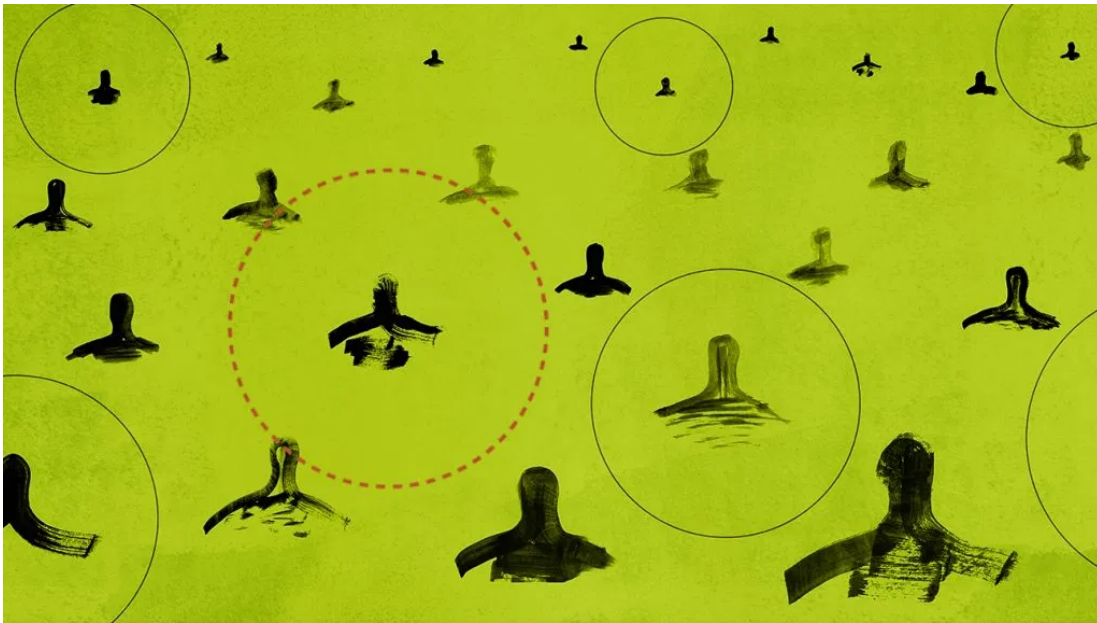




B.1.1.7 variant: Increased transmissibility but not greater severity

Written by Lori Uildriks on April 22, 2021 — Fact checked by Alexandra Sanfins, Ph.D.



Two new studies investigate the B.1.1.7 variant. Sloop Communications/Getty Images

- **A study of patients with SARS-CoV-2 infection admitted to two United Kingdom hospitals found that the B.1.1.7 variant does not appear to increase disease severity but may increase transmissibility.**
- **Another study in the U.K., using self-reported data from the COVID Symptom Study app, demonstrated no changes in reported symptoms or disease duration associated with the B.1.1.7 variant.**
- **Further research and ongoing tracking of SARS-CoV-2 variants**

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Viruses, including SARS-CoV-2, naturally mutate over time, producing new variants capable of spreading faster.

Sometimes, these mutations may impact the virus's ability to spread or affect disease severity. A [variant of concern](#) shows evidence of:

- increased transmissibility
- greater disease severity
- a substantial decrease in the neutralization of virus by antibodies from vaccination or past infection
- decreased protective effect of vaccines from severe disease

The current variants of concern in the United States include the B.1.1.7, B.1.351, P.1, B.1.427, and B.1.429 variants. Read more about SARS-CoV-2 variants [here](#).

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SARS-CoV-2 B.1.1.7 variant

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transmission, death, and hospitalization with the B.1.1.7 variant based on limited available data.

The findings of two recently published studies provide additional data that differs from original studies regarding the B.1.1.7 variant.

The study, which appears in [The Lancet Infectious Diseases](#)[✓], investigated the clinical severity and transmissibility of B.1.1.7 variant SARS-CoV-2 infections versus non-B.1.1.7 infections.

The study performed whole-genome sequencing of SARS-CoV-2 to identify the variant of concern in 341 patients positive for SARS-CoV-2 infection. The patients were in the University College London Hospital and North Middlesex University Hospital, both in the U.K., from November 9 to December 10, 2020. The study's time period coincided with the emergence and spread of the B.1.1.7 variant in England.

In all, 58% of the people included in the study had contracted the B.1.1.7 variant, while 42% had not. The study found no association for increased risk of severe disease or death with the B.1.1.7 variant.

The study identified that approximately 36% of patients with B.1.1.7 and 38% with non-B.1.1.7 infection had developed severe disease within 14 days of symptoms or a positive test.

The researchers found that 16% of patients with severe B.1.1.7 infection died within 28 days, compared with 17% of people with severe non-B.1.1.7 infection.

However, they also identified a significantly greater viral load (the amount of virus present in a person's blood) in the B.1.1.7 group versus the non-B.1.1.7 group, which supports the theory that the B.1.1.7 variant is more transmissible.

Dr. Eleni Nastouli from the University College of London Hospitals National Health Service (NHS) Foundation Trust comments on the strengths of the study:

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“Analyzing the variant before the peak of hospital admissions and any associated strains on the health service gave us a crucial window of time to gain vital insights into how B.1.1.7 differs in severity or death in hospitalized patients from the strain of the first wave.”

The study does have certain limitations, though. For instance, they could not account for differences in treatments or medications between groups, such as steroids, convalescent plasma, or antivirals, which may have affected outcomes.

Additionally, 14 days may have been an inadequate time frame to assess disease severity.

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Public health implications

Dr. Nastouli adds, “We hope that this study provides an example of how such studies can be done for the benefit of patients throughout the NHS. As more variants continue to emerge, using this approach could help us better understand their key characteristics and any additional challenges that they may pose to public health.”

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A second study, which appears in *The Lancet Public Health*[✓], examined the relationship between increases in infection rates with the B.1.1.7 variant and differences in symptomatology, reinfection, and transmissibility.

The study collected data from 36,920 users of the COVID Symptom Study app with a positive test for COVID-19 between September 28 and December 27, 2020.

The presence of two positive tests separated by more than 90 days with no symptoms for more than 7 days before the second test provided an estimate of the rate of possible reinfection.

The study estimated the proportion of SARS-CoV-2 variant infections using data from the COVID-19 Genomics U.K. Consortium and Public Health England.

The study found no changes in reported symptoms or disease duration associated with the B.1.1.7 variant. Additionally, the study identified 249 possible reinfections in 36,509 app users who reported a positive swab test before Oct 1, 2020. However, there was no difference in the infection rate between the B.1.1.7 and the non-B.1.1.7 infection groups.

The study demonstrated a 1.35 times increase in transmissibility associated with the B.1.1.7 variant. However, this rate decreased during local and national lockdowns.

Limitations of the study include possible errors due to self-reporting and lack of information on the disease strain of the individual.

Dr. Mark Graham, from King's College, London, U.K., comments on the study findings:

“The wealth of data captured by the COVID Symptom Study app provided a unique opportunity to look for potential changes in symptoms and length of illness associated with the B.1.1.7. variant. Reassuringly, our findings suggest that, despite being more easily

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