Reply to Greenberg

TO THE EDITOR—We thank Dr Greenberg for her interest in our study on the health-related quality of life (HRQOL) of US patients with culture-confirmed erythema migrans, that is, early Lyme disease [1]. We assessed 100 patients using the 36-item short-form general health survey (SF-36), version 2, at 11–20 years after diagnosis and treatment. Our findings demonstrated that, on average, the HRQOL of our patients was similar to that of the general population [2]. This result was found despite the fact that at least 24% of our patients were reinfected and experienced a second episode of early Lyme disease with erythema migrans before the HRQOL assessment was performed. Moreover, our findings closely resembled those from a prior study that assessed the long-term HRQOL of 25 patients with erythema migrans [3].

Dr Greenberg is concerned that those who underwent the SF-36 testing had fewer symptoms (approximately 1 less symptom on average) on study entry than those who did not participate in this assessment; a point that we had clearly acknowledged. However, in addition, she states that our 100 study participants were also otherwise healthier; we are unaware of the basis for this statement.

Subsequent additional analysis of our study data should allay some of Dr Greenberg’s concerns. The most relevant factor in regard to the long-term HRQOL outcome of Lyme disease patients is how many of such patients have post-treatment Lyme disease symptoms (PTLDS) and how severe are these symptoms. In 8 US studies of patients with erythema migrans, the
median frequency of PTLDS at ≥6 months was 11.5% [4]. In our 100 patients, the frequency of PTLDS was 12%, which provides objective evidence that, with regard to this parameter, our patients were similar to other reported cases of early Lyme disease. Of note, only 5 of our 100 patients still had PTLDS at the time of the SF-36 assessment, and none of these 5 patients were functionally impaired by these symptoms based on direct questioning.

We do agree with Dr Greenberg on the desirability of additional studies on the long-term outcome of both early and later manifestations of Lyme disease.

**Note**

**Potential conflicts of interest.** G. P. W. reports receiving research grants from Immunetics, Inc., the Institute for Systems Biology, Rarecyte, Inc., and bioMérieux SA. He owns equity in Abbott; has been an expert witness in malpractice cases involving Lyme disease; is an unpaid board member of the American Lyme Disease Foundation; has been an expert witness regarding Lyme disease in a disciplinary action for the Missouri Board of Registration for the Healing Arts; and was a consultant to Baxter for Lyme disease vaccine development. All other authors report no potential conflicts.

All authors have submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest. Conflicts that the editors consider relevant to the content of the manuscript have been disclosed.

Gary P. Wormser,1 Erica Weitzner,1 Rhea Dornbush,2 and Paul Visintainer3

1Division of Infectious Diseases, and 2Department of Psychiatry, New York Medical College, Valhalla, New York; and 3Baystate Medical Center, Springfield, Massachusetts

**References**


Correspondence: Gary P. Wormser, MD, New York Medical College, Division of Infectious Diseases, 40 Sunshine Cottage Rd, Skyline Office #2N-C20, Valhalla, NY 10595 (gwormser@nymc.edu).

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