyme disease does not cause false-positive syphilis screens. *Diagnostic Microbiology and Infectious Disease* 84: 184-186.

Pauluzzi P, Bonin S, Gonzalez I, M A, Stanta G, Trevisan G (2004) Detection of spirochaetal DNA simultaneously in skin biopsies, peripheral blood and urine from patients with erythema migrans. *Acta Dermato-Venereologica* 84: 106-110.

Peeters N, van der Kolk BY, Thijsen SF, Colnot DR (2013) Lyme disease associated with sudden sensorineural hearing loss: case report and literature review. *Otology & Neurotology* 34(5): 832-837.

Peltomaa M, Pyykko I, Seppala I, Viljanen M (2002) Lyme borreliosis and facial paralysis--a prospective analysis of risk factors and outcome. *American Journal of Otolaryngology* 23: 125-132.

Peltomaa M, McHugh G, Steere AC (2003) Persistence of the antibody response to the VlsE sixth invariant region (IR6) peptide of *Borrelia burgdorferi* after successful antibiotic treatment of Lyme disease. *Journal of Infectious Diseases* 187: 1178-1186.

Peltomaa M, McHugh G, Steere AC (2004) The VlsE (IR6) peptide ELISA in the serodiagnosis of Lyme facial paralysis. *Otology & Neurotology* 25: 838-841.

Pepin K, Eisen R, Mead P, Piesman J, Fish D, Diuk-Wasser M (2011) Linking acarological risk and Lyme disease incidence in the USA. *American Journal of Tropical Medicine and Hygiene* 85: 13.

Perea AE, Hinckley AF, Mead PS (2015) Tick Bite Prophylaxis: Results from a 2012 Survey of Healthcare Providers. *Zoonoses and Public Health* 62: 388-392.

Petersen BB, Moller JK, Vilholm OJ (2015) Season is an unreliable predictor of Lyme neuroborreliosis. *Danish Medical Journal* 62.

Petrov D, Marchalik D, Sosin M, Bal A (2012) Factors affecting duration of chronic fatigue syndrome in pediatric patients. *Indian Journal of Pediatrics* 79: 52-55.

Phoebe T, Lam T (2016) Validating negative binomial Lyme disease regression model with bootstrap resampling. *Environmental Modelling & Software* 82: 121-127.

Picha D, Moravcova L, Zdarsky E, Maresova V, Hulinsky V (2005) PCR in Lyme neuroborreliosis: a prospective study. *Acta Neurologica Scandinavica* 112: 287-292.

Picha D, Moravcova L, Holeckova D, Zd'arsky E, Valesova M, Maresova V, Hercogova J, Vanousova D (2008) Examination of specific DNA by PCR in patients with different forms of Lyme borreliosis. *International Journal of Dermatology* 47: 1004-1010.

Picha D, Moravcova L, Vanousova D, Hercogova J, Blechova Z (2014) DNA persistence after treatment of Lyme borreliosis. *Folia Microbiologica* 59: 115-125.

Pikelj-Pecnik A, Lotric-Furlan S, Maraspin V, Cimperman J, Logar M, Jurca T, Strle F (2002) Electrocardiographic findings in patients with erythema migrans. *Wiener Klinische Wochenschrift* 114: 510-514.

Piqueur M, Opdenbergh I, Baetens D (2009) Evaluation of different immunoassays on Liaison. *Clinical Microbiology and Infection* 15: S644.

Podsiadly E, Chmielewski T, Tylewska-Wierzbanowska S (2003) Bartonella henselae and Borrelia burgdorferi infections of the central nervous system. *Annals of the New York Academy of Sciences* 990: 404-406.

Podsiadly E, Chmielewski T, Karbowski G, Kedra E, Tylewska-Wierzbanowska S (2011) The occurrence of spotted fever rickettsioses and other tick-borne infections in forest workers in Poland. *Vector Borne and Zoonotic Diseases* 11: 985-989.

Pomelova VG, Korenberg EI, Kuznetsova TI, Bychenkova TA, Bekman NI, Osin NS (2015) C6 Peptide-Based Multiplex Phosphorescence Analysis (PHOSPHAN) for Serologic Confirmation of Lyme Borreliosis. *PLoS ONE* 10: e0130048.

Ponzoni M, Ferreri AJ, Mappa S, Pasini E, Govi S, Facchetti F, Fanoni D, Tucci A, Vino A, Doglioni C, Berti E, Dolcetti R (2011) Prevalence of *Borrelia burgdorferi* infection in a series of 98 primary cutaneous lymphomas. *Oncologist* 16: 1582-1588.

Popov G (2011) Infectious diseases among EUFOR military personnel. *Clinical Microbiology and Infection* 17: S759.

Porwancher RB, Hagerty CG, Fan J, Landsberg L, Johnson BJ, Kopnitsky M, Steere AC, Kulas K, Wong SJ (2011) Multiplex immunoassay for Lyme disease using VlsE1-IgG and pepC10-IgM antibodies: improving test performance through bioinformatics. *Clinical and Vaccine Immunology* 18: 851-859.

Praharaj AK, Jetley S, Kalghatgi AT (2008) Seroprevalence of *Borrelia burgdorferi* in North Eastern India. *Medical Journal Armed Forces India* 64: 26-28.

Prisco UL, Prisco KJ (2015) Validation and correlation of VIDAS IgGII and IgMII Lyme antibodies vs VIDAS Lyme IgG/IgM in the laboratory evaluation of Lyme disease: Clinical implications. *Clinical Chemistry* 61: S141.

Pritt BS, Mead PS, Johnson DKH, Neitzel DF, Respicio-Kingry LB, Davis JP, Schiffman E, Sloan LM, Schriefer ME, Replogle AJ, Paskewitz SM, Ray JA, Bjork J, Steward CR, Deedon A, Lee X, Kingry LC, Miller TK, Feist MA, Theel ES, Patel R, Irish CL, Petersen JM (2016) Identification of a novel pathogenic *Borrelia* species causing Lyme borreliosis with unusually high spirochaetaemia: A descriptive study. *The Lancet Infectious Diseases* 16: 556-564.

Public Health England (2014) *Common animal associated infections quarterly report (England and Wales) - third quarter 2014*. London: Public Health England.

Pugliese A, Beltramo T, Torre D (2007) Seroprevalence study of Tick-borne encephalitis, *Borrelia burgdorferi*, Dengue and Toscana virus in Turin Province. *Cell Biochemistry and Function* 25: 185-188.

Puri BK, Shah M, Julu PO, Kingston MC, Monro JA (2013) Urinary bladder detrusor dysfunction symptoms in Lyme disease. *International neurourology journal* 17: 127-129.

Puri BK, Monro JA, Julu PO, Kingston MC, Shah M (2014a) Hyperosmia in Lyme disease. *Arquivos de Neuro-Psiquiatria* 72: 596-597.

Puri BK, Segal DR, Monro JA (2014b) Diagnostic use of the lymphocyte transformation test-memory lymphocyte immunostimulation assay in confirming active Lyme borreliosis in

clinically and serologically ambiguous cases. *International journal of clinical and experimental medicine* 7: 5890-5892.

Puri BK, Shah M, Julu PO, Kingston MC, Monro JA (2014c) The association of Lyme disease with loss of sexual libido and the role of urinary bladder detrusor dysfunction. *International neurourology journal* 18: 95-97.

Puri BK, Shah M, Monro JA, Kingston MC, Julu PO (2014d) Respiratory modulation of cardiac vagal tone in Lyme disease. *World Journal of Cardiology* 6: 502-506.

Puri BK, Hakkarainen-Smith JS, Monro JA (2015) The potential use of cholestyramine to reduce the risk of developing Clostridium difficile-associated diarrhoea in patients receiving long-term intravenous ceftriaxone. *Medical Hypotheses* 84: 78-80.

Pychova M, Strakova J, Husa P (2014) Tick-borne encephalitis: Course and complications - Our observations from 2009 to 2012. *Ceska a Slovenska Neurologie a Neurochirurgie* 77: 339-342.

Qureshi M, Bedlack RS, Cudkowicz ME (2009) Lyme disease serology in amyotrophic lateral sclerosis. *Muscle & Nerve* 40: 626-628.

Qureshi MZ, New D, Zulqarni NJ, Nachman S (2002) Overdiagnosis and overtreatment of Lyme disease in children. *Pediatric Infectious Disease Journal* 21: 12-14.

Ramgopal S, Obeid R, Zuccoli G, Cleves-Bayon C, Nowalk A (2016) Lyme disease-related intracranial hypertension in children: clinical and imaging findings. *Journal of Neurology* 263: 500-507.

Ramsey AH, Belongia EA, Chyou PH, Davis JP (2004) Appropriateness of Lyme disease serologic testing. *Annals of Family Medicine* 2: 341-344.

Rebman AW, Aucott JN, Weinstein ER, Bechtold KT, Smith KC, Leonard L (2015) Living in Limbo: Contested Narratives of Patients With Chronic Symptoms Following Lyme Disease. *Qualitative Health Research* 1: 1.

Reiber H, Ressel CB, Spreer A (2013) Diagnosis of neuroborreliosis - Improved knowledge base for qualified antibody analysis and cerebrospinal fluid data pattern related interpretations. *Neurology Psychiatry and Brain Research* 19: 159-169.

Reimer B, Erbas B, Lobbichler K, Truckenbrodt R, Gartner-Kothe U, Kapeller N, Hansen M, Fingerle V, Wilske B, von Sonnenburg F (2002) Seroprevalence of Borrelia infection in occupational tick-exposed people in Bavaria (Germany). *International Journal of Medical Microbiology* 291 Suppl 33: 215.

Renaud I, Cachin C, Gerster JC (2004) Good outcomes of Lyme arthritis in 24 patients in an endemic area of Switzerland. *Joint, Bone, Spine* 71: 39-43.

Reznicek L, Seidensticker F, Stumpf C, Kampik A, Thureau S, Kernt M, Neubauer A (2014) Systematic Analysis of Wide-Field Fundus Autofluorescence (FAF) Imaging in Posterior Uveitis. *Current Eye Research* 39: 164-171.

Rieger MA, Nubling M, Hess S, Batsford S, Hofmann F (2002) Seroprevalence of antibodies against *Borrelia burgdorferi* s. l. and tick-borne encephalitis virus in the Bergische Land region of Northrhine Westfalia. *International Journal of Medical Microbiology* 291 Suppl 33: 216-217.

Riesbeck K, Hammas B (2007) Comparison of an automated *Borrelia* indirect chemiluminescent immunoassay (CLIA) with a VlsE/C6 ELISA and Immunoblot. *European Journal of Clinical Microbiology & Infectious Diseases* 26: 517-519.

Rigaud E, Jaulhac B, Garcia-Bonnet N, Hunfeld KP, Femenia F, Huet D, Goulvestre C, Vaillant V, Deffontaines G, Abadia-Benoist G (2016) Seroprevalence of seven pathogens transmitted by the *Ixodes ricinus* tick in forestry workers in France. *Clinical Microbiology and Infection* 26: 26.

Roberts MTM, Lever AML (2003) An analysis of imported infections over a 5-year period at a teaching hospital in the United Kingdom. *Travel Medicine and Infectious Disease* 1: 227-230.

Robinson S (2014) Lyme Disease in Maine: a Comparison of NEDSS Surveillance Data and Maine Health Data Organization Hospital Discharge data. *Online Journal of Public Health Informatics* 5: 231.

Robinson SJ, Neitzel DF, Moen RA, Craft ME, Hamilton KE, Johnson LB, Mulla DJ, Munderloh UG, Redig PT, Smith KE, Turner CL, Umber JK, Pelican KM (2015) Disease risk in a dynamic environment: the spread of tick-borne pathogens in Minnesota, USA. *Ecohealth* 12: 152-163.

Rodriguez I, Fernandez C, Sanchez L, Martinez B, Siegrist HH, Lienhard R (2012) Prevalence of antibodies to *Borrelia burgdorferi sensu stricto* in humans from a Cuban village. *Brazilian Journal of Infectious Diseases* 16: 82-85.

Rojko T, Ruzic-Sabljić E, Strle F, Lotric-Furlan S (2005) Prevalence and incidence of Lyme borreliosis among Slovene forestry workers during the period of tick activity. *Wiener Klinische Wochenschrift* 117: 219-225.

Rossi C, Stromdahl EY, Rohrbeck P, Olsen C, DeFraités RF (2015) Characterizing the relationship between tick bites and Lyme disease in active component U.S. Armed Forces in the eastern United States. *Medical Surveillance Monthly Report* 22: 2-10.

- Rosslhuber F, Schausberger C, Emberger M, Mustafa L (2012) Detection of *Borrelia burgdorferi* in formalin fixed paraffin embedded skin biopsies. *Clinical Chemistry and Laboratory Medicine* 50 (10): A288.
- Rossmann E, Richards G, Fingerle V, Sing A, Bechtel M (2009) Evaluation of a new Lyme borreliosis immunoblot including EBV and syphilis antigens as differential diagnosis tools. *International Journal of Medical Microbiology* 299: 32-33.
- Roth J, Scheer I, Kraft S, Keitzer R, Riebel T (2006) Uncommon synovial cysts in children. *European Journal of Pediatrics* 165: 178-181.
- Roux F, Boyer E, Jaulhac B, Dernis E, Closs-Prophette F, Puechal X (2007) Lyme meningoradiculitis: prospective evaluation of biological diagnosis methods. *European Journal of Clinical Microbiology & Infectious Diseases* 26: 685-693.
- Rudnik I, Poplawska R, Szulc A, Juchnowicz D, Konarzewska B, Czernikiewicz A, Debowska I (2003) Mental disorders in patients with Lyme Disease. *European Neuropsychopharmacology* 13: S443-S443.
- Russell C, Martin D, Pillai D, Kristjanson E, Lindsay L (2009) Trends in blacklegged tick submissions and Lyme disease serology at Ontario Public Health Laboratories. *International Journal of Antimicrobial Agents* 34: S104.
- Rutman M, Garro A, Simonsen K, Jaeger J, Lockhart G (2007) Lyme disease as a cause of aseptic meningitis in children in a Lyme-endemic region...2007 Society for Academic Emergency Medicine Annual Meeting. *Academic Emergency Medicine* 14: S178-S178.
- Rutz HJ, Wee S, Feldman KA (2016) Characterizing Lyme Disease Surveillance in an Endemic State. *Zoonoses and Public Health* 29: 29.
- Ruzic-Sabljić E, Maraspin V, Cimperman J, Lotric-Furlan S, Strle F (2002) Evaluation of immunofluorescence test (IFT) and immuno (western) blot (WB) test in patients with erythema migrans. *Wiener Klinische Wochenschrift* 114: 586-590.
- Ruzic-Sabljić E, Maraspin V, Cimperman J, Strle F, Lotric-Furlan S, Stupica D, Cerar T (2014) Comparison of isolation rate of *Borrelia burgdorferi* sensu lato in two different culture media, MKP and BSK-H. *Clinical Microbiology and Infection* 20: 636-641.
- Sandhu GK, Singh D (2014) Level of awareness regarding some zoonotic diseases, among dog owners of Ithaca, New York. *Journal of Family Medicine & Primary Care* 3: 418-423.
- Santino I, Grillo R, Nicoletti M, Santapaola D, Speziale D, Sessa R, Fadda G, Del Piano M (2002) Prevalence of IgG antibodies against *Borrelia burgdorferi* s.l. and *Ehrlichia phagocytophila* in sera of patients presenting symptoms of Lyme disease in a central region of Italy. *International Journal of Immunopathology and Pharmacology* 15: 245-248.

Santino I, Cammarata E, Franco S, Galdiero F, Oliva B, Sessa R, Cipriani P, Tempera G, Del Piano M (2004) Multicentric study of seroprevalence of *Borrelia burgdorferi* and *Anaplasma phagocytophila* in high-risk groups in regions of central and southern Italy. *International Journal of Immunopathology and Pharmacology* 17: 219-223.

Santino I, Berlutti F, Pantanella F, Sessa R, Del Piano M (2008) Detection of *Borrelia burgdorferi* sensu lato DNA by PCR in serum of patients with clinical symptoms of Lyme borreliosis. *FEMS Microbiology Letters* 283: 30-35.

Santino I, Sessa R, Pantanella F, Tomao P, Di Renzi S, Martini A, Nicoletti M, Del Piano M (2009) Detection of different *Borrelia burgdorferi* genospecies in serum of people with different occupational risks: short report. *International Journal of Immunopathology and Pharmacology* 22: 537-541.

Santos AS, Bacellar F, Dumler JS (2006) Human exposure to *Anaplasma phagocytophilum* in Portugal. *Annals of the New York Academy of Sciences* 1078: 100-105.

Santos M, Ribeiro-Rodrigues R, Lobo R, Talhari S (2010) Antibody reactivity to *Borrelia burgdorferi* sensu stricto antigens in patients from the Brazilian Amazon region with skin diseases not related to Lyme disease. *International Journal of Dermatology* 49: 552-556.

Santos M, Ribeiro-Rodrigues R, Talhari C, Ferreira LC, Zelger B, Talhari S (2011) Presence of *Borrelia burgdorferi* "Sensu Lato" in patients with morphea from the Amazonic region in Brazil. *International Journal of Dermatology* 50: 1373-1378.

Sapi E, Pabbati N, Datar A, Davies EM, Rattelle A, Kuo BA (2013) Improved culture conditions for the growth and detection of *Borrelia* from human serum. *International Journal of Medical Sciences* 10: 362-376.

Sarwari AR, Strickland T, Pena C, Burkot TR (2005) Tick exposure and Lyme disease at a summer camp in Maryland. *West Virginia Medical Journal* 101: 126-130.

Satalino A (2009) Personality traits, perceived stress, and coping styles in patients with chronic Lyme disease and fibromyalgia. *Dissertation Abstracts International: Section B: The Sciences and Engineering* 69: 7149.

Saulsbury FT (2005) Lyme arthritis in 20 children residing in a non-endemic area. *Clinical Pediatrics* 44: 419-421.

Savely VR, Stricker RB (2010) Morgellons disease: Analysis of a population with clinically confirmed microscopic subcutaneous fibers of unknown etiology. *Journal of Investigative Medicine* 58 (1): 214-215.

Schaefer S, Boegershausen N, Meyer S, Ivan D, Schepelmann K, Kann PH (2008) Hypothalamic-pituitary insufficiency following infectious diseases of the central nervous system. *European Journal of Endocrinology* 158: 3-9.

Schafers M, Neukirchen S, Toyka KV, Sommer C (2008) Diagnostic value of sural nerve biopsy in patients with suspected *Borrelia* neuropathy. *Journal of the Peripheral Nervous System* 13: 81-91.

Schardt FW (2004) Clinical effects of fluconazole in patients with neuroborreliosis. *European Journal of Medical Research* 9: 334-336.

Schenk J, Doebis C, Kusters U, von Baehr V (2015) Evaluation of a New Multiparametric Microspot Array for Serodiagnosis of Lyme Borreliosis. *Clinical Laboratory* 61: 1715-1725.

Schiffman EK, McLaughlin C, Ray JA, Kemperman MM, Hinckley AF, Friedlander HG, Neitzel DF (2016) Underreporting of Lyme and Other Tick-Borne Diseases in Residents of a High-Incidence County, Minnesota, 2009. *Zoonoses and Public Health* 8: 8.

Schmidt C, Plate A, Angele B, Pfister HW, Wick M, Koedel U, Rupprecht TA (2011a) A prospective study on the role of CXCL13 in Lyme neuroborreliosis. *Neurology* 76: 1051-1058.

Schmidt H, Schmidt-Samoa C, Djukic M, Neubieser K, Dechent P, Knauth M, Nau R, Von Steinbüchel N, Eiffert H (2009) Patients after proven neuroborreliosis - How severe is the persisting neuropsychological damage? *Clinical Microbiology and Infection* 15: S173.

Schmidt H, Drenck K, Wiefek J, Blocher J, Rostasy K, Von Steinbüchel N, Eiffert H, Brockmann K (2011b) Childhood neuroborreliosis does not lead to long-term cognitive disturbances. *Clinical Microbiology and Infection* 17: S71.

Schmidt H, Djukic M, Jung K, Holzgraefe M, Dechent P, von Steinbüchel N, Blocher J, Eiffert H, Schmidt-Samoa C (2015) Neurocognitive functions and brain atrophy after proven neuroborreliosis: a case-control study. *BMC Neurology* 15: 1-11.

Schoen RT, Deshefy-Longhi T, Van-Hoecke C, Buscarino C, Fikrig E (2003) An open-label, nonrandomized, single-center, prospective extension, clinical trial of booster dose schedules to assess the safety profile and immunogenicity of recombinant outer-surface protein A (OspA) Lyme disease vaccine. *Clinical Therapeutics* 25: 210-224.

Schollkopf C, Melbye M, Munksgaard L, Smedby KE, Rostgaard K, Glimelius B, Chang ET, Roos G, Hansen M, Adami HO, Hjalgrim H (2008) *Borrelia* infection and risk of non-Hodgkin lymphoma. *Blood* 111: 5524-5529.

Schoombee C (2014) *Coping, depression, and quality of life of individuals with chronic Lyme disease*. The Chicago School of Professional Psychology.

Schulte-Spechtel U, Lehnert G, Liegl G, Fingerle V, Heimerl C, Johnson BJ, Wilske B (2003) Significant improvement of the recombinant Borrelia-specific immunoglobulin G immunoblot test by addition of VlsE and a DbpA homologue derived from Borrelia garinii for diagnosis of early neuroborreliosis. *Journal of Clinical Microbiology* 41: 1299-1303.

Schulte-Spechtel U, Lehnert G, Liegl G, Fingerle V, Heimerl C, Johnson B, Wilske B (2004) Significant improvement of the recombinant Borrelia IgG immunoblot for serodiagnosis of early neuroborreliosis. *International Journal of Medical Microbiology* 293 Suppl 37: 158-160.

Schwartz S, Novicki T, Flanagan J, Simon G (2013) Method comparison of two ELISA platforms for the detection of b.burgdorferi (Lyme) antibodies; C6 specific peptide vs. Whole cell sonicate. *Clinical Chemistry* 1): A70.

Schwarzbach A (2012) Diagnostic novelties of chronic Lyme/ Neuroborreliosis. *Journal of Gastrointestinal and Liver Diseases* 21: 22.

Schwarzova K, Kost'anova Z, Holeckova K, Spitalska E, Boldis V (2009) Direct detection of Borrelia burgdorferi spirochetes in patients with early disseminated Lyme borreliosis. *Central European Journal of Public Health* 17: 179-182.

Schwarzova K (2011) Laboratory diagnostic methods in suspected disseminated Lyme disease: A comparison of different techniques. *Acta Microbiologica et Immunologica Hungarica* 58: 210-211.

Schwarzwalder A, Schneider MF, Lydecker A, Aucott JN (2010a) Sex differences in the clinical and serologic presentation of early Lyme disease: Results from a retrospective review. *Gender Medicine* 7: 320-329.

Schwarzwalder A, Soloski M, Lydecker A, Klein S, Aucott J (2010b) The Clinical and Laboratory Characteristics of Early Lyme Disease Differ Between Men and Women. *Journal of Women's Health* 19: 633-633.

Seidel MF, Domene AB, Vetter H (2007) Differential diagnoses of suspected Lyme borreliosis or post-Lyme-disease syndrome. *European Journal of Clinical Microbiology & Infectious Diseases* 26: 611-617.

Seifert VA, Wilson S, Toivonen S, Clarke B, Prunuske A (2016) Community Partnership Designed to Promote Lyme Disease Prevention and Engagement in Citizen Science. *Journal of Microbiology & Biology Education* 17: 63-69.

Sekeyova Z, Subramanian G, Mediannikov O, Diaz MQ, Nyitray A, Blaskovicova H, Raoult D (2012) Evaluation of clinical specimens for Rickettsia, Bartonella, Borrelia, Coxiella, Anaplasma, Francisella and Diplorickettsia positivity using serological and molecular biology methods. *FEMS Immunology and Medical Microbiology* 64: 82-91.

Selmani Z, Pyykko I, Ishizaki H, Ashammakhi N (2002) Use of electrocochleography for assessing endolymphatic hydrops in patients with Lyme disease and Meniere's disease. *Acta Oto-Laryngologica* 122: 173-178.

Senel M, Rupprecht T, Tumani H, Pfister HW, Ludolph AC, Brettschneider J (2010a) The chemokine CXCL13 as a diagnostic and therapy response marker in acute neuroborreliosis. *Journal of Neurology* 257: S14-S15.

Senel M, Rupprecht TA, Tumani H, Pfister HW, Ludolph AC, Brettschneider J (2010b) The chemokine CXCL13 in acute neuroborreliosis. *Journal of Neurology, Neurosurgery & Psychiatry* 81: 929-933.

Sengun IS, Ozbek OA, Oktem MA, Yaka E, Ergor G, Akdal G (2006) Amyotrophic Lateral Sclerosis and Lyme Borreliosis. *Neuromuscular Disorders* 16: S81-S81.

Sepp M, Pajula S, Pulk R (2013) Evaluation of a new euroimmun anti-borrelia select elisa (IGM/IGG) test kit. *Biochimica Clinica* 37: S148.

Seriburi V, Ndukwe N, Chang Z, Cox ME, Wormser GP (2012) High frequency of false positive IgM immunoblots for *Borrelia burgdorferi* in clinical practice. *Clinical Microbiology and Infection* 18: 1236-1240.

Seslar SP, Berul CI, Burklow TR, Cecchin F, Alexander ME (2006) Transient prolonged corrected QT interval in Lyme disease. *Journal of Pediatrics* 148: 692-697.

Seukep SE, Kolivras KN, Hong Y, Li J, Prisley SP, Campbell JB, Gaines DN, Dymond RL (2015) An Examination of the Demographic and Environmental Variables Correlated with Lyme Disease Emergence in Virginia. *Ecohealth* 12: 634-644.

Seyfert U (2012) Recurrent early pregnancy loss, intrauterine death-causes, diagnosis and therapeutical approach. *Hamostaseologie* 32 (1): A99.

Shadick NA, Phillips CB, Maher NE, Wright E, Anne F, Axt T, Akerblom J, Lew R, Berardi V, Liang M (2002) Diminished health-related quality-of-life improves over time in Lyme Disease (LD): The 12 year followup from the Nantucket Lyme Disease cohort study. *Arthritis and Rheumatism* 46: S458-S458.

Shadick NA, Zibit MJ, Nardone E, DeMaria A, Jr., Iannaccone CK, Cui J (2016) A School-Based Intervention to Increase Lyme Disease Preventive Measures Among Elementary School-Aged Children. *Vector Borne and Zoonotic Diseases* 16: 507-515.

Shah SS, Zaoutis TE, Turnquist J, Hodinka RL, Coffin SE (2005) Early differentiation of Lyme from enteroviral meningitis. *Pediatric Infectious Disease Journal* 24: 542-545.

Shoemaker RC, Hudnell HK, House DE, Van Kempen A, Pakes GE (2006) Atovaquone plus cholestyramine in patients coinfecting with *Babesia microti* and *Borrelia burgdorferi* refractory to other treatment. *Advances in Therapy* 23: 1-11.

Shotland LI, Mastrianni MA, Choo DL, Szymko-Bennett YM, Dally LG, Pikus AT, Sledjeski K, Marques A (2003) Audiologic manifestations of patients with post-treatment Lyme disease syndrome. *Ear & Hearing* 24: 508-517.

Shrestha S, Hsu WH, Hwang SA, Sheridan S, Lin S (2013) Association between Lyme disease and weather types in New York State. *American Journal of Epidemiology* 177: S64.

Sibony P, Halperin J, Coyle PK, Patel K (2005) Reactive Lyme serology in optic neuritis. *Journal of Neuro-Ophthalmology* 25: 71-82.

Sickbert-Bennett EE, Weber DJ, Poole C, MacDonald PDM, Maillard JM (2010) Utility of international classification of diseases, ninth revision, clinical modification codes for communicable disease surveillance. *American Journal of Epidemiology* 172: 1299-1305.

Sillanpaa H, Lahdenne P, Sarvas H, Arnez M, Steere A, Peltomaa M, Seppala I (2007) Immune responses to borrelial VlsE IR6 peptide variants. *International Journal of Medical Microbiology* 297: 45-52.

Sillanpaa H, Skogman BH, Sarvas H, Seppala IJ, Lahdenne P (2013) Cerebrospinal fluid chemokine CXCL13 in the diagnosis of neuroborreliosis in children. *Scandinavian Journal of Infectious Diseases* 45(7): 526-530.

Sillanpaa H, Skogman BH, Sarvas H, Seppala IJ, Lahdenne P (2014) Antibodies to decorin-binding protein B (DbpB) in the diagnosis of Lyme neuroborreliosis in children. *International Journal of Infectious Diseases* 28: 160-163.

Singh S, Parker D, Mark-Carew M, White R, II, Fisher M (2016) Lyme Disease In West Virginia: An Assessment Of Distribution And Clinicians' Knowledge Of Disease And Surveillance. *West Virginia Medical Journal* July 2016.

Situm M, Poje G, Grahovac B, Marinovic B, Levanat S (2002) Diagnosis of Lyme borreliosis by polymerase chain reaction. *Clinics in Dermatology* 20: 147-155.

Sjowall J, Ledel A, Ernerudh J, Ekerfelt C, Forsberg P (2012) Doxycycline-mediated effects on persistent symptoms and systemic cytokine responses post-neuroborreliosis: a randomized, prospective, cross-over study. *BMC Infectious Diseases* 12: 186.

Skarpaas T, Ljostad U, Soby M, Mygland A (2007) Sensitivity and specificity of a commercial C6 peptide enzyme immuno assay in diagnosis of acute Lyme neuroborreliosis. *European Journal of Clinical Microbiology & Infectious Diseases* 26: 675-677.

Skinner-Taylor CM, Flores MS, Salinas JA, Arevalo-Nino K, Galan-Wong LJ, Maldonado G, Garza-Elizondo MA (2016) Antibody profile to *Borrelia burgdorferi* in veterinarians from Nuevo Leon, Mexico, a non-endemic area of this zoonosis. *Reumatologia* 54: 97-102.

Skogman BH, Croner S, Odkvist L (2003) Acute facial palsy in children--a 2-year follow-up study with focus on Lyme neuroborreliosis. *International Journal of Pediatric Otorhinolaryngology* 67: 597-602.

Skogman BH, Croner S, Forsberg P, Ernerudh J, Lahdenne P, Sillanpaa H, Seppala I (2008a) Improved laboratory diagnostics of Lyme neuroborreliosis in children by detection of antibodies to new antigens in cerebrospinal fluid. *Pediatric Infectious Disease Journal* 27: 605-612.

Skogman BH, Croner S, Nordwall M, Eknefelt M, Ernerudh J, Forsberg P (2008b) Lyme neuroborreliosis in children: a prospective study of clinical features, prognosis, and outcome. *Pediatric Infectious Disease Journal* 27: 1089-1094.

Skogman BH, Ekerfelt C, Ludvigsson J, Forsberg P (2010) Seroprevalence of *Borrelia* IgG antibodies among young Swedish children in relation to reported tick bites, symptoms and previous treatment for Lyme borreliosis: a population-based survey. *Archives of Disease in Childhood* 95: 1013-1016.

Skogman BH, Glimaker K, Nordwall M, Vrethem M, Odkvist L, Forsberg P (2012) Long-term clinical outcome after Lyme neuroborreliosis in childhood. *Pediatrics* 130: 262-269.

Skogman BH, Sjowall J, Lindgren PE (2015) The NeBoP score - a clinical prediction test for evaluation of children with Lyme Neuroborreliosis in Europe. *BMC Pediatrics* 15: 214.

Slack GS, Mavin S, Yirrell D, Ho-Yen DO (2011) Is Tayside becoming a Scottish hotspot for Lyme borreliosis? *Journal of the Royal College of Physicians of Edinburgh* 41: 5-8.

Smismans A, Goossens VJ, Nulens E, Bruggeman CA (2006) Comparison of five different immunoassays for the detection of *Borrelia burgdorferi* IgM and IgG antibodies. *Clinical Microbiology and Infection* 12: 648-655.

Smit PW, Kurkela S, Kuusi M, Vapalahti O (2015) Evaluation of two commercially available rapid diagnostic tests for Lyme borreliosis. *European Journal of Clinical Microbiology & Infectious Diseases* 34: 109-113.

Smith R, Takkinen J (2006) Lyme borreliosis: Europe-wide coordinated surveillance and action needed? *Euro Surveillance* 11: 2977.

Smith RP, Schoen RT, Rahn DW, Sikand VK, Nowakowski J, Parenti DL, Holman MS, Persing DH, Steere AC (2002) Clinical characteristics and treatment outcome of early Lyme disease in patients with microbiologically confirmed erythema migrans. *Annals of Internal Medicine* 136: 421-428.

Smith RP, Jr., Elias SP, Borelli TJ, Missaghi B, York BJ, Kessler RA, Lubelczyk CB, Lacombe EH, Hayes CM, Coulter MS, Rand PW (2014) Human babesiosis, Maine, USA, 1995-2011. *Emerging Infectious Diseases* 20: 1727-1730.

Smith SM (2006) Imported disease in emergency departments: An undiscovered country? *Journal of Travel Medicine* 13: 73-77.

Smitka M, Lueck C, Von Der Hagen M, Jacobs E (2013) Mycoplasma pneumoniae and Borrelia burgdorferi as cause for facial paralysis in children: Single-center experience of 10 years. *Neuropediatrics* 44: PS18_1188.

Sočan M, Blaško-Markič M, Erčulj V, Lajovic J (2015) Socio-economic characteristics in notified erythema migrans patients. *Slovenian Journal of Public Health* 54: 267-273.

Soderlin MK, Kautiainen H, Puolakkainen M, Hedman K, Soderlund-Venermo M, Skogh T, Leirisalo-Repo M (2003) Infections preceding early arthritis in southern Sweden: a prospective population-based study. *Journal of Rheumatology* 30: 459-464.

Soltysova K, Smiskova D, Picha D, Sojkova N, Podojilova M, Roubalova K, Sedivy K, Maresova V (2007) Neuroborreliosis and tick-borne encephalitis - same vector, but different clinical course. *International Journal of Antimicrobial Agents* 29: S420-S420.

Sonnleitner ST, Margos G, Wex F, Simeoni J, Zelger R, Schmutzhard E, Lass-Flörl C, Walder G (2015) Human seroprevalence against Borrelia burgdorferi sensu lato in two comparable regions of the eastern Alps is not correlated to vector infection rates. *Ticks and Tick-Borne Diseases* 6: 221-227.

Spackova I, Ondrejškova A, Svandova H, Chlebkova J (2015) Enzyme-linked immunospot assay in the laboratory diagnostics of Lyme borreliosis. *Clinical Chemistry and Laboratory Medicine* 53: S1335.

Spirin NN, Baranova NS, Fadeeva OA, Shipova EG, Stepanov IO (2010) Differential aspects of primary progressive multiple sclerosis and neuroborreliosis. *Multiple Sclerosis* 16: S200.

Spirin NN, Fadeeva OA, Baranova NS, Shipova EG, Stepanov IO (2011) Differential diagnosis of multiple sclerosis and chronic progressive borrelial encephalomyelitis. *Multiple Sclerosis* 17: S56.

Spirin NN, Fadeeva OA, Baranova NS, Shipova EG, Stepanov IO (2012) Antibiotic therapy in patients with the combination of definite multiple sclerosis and chronic Lyme disease. *European Journal of Neurology* 19: 718-718.

Spolidorio MG, Labruna MB, Machado RZ, Moraes-Filho J, Zago AM, Donatele DM, Pinheiro SR, Silveira I, Caliari KM, Yoshinari NH (2010) Survey for tick-borne zoonoses in the state of

Espirito Santo, southeastern Brazil. *American Journal of Tropical Medicine and Hygiene* 83: 201-206.

Sprong H, Docters van Leeuwen A, Fonville M, Harms M, van Vliet AJ, van Pelt W, Ferreira JA, van den Wijngaard CC (2013) Sensitivity of a point of care tick-test for the development of Lyme borreliosis. *Parasites & Vectors* 6: 338.

Stanek G, Strle F (2009) Lyme borreliosis: a European perspective on diagnosis and clinical management. *Infectious Disease Clinics of North America* 22: 450-454.

Stanek G, Lusa L, Ogrinc K, Markowicz M, Strle F (2014) Intrathecally produced IgG and IgM antibodies to recombinant VlsE, VlsE peptide, recombinant OspC and whole cell extracts in the diagnosis of Lyme neuroborreliosis. *Medical Microbiology and Immunology* 203: 125-132.

Steere AC, Dhar A, Hernandez J, Fischer PA, Sikand VK, Schoen RT, Nowakowski J, McHugh G, Persing DH (2003a) Systemic symptoms without erythema migrans as the presenting picture of early Lyme disease. *American Journal of Medicine* 114: 58-62.

Steere AC, McHugh G, Suarez C, Hoitt J, Damle N, Sikand VK (2003b) Prospective study of coinfection in patients with erythema migrans. *Clinical Infectious Diseases* 36: 1078-1081.

Steere AC, Sikand VK, Schoen RT, Nowakowski J (2003c) Asymptomatic infection with *Borrelia burgdorferi*. *Clinical Infectious Diseases* 37: 528-532.

Steere AC, McHugh G, Damle N, Sikand VK (2008) Prospective study of serologic tests for Lyme disease. *Clinical Infectious Diseases* 47: 188-195.

Stinco G, Ruscio M, Bergamo S, Trotter D, Patrone P (2014) Clinical features of 705 *Borrelia burgdorferi* seropositive patients in an endemic area of northern Italy. *TheScientificWorldJournal* 2014: 414505.

Stjernberg L, Berglund J (2002) Risk of acquiring tick bites in south-eastern Sweden. *Scandinavian Journal of Infectious Diseases* 34: 840-844.

Stricker RB, Harris NS, Yong DC, Winger EE (2003) Clinical and seroepidemiologic characteristics of *Babesia WA-1* coinfection in patients with Lyme disease in California. *Journal of Investigative Medicine* 51: S145-S145.

Stricker RB, Lautin A (2003) Lyme disease and optic neuritis: long-term follow-up of seropositive patients. *Neurology* 61: 1162; author reply 1162-1163.

Stricker RB, Moore DH, Winger EE (2004) Clinical and immunologic evidence for transmission of Lyme disease through intimate human contact. *Journal of Investigative Medicine* 52: S151-S151.

Stricker RB, Green CL, Savely VR, Chamallas SN (2008) Safety of intravenous antibiotic therapy in chronic Lyme disease. *Journal of Investigative Medicine* 56: 190-190.

Stricker RB, Green CL, Savely VR, Chamallas SN, Johnson L (2010) Safety of intravenous antibiotic therapy in patients referred for treatment of neurologic Lyme disease. *Minerva Medica* 101: 1-7.

Stricker RB, DeLong AK, Green CL, Savely VR, Chamallas SN, Johnson L (2011) Benefit of intravenous antibiotic therapy in patients referred for treatment of neurologic Lyme disease. *International journal of general medicine* 4: 639-646.

Strle F, Videcnik J, Zorman P, Cimperman J, Lotric-Furlan S, Maraspin V (2002) Clinical and epidemiological findings for patients with erythema migrans. Comparison of cohorts from the years 1993 and 2000. *Wiener Klinische Wochenschrift* 114: 493-497.

Strle F, Ruzic-Sabljić E, Cimperman J, Lotric-Furlan S, Maraspin V (2006) Comparison of findings for patients with *Borrelia garinii* and *Borrelia afzelii* isolated from cerebrospinal fluid. *Clinical Infectious Diseases* 43: 704-710.

Strle F, Ruzic-Sabljić E, Logar M, Maraspin V, Lotric-Furlan S, Cimperman J, Ogrinc K, Stupica D, Nadelman RB, Nowakowski J, Wormser GP (2011) Comparison of erythema migrans caused by *Borrelia burgdorferi* and *Borrelia garinii*. *Vector Borne and Zoonotic Diseases* 11: 1253-1258.

Strle F, Lusa L, Ruzic-Sabljić E, Maraspin V, Lotric F, Cimperman J, Ogrinc K, Rojko T, Videcnik Z, Stupica D (2013a) Clinical characteristics associated with *Borrelia burgdorferi* sensu lato skin culture results in patients with erythema migrans. *PLoS ONE* 8: e82132.

Strle F, Wormser GP, Mead P, Dhaduvai K, Longo MV, Adenikinju O, Soman S, Tefera Y, Maraspin V, Lotric-Furlan S, Ogrinc K, Cimperman J, Ruzic-Sabljić E, Stupica D (2013b) Gender disparity between cutaneous and non-cutaneous manifestations of Lyme borreliosis. *PLoS ONE* 8: e64110.

Strle F, Bogovic P, Cimperman J, Maraspin V, Ogrinc K, Rojko T, Stupica D, Lusa L, Avsic-Zupanc T, Smrdel KS, Jelovsek M, Lotric-Furlan S (2014) Are patients with erythema migrans who have leukopenia and/or thrombocytopenia coinfecting with *Anaplasma phagocytophilum* or tick-borne encephalitis virus? *PLoS ONE* 9: e103188.

Stupica D, Lusa L, Cerar T, Ruzic-Sabljić E, Strle F (2011) Comparison of post-Lyme Borreliosis symptoms in erythema migrans patients with positive and negative *Borrelia burgdorferi* sensu lato skin culture. *Vector Borne and Zoonotic Diseases* 11: 883-889.

Stupica D, Lusa L, Ruzic-Sabljić E, Cerar T, Strle F (2012) Treatment of erythema migrans with doxycycline for 10 days versus 15 days. *Clinical Infectious Diseases* 55: 343-350.

Stupica D, Lusa L, Maraspin V, Bogovic P, Vidmar D, O'Rourke M, Traweger A, Livey I, Strle F (2015) Correlation of Culture Positivity, PCR Positivity, and Burden of *Borrelia burgdorferi* Sensu Lato in Skin Samples of Erythema Migrans Patients with Clinical Findings. *PLoS ONE* 10: e0136600.

Subak S (2002) Analysis of weather effects on variability in Lyme disease incidence in the northeastern United States. *Experimental and Applied Acarology* 28: 249-256.

Subak S (2003) Effects of climate on variability in Lyme disease incidence in the northeastern United States. *American Journal of Epidemiology* 157: 531-538.

Sundin M, Hansson ME, Engman ML, Orvell C, Lindquist L, Wide K, Lidfelt KJ (2012) Pediatric tick-borne infections of the central nervous system in an endemic region of Sweden: a prospective evaluation of clinical manifestations. *European Journal of Pediatrics* 171: 347-352.

Supanc V, Stojic I, Vargek-Solter V, Breitenfeld T, Roje-Bedekovic M, Demarin V (2012) Acute polyradiculoneuritis syndrome: clinical observations and differential diagnosis. *Acta Clinica Croatica* 51: 195-199.

Svihrova V, Hudeckova H, Jesenak M, Schwarzova K, Kostanova Z, Ciznar I (2011) Lyme borreliosis--analysis of the trends in Slovakia, 1999-2008. [Erratum appears in *Folia Microbiol (Praha)*. 2014 Jul;59(4):361]. *Folia Microbiologica* 56: 270-275.

Sykes RA, Makiello P (2016) An estimate of Lyme borreliosis incidence in Western Europe+. *Journal of Public Health* 9: 9.

Szanyi J, Kubova Z, Kremlacek J, Langrova J, Vit F, Kuba M, Szanyi J, Plisek S (2012) Pattern and motion-related visual-evoked potentials in neuroborreliosis: follow-up study. *Journal of Clinical Neurophysiology* 29: 174-180.

Szeszenia-Dabrowska N, Swiatkowska B, Wilczynska U (2016) Occupational diseases among farmers in Poland. *Medycyna Pracy* 67: 163-171.

Szonyi B, Srinath I, Esteve-Gassent M, Lupiani B, Ivanek R (2015) Exploratory spatial analysis of Lyme disease in Texas -what can we learn from the reported cases? *BMC Public Health* 15: 924.

Tabibi R, Baccalini R, Barassi A, Bonizzi L, Brambilla G, Consonni D, Melzi d'Eril G, Romano L, Sokooti M, Somaruga C, Vellere F, Zanetti A, Colosio C (2013) Occupational exposure to zoonotic agents among agricultural workers in Lombardy Region, northern Italy. *Annals of Agricultural and Environmental Medicine* 20: 676-681.

Talhari S, de Souza Santos MN, Talhari C, de Lima Ferreira LC, Silva RM, Jr., Zelger B, Massone C, Ribeiro-Rodrigues R (2010) *Borrelia burgdorferi* "sensu lato" in Brazil:

Occurrence confirmed by immunohistochemistry and focus floating microscopy. *Acta Tropica* 115: 200-204.

Taseva E, Gladnishka T, Trifonova I, Ivanova V, Christova I (2011) Neuroborreliosis in Bulgaria - Clinical manifestation and serological findings. *Clinical Microbiology and Infection* 17: S819.

Țățulescu D, Rădulescu A, Slavcovici A, Flonta M (2010) Diagnosis and treatment in patients with chronic Tick Associated Poly-Organic Syndrome (TAPOS) - a case series. *Scientia Parasitologica* 11: 38-43.

Tay ST, Kamalanathan M, Rohani MY (2002) Borrelia burgdorferi (strain B. afzelii) antibodies among Malaysian blood donors and patients. *Southeast Asian Journal of Tropical Medicine and Public Health* 33: 787-793.

Tee SI, Martinez-Escaname M, Zuriel D, Fried I, Wolf I, Massone C, Cerroni L (2013) Acrodermatitis chronica atrophicans with pseudolymphomatous infiltrates. *American Journal of Dermatopathology* 35: 338-342.

Thompson A, Bachur R (2007) Clinical predictors of Lyme disease among pediatric patients with acute monoarticular arthritis. *Society for Academic Emergency Medicine Annual Meeting*.

Thompson A, Mannix R, Bachur R (2009) Acute pediatric monoarticular arthritis: distinguishing Lyme arthritis from other etiologies. *Pediatrics* 123: 959-965.

Thompson AD, Cohn KA, Shah SS, Lyons T, Welsh EJ, Hines EM, Nigrovic LE (2012) Treatment complications in children with Lyme meningitis. *Pediatric Infectious Disease Journal* 31: 1032-1035.

Thorstrand C, Belfrage E, Bennet R, Malmberg P, Eriksson M (2002) Successful treatment of neuroborreliosis with ten day regimens. *Pediatric Infectious Disease Journal* 21: 1142-1145.

Tick Talk Ireland (2016) *Lyme Disease in Ireland Survey Results 2016*.
<http://eppi.ioe.ac.uk/eppireviewer4/getbin.aspx?U=9b7e73d7-f654-47e0-9ed2-4670b7a673e4&ID=7603&DID=284315>

Tilea B, Tripon G, Voidăzan S, Țilea I (2014) Serological, clinical and epidemiological aspects of Lyme borreliosis in Mures County, Romania. *Romanian Review of Laboratory Medicine* 22: 233-244.

Tinguely CH, Engler O, Niederhauser C, Fontana S, Tschaggelar A, Strasser M, Mutsch M (2011) Seroprevalence of antibodies to Borrelia burgdorferi in a healthy Swiss blood donor population. *Transfusion Medicine and Hemotherapy* 38: 44.

Tjernberg I, Kruger G, Eliasson I (2007) C6 peptide ELISA test in the serodiagnosis of Lyme borreliosis in Sweden. *European Journal of Clinical Microbiology & Infectious Diseases* 26: 37-42.

Tjernberg I, Schon T, Ernerudh J, Wistedt AC, Forsberg P, Eliasson I (2008) C6-peptide serology as diagnostic tool in neuroborreliosis. *APMIS* 116: 393-399.

Tjernberg I, Sillanpaa H, Seppala I, Eliasson I, Forsberg P, Lahdenne P (2009) Antibody responses to borrelia IR(6) peptide variants and the C6 peptide in Swedish patients with erythema migrans. *International Journal of Medical Microbiology* 299: 439-446.

Tjernberg I, Carlsson M, Ernerudh J, Eliasson I, Forsberg P (2010) Mapping of hormones and cortisol responses in patients after Lyme neuroborreliosis. *BMC Infectious Diseases* 10: 20.

Tjernberg I, Henningsson AJ, Eliasson I, Forsberg P, Ernerudh J (2011) Diagnostic performance of cerebrospinal fluid chemokine CXCL13 and antibodies to the C6-peptide in Lyme neuroborreliosis. *Journal of Infection* 62: 149-158.

Tkachev SE, Fomenko NV, Rar VA, Igolkina YP, Kazakova YV, Chernousova NY (2008) PCR-detection and molecular-genetic analysis of tick-transmitted pathogens in patients of Novosibirsk region, Russia. *International Journal of Medical Microbiology* 298: 365-367.

Tokarska-Rodak M, Niedzacute~wiadek J, Fota-Markowska H, Śmiechowicz F, Gajownik B, Modrzewska R, Koziol-Montewka M (2010) Antinuclear antibodies in patients with Lyme disease. *New Medicine* 14: 152-155.

Tomao P, Ciceroni L, D'Ovidio MC, De Rosa M, Vonesch N, Iavicoli S, Signorini S, Ciarrocchi S, Ciufolini MG, Fiorentini C, Papaleo B (2005) Prevalence and incidence of antibodies to *Borrelia burgdorferi* and to tick-borne encephalitis virus in agricultural and forestry workers from Tuscany, Italy. *European Journal of Clinical Microbiology & Infectious Diseases* 24: 457-463.

Topolovec J, Puntaric D, Antolovic-Pozgain A, Vukovic D, Topolovec Z, Milas J, Drusko-Barisic V, Venus M (2003) Serologically detected "new" tick-borne zoonoses in eastern Croatia. *Croatian Medical Journal* 44: 626-629.

Tory HO, Zurakowski D, Sundel RP (2010) Outcomes of children treated for Lyme arthritis: results of a large pediatric cohort. *Journal of Rheumatology* 37: 1049-1055.

Tothova SM, Bonin S, Trevisan G, Stanta G (2006) Mycosis fungoides: is it a *Borrelia burgdorferi*-associated disease? *British Journal of Cancer* 94: 879-883.

Townsend AK, Ostfeld RS, Geher KB (2003) The effects of bird feeders on Lyme disease prevalence and density of *Ixodes scapularis* (Acari: Ixodidae) in a residential area of Dutchess County, New York. *Journal of Medical Entomology* 40: 540-546.

Trajer A, Bobvos J, Paldy A, Krisztalovics K (2013) Association between incidence of Lyme disease and spring-early summer season temperature changes in Hungary--1998-2010. *Annals of Agricultural and Environmental Medicine* 20: 245-251.

Trajer A, Bede-Fazekas A, Hufnagel L, Bobvos J, Paldy A (2014) The paradox of the binomial Ixodes ricinus activity and the observed unimodal Lyme borreliosis season in Hungary. *International Journal of Environmental Health Research* 24: 226-245.

Tran P, Waller L (2015) Variability in results from negative binomial models for Lyme disease measured at different spatial scales. *Environmental Research* 136: 373-380.

Tran PM, Waller L (2013) Effects of landscape fragmentation and climate on Lyme disease incidence in the northeastern United States. *Ecohealth* 10: 394-404.

Trevisan G, Bonin S, Tothova S, Stanta G (2006) Possible involvement of *Borrelia burgdorferi* and HCV in the aethiology of mycosis fungoides. *Journal of Investigative Dermatology* 126: S28-S28.

Trifiletti RR (2010) Anti-flagellin antibodies in patients with PANDAS-like illnesses. *Annals of Neurology* 68: S130-S131.

Trifonova I, Christova I, Gladnishka T, Taseva E, Ivanova V (2010a) Clinical manifestations of Lyme borreliosis in Bulgaria - Comparison with tick studies. *Clinical Microbiology and Infection* 16: S711.

Trifonova I, Gladnishka T, Tasseva E, Ivanova V, Christova I (2010b) Human serum reactivity against *Borrelia* OspC, OspA, FlaB and VlsE protein antigens in early and disseminated Lyme borreliosis. *Problems of Infectious and Parasitic Diseases* 38: 11-14.

Trnovcova M, Bazovska S, Svecova D (2007) Antibodies to *Borrelia burgdorferi* in erythema migrans patients. *Bratislavske Lekarske Listy* 108: 399-402.

Tseng YJ, Cami A, Goldmann DA, DeMaria A, Jr., Mandl KD (2015a) Incidence and Patterns of Extended-Course Antibiotic Therapy in Patients Evaluated for Lyme Disease. *Clinical Infectious Diseases* 61: 1536-1542.

Tseng YJ, Cami A, Goldmann DA, DeMaria A, Jr., Mandl KD (2015b) Using Nation-Wide Health Insurance Claims Data to Augment Lyme Disease Surveillance. *Vector Borne and Zoonotic Diseases* 15: 591-596.

Tuerlinckx D, Bodart E, Garrino MG, de Bilderling G (2003) Clinical data and cerebrospinal fluid findings in Lyme meningitis versus aseptic meningitis. *European Journal of Pediatrics* 162: 150-153.

Tuerlinckx D, Bodart E, Jamart J, Glupczynski Y (2009) Prediction of Lyme meningitis based on a logistic regression model using clinical and cerebrospinal fluid analysis: a European study. *Pediatric Infectious Disease Journal* 28: 394-397.

Tuite AR, Greer AL, Fisman DN (2013) Effect of latitude on the rate of change in incidence of Lyme disease in the United States. *CMAJ open* 1: E43-47.

Tveitnes D, Oymar K, Natas O (2007) Acute facial nerve palsy in children: how often is it Lyme borreliosis? *Scandinavian Journal of Infectious Diseases* 39: 425-431.

Tveitnes D, Oymar K, Natas O (2009) Laboratory data in children with Lyme neuroborreliosis, relation to clinical presentation and duration of symptoms. *Scandinavian Journal of Infectious Diseases* 41: 355-362.

Tveitnes D, Natas OB, Skadberg O, Oymar K (2012) Lyme meningitis, the major cause of childhood meningitis in an endemic area: a population based study. *Archives of Disease in Childhood* 97: 215-220.

Tveitnes D, Oymar K (2015) Gender Differences in Childhood Lyme Neuroborreliosis. *Behavioural Neurology* 2015: 1-6.

Twizeyimana E, Pichard E, Lunel-Fabiani F, Fanello S, De Martino SJ (2014) Impact of serodiagnosis on the management of Lyme borreliosis at Angers University Hospital. *Medecine et Maladies Infectieuses* 44: 429-432.

Tylewska-Wierzbanska S, Chmielewski T (2002) Limitation of serological testing for Lyme borreliosis: evaluation of ELISA and western blot in comparison with PCR and culture methods. *Wiener Klinische Wochenschrift* 114: 601-605.

Uzzell D, Vasileiou K, Marcu A, Barnett J (2012) Whose Lyme is it anyway? Subject positions and the construction of responsibility for managing the health risks from Lyme disease. *Health & Place* 18: 1101-1109.

Valente SL, Wemple D, Ramos S, Cashman SB, Savageau JA (2015) Preventive behaviors and knowledge of tick-borne illnesses: results of a survey from an endemic area. *Journal of Public Health Management and Practice* 21: E16-23.

Valentine-Thon E, Ilsemann K, Weigel T (2004) Cellular immune reactivity to recombinant borrelia-specific antigens for improved laboratory diagnosis of Lyme borreliosis. *Journal of Molecular Diagnostics* 6: 155-155.

Van Burgel ND, Van Dam AP, Vossen ACTM (2009) Serologic validation of four western blots for diagnosis of *Borrelia burgdorferi* infection. *Antonie van Leeuwenhoek, International Journal of General and Molecular Microbiology* 95: 117.

van Burgel ND, Bakels F, Kroes AC, van Dam AP (2011a) Discriminating Lyme neuroborreliosis from other neuroinflammatory diseases by levels of CXCL13 in cerebrospinal fluid. *Journal of Clinical Microbiology* 49: 2027-2030.

van Burgel ND, Brandenburg A, Gerritsen HJ, Kroes AC, van Dam AP (2011b) High sensitivity and specificity of the C6-peptide ELISA on cerebrospinal fluid in Lyme neuroborreliosis patients. *Clinical Microbiology and Infection* 17: 1495-1500.

van den Wijngaard CC, Hofhuis A, Harms MG, Haagsma JA, Wong A, de Wit GA, Havelaar AH, Lugner AK, Suijkerbuijk AW, van Pelt W (2015) The burden of Lyme borreliosis expressed in disability-adjusted life years. *European Journal of Public Health* 25: 1071-1078.

Van Meensel B, Lontie M (2012) Evaluation of the new Vidas Lyme IgM and Vidas Lyme IgG kits as screening test for the serological diagnosis of Lyme borreliosis. *Clinical Microbiology and Infection* 18: 783-784.

van Velsen L, Beaujean DJ, Wentzel J, Van Steenberghe JE, van Gemert-Pijnen JE (2015) Developing requirements for a mobile app to support citizens in dealing with ticks and tick bites via end-user profiling. *Health Informatics Journal* 21: 24-35.

Vandenesch A, Turbelin C, Couturier E, Arena C, Jaulhac B, Ferquel E, Choumet V, Saugeon C, Coffinieres E, Blanchon T, Vaillant V, Hanslik T (2014) Incidence and hospitalisation rates of Lyme borreliosis, France, 2004 to 2012. *Euro Surveillance* 19: 28.

Vanthomme K, Bossuyt N, Boffin N, Van Casteren V (2012) Incidence and management of presumption of Lyme borreliosis in Belgium: recent data from the sentinel network of general practitioners. *European Journal of Clinical Microbiology & Infectious Diseases* 31: 2385-2390.

Vatne A, Mygland A, Ljostad U (2011) Multiple sclerosis in Vest-Agder County, Norway. *Acta Neurologica Scandinavica* 123: 396-399.

Vazquez-Lopez ME, Diez-Morrondo C, Sanchez-Andrade A, Pego-Reigosa R, Diaz P, Castro-Gago M (2015) Articular manifestations in patients with Lyme disease. *Reumatologia Clinica* 16: 16.

Vazquez M, Cartter ML, Shapiro ED (2003a) Accuracy of reporting of Lyme disease in Connecticut. *Pediatric Research* 53: 327A-327A.

Vazquez M, Cartter ML, Shapiro ED (2003b) Effectiveness of personal preventive measures for Lyme disease. *Pediatric Research* 53: 327A-327A.

Vazquez M, Sparrow SS, Shapiro ED (2003c) Long-term neuropsychologic and health outcomes of children with facial nerve palsy attributable to Lyme disease. *Pediatrics* 112: e93-97.

Vazquez M, Muehlenbein C, Cartter M, Hayes EB, Ertel S, Shapiro ED (2008) Effectiveness of personal protective measures to prevent Lyme disease. *Emerging Infectious Diseases* 14: 210-216.

Veley KM, Malka ES (2013) The geographic correlation between Lyme disease incidence and degenerative neurological disease mortality: An ecological study. *Value in Health* 16 (7): A340-A341.

Vermeersch P, Ressler S, Nackers E, Lagrou K (2009) The C6 Lyme antibody test has low sensitivity for antibody detection in cerebrospinal fluid. *Diagnostic Microbiology and Infectious Disease* 64: 347-349.

Verstreken I, Appeltans T, Verhaegen J, Lagrou K (2009) Evaluation of two line immunoassays for the detection of Borrelia antibodies. *Clinical Microbiology and Infection* 15: S675.

Vestrheim DF, White RA, Aaberge IS, Aase A (2016) Geographical differences in seroprevalence of Borrelia burgdorferi antibodies in Norway, 2011-2013. *Ticks and Tick-Borne Diseases* 7: 698-702.

VIRAS Survey (2014) NHS Testing and Investigation of Lyme Borreliosis - Patient Experiences Survey. http://counsellingme.com/VIRAS/SurveyNov30_9a.pdf

VIRAS Survey (2015) German Patient Survey 2015 results.

Volkova L, Ankudinova M, Prasdniczkova E (2005) Clinical and epidemiological peculiarities of mixt infection (MI) of Lyme disease (LD) and tick-borne encephalitis (TBE). *Journal of the Neurological Sciences* 238: S317-S317.

Volzke H, Werner A, Guertler L, Robinson D, Wallaschofski H, John U (2005) Putative association between anti-Borrelia IgG and autoimmune thyroid disease? *Thyroid* 15: 1273-1277.

Volzke H, Wolff B, Ludemann J, Guertler L, Kramer A, John U, Felix SB (2006) Seropositivity for anti-Borrelia IgG antibody is independently associated with carotid atherosclerosis. *Atherosclerosis* 184: 108-112.

von Baehr V, Doebis C, Volk HD, von Baehr R (2012) The lymphocyte transformation test for borrelia detects active Lyme borreliosis and verifies effective antibiotic treatment. *Open Neurology Journal* 6: 104-112.

Vrbova L, Middleton D (2006) Descriptive epidemiology of Lyme disease in Ontario: 1999-2004. *Canada Communicable Disease Report* 32: 247-257.

Vreede RW (2007) Usefulness of C6 peptide antibody assay in early localised Lyme borreliosis. *International Journal of Antimicrobial Agents* 29: S422-S422.

Vrethem M, Hellblom L, Widlund M, Ahl M, Danielsson O, Ernerudh J, Forsberg P (2002) Chronic symptoms are common in patients with neuroborreliosis -- a questionnaire follow-up study. *Acta Neurologica Scandinavica* 106: 205-208.

Waespe N, Steffen I, Heininger U (2010) Etiology of aseptic meningitis, peripheral facial nerve palsy, and a combination of both in children. *Pediatric Infectious Disease Journal* 29: 453-456.

Walder G, Tiwald G, Dierich MP, Wurzner R (2003) Serological evidence for human granulocytic ehrlichiosis in Western Austria. *European Journal of Clinical Microbiology & Infectious Diseases* 22: 543-547.

Walder G, Lkhamsuren E, Shagdar A, Bataa J, Batmunkh T, Orth D, Heinz FX, Danichova GA, Khasnatinov MA, Wurzner R, Dierich MP (2006) Serological evidence for tick-borne encephalitis, borreliosis, and human granulocytic anaplasmosis in Mongolia. *International Journal of Medical Microbiology* 296 Suppl 40: 69-75.

Waller LA, Goodwin BJ, Wilson ML, Ostfeld RS, Marshall SL, Hayes EB (2007) Spatio-temporal patterns in county-level incidence and reporting of Lyme disease in the northeastern United States, 1990-2000. *Environmental and Ecological Statistics* 14: 83-100.

Walter KS, Pepin KM, Webb CT, Gaff HD, Krause PJ, Pitzer VE, Diuk-Wasser MA (2016) Invasion of two tick-borne diseases across New England: harnessing human surveillance data to capture underlying ecological invasion processes. *Proceedings of the Royal Society of London Series B: Biological Sciences* 283: 15.

Wang L, Xie L, Dysinger AH, Zhang J, Shrestha S, Wang Y, Kariburyo MF, Baser O (2014) Assessing Lyme disease prevalence in the united states medicaid population. *Value in Health* 17 (3): A266-A267.

Warshafsky S, Lee DH, Francois LK, Nowakowski J, Nadelman RB, Wormser GP (2010) Efficacy of antibiotic prophylaxis for the prevention of Lyme disease: an updated systematic review and meta-analysis. *Journal of Antimicrobial Chemotherapy* 65: 1137-1144.

Weber K, Wilske B (2006) Mini erythema migrans--a sign of early Lyme borreliosis. *Dermatology* 212: 113-116.

Weiner ZP, Crew RM, Brandt KS, Ullmann AJ, Schriefer ME, Molins CR, Gilmore RD (2015) Evaluation of Selected *Borrelia burgdorferi* lp54 Plasmid-Encoded Gene Products Expressed during Mammalian Infection as Antigens To Improve Serodiagnostic Testing for Early Lyme Disease. *Clinical and Vaccine Immunology* 22: 1176-1186.

Weissenbacher S, Ring J, Hofmann H (2005) Gabapentin for the symptomatic treatment of chronic neuropathic pain in patients with late-stage Lyme borreliosis: a pilot study. *Dermatology* 211: 123-127.

Weisshaar E, Schaefer A, Scheidt RR, Bruckner T, Apfelbacher CJ, Diepgen TL (2006) Epidemiology of tick bites and borreliosis in children attending kindergarten or so-called "forest kindergarten" in southwest Germany. *Journal of Investigative Dermatology* 126: 584-590.

Weitzner E, McKenna D, Nowakowski J, Scavarda C, Dornbush R, Bittker S, Cooper D, Nadelman RB, Visintainer P, Schwartz I, Wormser GP (2015) Long-term Assessment of Post-Treatment Symptoms in Patients With Culture-Confirmed Early Lyme Disease. *Clinical Infectious Diseases* 61: 1800-1806.

Weitzner E, Visintainer P, Wormser GP (2016) Comparison of males versus females with culture-confirmed early Lyme disease at presentation and at 11-20 years after diagnosis. *Diagnostic Microbiology and Infectious Disease* 85: 493-495.

Welsh EJ, Cohn KA, Nigrovic LE, Thompson AD, Hines EM, Lyons TW, Glatz AC, Shah SS (2012) Electrocardiograph Abnormalities in Children with Lyme Meningitis. *Journal of the Pediatric Infectious Diseases Society* 1: 293-298.

White B, Seaton RA, Evans TJ (2013) Management of suspected Lyme borreliosis: experience from an outpatient parenteral antibiotic therapy service. *QJM* 106: 133-138.

Widhe M, Jarefors S, Ekerfelt C, Vrethem M, Bergstrom S, Forsberg P, Ernerudh J (2004) Borrelia-specific interferon-gamma and interleukin-4 secretion in cerebrospinal fluid and blood during Lyme borreliosis in humans: association with clinical outcome. *Journal of Infectious Diseases* 189: 1881-1891.

Wilhelmsson P, Fryland L, Lindblom P, Sjowall J, Ahlm C, Berglund J, Haglund M, Henningson AJ, Nolskog P, Nordberg M, Nyberg C, Ornstein K, Nyman D, Ekerfelt C, Forsberg P, Lindgren PE (2016) A prospective study on the incidence of *Borrelia burgdorferi* sensu lato infection after a tick bite in Sweden and on the Aland Islands, Finland (2008-2009). *Ticks and Tick-Borne Diseases* 7: 71-79.

Wilkning H, Stark K (2014) Trends in surveillance data of human Lyme borreliosis from six federal states in eastern Germany, 2009-2012. *Ticks and Tick-Borne Diseases* 5: 219-224.

Wilkning H, Fingerle V, Klier C, Thamm M, Stark K (2015) Antibodies against *Borrelia burgdorferi* sensu lato among Adults, Germany, 2008-2011. *Emerging Infectious Diseases* 21: 107-110.

Willis AA, Widmann RF, Flynn JM, Green DW, Onel KB (2003) Lyme arthritis presenting as acute septic arthritis in children. *Journal of Pediatric Orthopaedics* 23: 114-118.

Wills AB, Spaulding AB, Adjemian J, Prevots DR, Turk SP, Williams C, Marques A (2016) Long-term Follow-up of Patients With Lyme Disease: Longitudinal Analysis of Clinical and Quality-of-life Measures. *Clinical Infectious Diseases* 62: 1546-1551.

Winter Y, Grunig S, Bodechtel U, Guthke K, Khati D, Oertel W, Von Kummer R, Back T (2013) Incidence of neuroborreliosis-associated cerebral vasculitis in Germany. *Neuroepidemiology* 41: 248.

Witak-Jędra M, Niścigorska-Olsen J, Kotowicz-Laurans A, Parczewski M (2013) The analysis of the course of early localized Lyme disease among patients of the infectious diseases clinic in Szczecin. *Acta Scientiarum Polonorum seria Zootechnica* 12: 79-88.

Wittwer B, Pelletier S, Ducrocq X, Maillard L, Mione G, Richard S (2015) Cerebrovascular Events in Lyme Neuroborreliosis. *Journal of Stroke and Cerebrovascular Diseases* 24: 1671-1678.

Wojciechowska-Koszko I, Maczynska I, Szych Z, Giedrys-Kalemba S (2011) Serodiagnosis of borreliosis: indirect immunofluorescence assay, enzyme-linked immunosorbent assay and immunoblotting. *Archivum Immunologiae et Therapiae Experimentalis* 59: 69-77.

Woo EJ, Burwen DR, Gatumu SNM, Ball R (2003) Extensive limb swelling after immunization: Reports to the Vaccine Adverse Event Reporting System. *Clinical Infectious Diseases* 37: 351-358.

World Health Organization (2004) *Waterborne Zoonoses*. World Health Organization. http://www.who.int/water_sanitation_health/diseases/zoonoses.pdf

Wormser Gary P, Weitzner E, McKenna D, Nadelman Robert B, Scavarda C, Farber S, Prakash P, Ash J, Nowakowski J (2015) Brief Report: Long-Term Assessment of Fibromyalgia in Patients With Culture-Confirmed Lyme Disease. *Arthritis and Rheumatology* 67: 837-839.

Wormser GP, Ramanathan R, Nowakowski J, McKenna D, Holmgren D, Visintainer P, Dornbush R, Singh B, Nadelman RB (2003) Duration of antibiotic therapy for early Lyme disease. A randomized, double-blind, placebo-controlled trial. *Annals of Internal Medicine* 138: 697-704.

Wormser GP, McKenna D, Carlin J, Nadelman RB, Cavaliere LF, Holmgren D, Byrne DW, Nowakowski J (2005) Brief communication: hematogenous dissemination in early Lyme disease. [Summary for patients in *Ann Intern Med*. 2005 May 3;142(9):148; PMID: 15867401]. *Annals of Internal Medicine* 142: 751-755.

Wormser GP, Liveris D, Hanincova K, Brisson D, Ludin S, Stracuzzi VJ, Embers ME, Philipp MT, Levin A, Aguerro-Rosenfeld M, Schwartz I (2008a) Effect of *Borrelia burgdorferi*

genotype on the sensitivity of C6 and 2-tier testing in North American patients with culture-confirmed Lyme disease. *Clinical Infectious Diseases* 47: 910-914.

Wormser GP, Nowakowski J, Nadelman RB, Visintainer P, Levin A, Aguero-Rosenfeld ME (2008b) Impact of clinical variables on *Borrelia burgdorferi*-specific antibody seropositivity in acute-phase sera from patients in North America with culture-confirmed early Lyme disease. *Clinical and Vaccine Immunology* 15: 1519-1522.

Wormser GP, Shapiro ED (2009) Implications of gender in chronic Lyme disease. *Journal of Women's Health* 18: 831-834.

Wormser GP, Aguero-Rosenfeld ME, Cox ME, Nowakowski J, Nadelman RB, Holmgren D, McKenna D, Bittker S, Zentmaier L, Cooper D, Liveris D, Schwartz I, Horowitz HW (2013a) Differences and similarities between culture-confirmed human granulocytic anaplasmosis and early Lyme disease. *Journal of Clinical Microbiology* 51: 954-958.

Wormser GP, Levin A, Soman S, Adenikinju O, Longo MV, Branda JA (2013b) Comparative cost-effectiveness of two-tiered testing strategies for serodiagnosis of Lyme disease with noncutaneous manifestations. *Journal of Clinical Microbiology* 51: 4045-4049.

Wormser GP, Schriefer M, Aguero-Rosenfeld ME, Levin A, Steere AC, Nadelman RB, Nowakowski J, Marques A, Johnson BJ, Dumler JS (2013c) Single-tier testing with the C6 peptide ELISA kit compared with two-tier testing for Lyme disease. *Diagnostic Microbiology and Infectious Disease* 75: 9-15.

Wormser GP, Tang AT, Schimmoeller NR, Bittker S, Cooper D, Visintainer P, Aguero-Rosenfeld ME, Ogrinc K, Strle F, Stanek G (2014) Utility of serodiagnostics designed for use in the United States for detection of Lyme borreliosis acquired in Europe and vice versa. *Medical Microbiology and Immunology* 203: 65-71.

Wormser GP, Weitzner E, McKenna D, Nadelman RB, Scavarda C, Molla I, Dornbush R, Visintainer P, Nowakowski J (2015a) Long-term assessment of health-related quality of life in patients with culture-confirmed early Lyme disease. *Clinical Infectious Diseases* 61: 244-247.

Wormser GP, Weitzner E, McKenna D, Nadelman RB, Scavarda C, Nowakowski J (2015b) Long-term assessment of fatigue in patients with culture-confirmed Lyme disease. *American Journal of Medicine* 128: 181-184.

Wressnigg N, Pollabauer EM, Aichinger G, Portsmouth D, Low-Baselli A, Fritsch S, Livey I, Crowe BA, Schwendinger M, Bruhl P, Pilz A, Dvorak T, Singer J, Firth C, Luft B, Schmitt B, Zeitlinger M, Muller M, Kollaritsch H, Paulke-Korinek M, Esen M, Kremsner PG, Ehrlich HJ, Barrett PN (2013) 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. *The Lancet Infectious Diseases* 13: 680-689.

Wressnigg N, Barrett PN, Pollabauer EM, O'Rourke M, Portsmouth D, Schwendinger MG, Crowe BA, Livey I, Dvorak T, Schmitt B, Zeitlinger M, Kollaritsch H, Esen M, Kremsner PG, Jelinek T, Aschoff R, Weisser R, Naudts IF, Aichinger G (2014) A Novel multivalent OspA vaccine against Lyme borreliosis is safe and immunogenic in an adult population previously infected with *Borrelia burgdorferi sensu lato*. *Clinical and Vaccine Immunology* 21: 1490-1499.

Wu T, Wang W, Chen S, Qin N, Zhang J, Li P, Li J (2013) Preliminary survey of ticks and tick-borne pathogens in Tianjin, China. *Zhongguo Meijie Shengwuxue ji Kongzhi Zazhi* 24: 246-248.

Wutte N, Berghold A, Loffler S, Zenz W, Daghofer E, Krainberger I, Kleinert G, Aberer E (2011) CXCL13 chemokine in pediatric and adult neuroborreliosis. *Acta Neurologica Scandinavica* 124: 321-328.

Wutte N, Archelos J, Crowe BA, Zenz W, Daghofer E, Fazekas F, Aberer E (2014) Laboratory diagnosis of Lyme neuroborreliosis is influenced by the test used: comparison of two ELISAs, immunoblot and CXCL13 testing. *Journal of the Neurological Sciences* 347: 96-103.

Xue L, Scoglio C, McVey DS, Boone R, Cohnstaedt LW (2015) Two Introductions of Lyme Disease into Connecticut: A Geospatial Analysis of Human Cases from 1984 to 2012. *Vector Borne and Zoonotic Diseases* 15: 523-528.

Yagodina A (2007) The level of morbidity of Lyme borreliosis after antibiotic preventive treatment. *International Journal of Antimicrobial Agents* 29: S420-S420.

Yakovlev AE, Padilla A (2010) Treatment of intractable headaches associated with Lyme disease using neuromodulation techniques. *Pain Medicine* 11 (2): 305-306.

Zajkowska J, Hermanowska-Szpakowicz T, Coyle P, Ostrowska J, Pancewicz S, Kondrusik M (2002) Comparative study of early Lyme disease: Erythema migrans in New York State and Northeastern Poland. *Medical Science Monitor* 8: CR37-43.

Zajkowska J, Kondrusik M, Pancewicz SA, Sienkiewicz I, Grygorczuk S, Swierzbinska R, Hermanowska-Szpakowicz T (2006) Laboratory diagnosis of early Lyme borreliosis - comparison of ELISA, Western blot (EcoLine), and PCR results. *International Journal of Medical Microbiology* 296: 291-293.

Zajkowska J, Kondrusik M, Grygorczuk S, Pancewicz S, Izycka A (2008) The usefulness of 'in vivo' antigens in the diagnosis of human Lyme borreliosis. *International Journal of Medical Microbiology* 298: 361-364.

Zakutna L, Dorko E, Mattova E, Rimarova K (2015a) Sero-epidemiological study of Lyme disease among high-risk population groups in eastern Slovakia. *Annals of Agricultural and Environmental Medicine* 22: 632-636.

Zakutna L, Dorko E, Rimarova K, Kizekova M (2015b) Pilot Cross-Sectional Study of Three Zoonoses (Lyme Disease, Tularaemia, Leptospirosis) among Healthy Blood Donors in Eastern Slovakia. *Central European Journal of Public Health* 23: 100-106.

Zalewska M, Wałamaniuk M, Pawińska M, Szpak A, Huzarska D, Komorowska E (2008) Workplace health threats and their effects in Podlasie region. *Polish Journal of Environmental Studies* 17: 797-800.

Zeman P, Benes C (2013) Spatial distribution of a population at risk: an important factor for understanding the recent rise in tick-borne diseases (Lyme borreliosis and tick-borne encephalitis in the Czech Republic). *Ticks and Tick-Borne Diseases* 4: 522-530.

Zeman P, Benes C (2014) Peri-urbanisation, counter-urbanisation, and an extension of residential exposure to ticks: a clue to the trends in Lyme borreliosis incidence in the Czech Republic? *Ticks and Tick-Borne Diseases* 5: 907-916.

Zeman P, Benes C, Markvart K (2015) Increasing Residential Proximity of Lyme Borreliosis Cases to High-Risk Habitats: A Retrospective Study in Central Bohemia, the Czech Republic, 1987-2010. *Ecohealth* 12: 519-522.

Zhang L, Cui F, Wang L, Zhang L, Zhang J, Wang S, Yang S (2011) Investigation of anaplasmosis in Yiyuan County, Shandong Province, China. *Asian Pacific Journal of Tropical Medicine* 4: 568-572.

Zhang L, Zhu X, Hou X, Geng Z, Chen H, Hao Q (2015) Test of 259 serums from patients with arthritis or neurological symptoms confirmed existence of Lyme disease in Hainan province, China. *International journal of clinical and experimental medicine* 8: 9531-9536.

Zhang X, Meltzer MI, Pena CA, Hopkins AB, Wroth L, Fix AD (2006) Economic impact of Lyme disease. *Emerging Infectious Diseases* 12: 653-660.

Zhang Y, Wang S, Ji G, Dong Z (2013) An MR brain images classifier system via particle swarm optimization and kernel support vector machine. *TheScientificWorldJournal* 2013: 1-9.

Zhao H, Bao FF, Liu A (2017) Safety, immunogenicity, and efficacy of *Borrelia burgdorferi* outer surface protein A (OspA) vaccine: A meta-analysis. *Journal of Infection in Developing Countries* 11: 1-9.

Zibit M, Murphy EA, Glass R, Maher NE, Shadick NA (2006) Components of the health belief model are determinants of Lyme disease preventive behavior among school-aged children in an endemic area of Massachusetts. *Arthritis and Rheumatism* 54: S767-S767.

Ziemer M, Grabner T, Eisendle K, Baltaci M, Zelger B (2008) Granuloma annulare--a manifestation of infection with Borrelia? *Journal of Cutaneous Pathology* 35: 1050-1057.

Zinchuk AN, Kalyuzhna LD, Pasichna IA (2016) Is Localized Scleroderma Caused by Borrelia burgdorferi? *Vector Borne and Zoonotic Diseases* 7: 7.

Zjevikova A, Vankova D, Golkova A (2009) Observation of Children of Mothers Who Underwent Borreliosis in The Course of Pregnancy. *8th International Congress on Coronary Artery Disease: New Approaches in Coronary Artery Disease*.

Zoldi V, Juhasz A, Nagy C, Papp Z, Egyed L (2013) Tick-borne encephalitis and Lyme disease in Hungary: the epidemiological situation between 1998 and 2008. *Vector Borne and Zoonotic Diseases* 13: 256-265.

Zollinger T, Mertz KD, Schmid M, Schmitt A, Pfaltz M, Kempf W (2010) Borrelia in granuloma annulare, morphea and lichen sclerosus: a PCR-based study and review of the literature. *Journal of Cutaneous Pathology* 37: 571-577.

Zotter S, Koch J, Schlachter K, Katzensteiner S, Dorninger L, Brunner J, Baumann M, Wolf-Magele A, Schmid H, Ulmer H, Hagspiel S, Rostasy K (2013) Neuropsychological profile of children after an episode of neuroborreliosis. *Neuropediatrics* 44: 346-353.