

# Lyme Disease May Increase Risk of Severe COVID-19

*News Medical* covered a study that was recently published in the preprint server *Research Square* in which researchers report that those who have had a *Borrelia burgdorferi* infection are at greater risk for severe COVID-19/SARS-CoV-2.\*



A Microblot-Array for *Borrelia* species was used to analyze three patient groups: severe COVID-19 (hospitalized); mild or asymptomatic COVID-19 (treated at home or unaware of infection); and not infected with SARS-CoV-2.

Results indicate that heightened levels of *Borrelia*-specific IgG antibodies correlated strongly with severe cases of COVID-19, including need to be hospitalized. Testing showed that all 31 patients that were hospitalized because of COVID-19 were also positive for *Borrelia burgdorferi*-specific IgG. Of 28 patients with asymptomatic or mild COVID-19, 19 were found to be positive with *Bb* IgG. Of those never infected and in the participant group that had never been infected with SARS-CoV-2, only 8 positive *Bb* cases were found out of a total of 28.

Additionally, 6 out of 19 *Borrelia* antigens (VlsE *B. garinii*, p41 *B. burgdorferi* sensu stricto, OspB, OspA *B. burgdorferi* sensu stricto, OspC *B. garinii*, and OspC *B. burgdorferi* sensu stricto) were tested showing that patients with severe COVID-19 had considerably higher serum levels for these specific IgG than any other patient group. Of an additional 10 *Borrelia* antigens (VlsE *B. afzelii*, VlsE *B.*

*burgdorferi* sensu stricto, p58, p41 *B. afzelii*, p39, OspA *B. garinii*, OspC *B. afzelii*, OspC *B. spielmanii*, Nap A and p17), patients with severe COVID-19 also showed much higher IgG serum levels than the participants with no SARS-CoV-2 infection. These findings demonstrate that previous exposure to *Borrelia* predisposes patients with SARS-CoV-2 infections to be more susceptible of severe disease outcomes.

Specific mechanisms of this association are not yet understood. The researchers suggest that screening for *Borrelia burgdorferi* antibodies could aid in better assessing the probability of severe infection in SARS-CoV-2 patients.

*\*Note this is a preprint and is in the process of being peer-reviewed.*

Read the full article in *Research Square*.

Read coverage of the study on *News Medical*.

Read more about COVID and Lyme disease.