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# No evidence of change in symptoms from new coronavirus variant

The latest analysis of symptom data by researchers from King's shows no significant differences in COVID-19 symptom type, severity, or duration of the disease caused by the new B.1.1.7 coronavirus variant.



First identified in September 2020 in the South East of England, the B.1.1.7 variant has spread rapidly through the UK and elsewhere.

The research study confirms that the new variant is more transmissible, but it does not appear to cause more reinfections or a greater proportion of hospitalisations. Reassuringly, the data from also showed that B.1.1.7 has responded to national lockdown measures, with cases falling significantly even in regions with very high prevalence.

To find out whether this new version of the virus is affecting the COVID-19 symptoms that people experience, researchers led by Professor Sebastien Ourselin, Head of School at School of Biomedical Engineering & Imaging Sciences and Dr Claire Steves from King's analysed more than 65 million health reports submitted to the ZOE COVID Symptom Study app by 1.76 million users between 28th September and 27th December 2020.

This is the period when the new variant was spreading through the population, mainly in London, South East England and the East of England. Nearly half a million users reported having had a coronavirus swab test during this time, with 55,192 reporting a positive result.

The researchers looked at how many people reported experiencing any of the 14 key symptoms of COVID-19, the total number of symptoms reported by each individual (an indicator of the severity of their illness) and whether symptoms lasted 28 days or more. They also counted self-reported

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They then cross-matched this information against the estimated prevalence of the new variant in Scotland, Wales and seven English NHS regions based on data from the COG-UK genomic surveillance programme and the Public Health England testing service.

After adjusting the data to account for age and sex, as well as local temperature and humidity, analysis showed that there were no significant differences in the type, number or duration of symptoms between areas with a high prevalence of B.1.1.7 compared with those with a lower prevalence and that this did not change as the new variant spread. There was also no difference in the proportion of reported hospitalisations and reinfections.

The researchers identified 249 likely cases of reinfection during the study period, representing a reinfection rate of 0.7% which is comparable with previous studies of earlier virus variants. This is a positive sign that the immunity built through vaccination against the older variants could also be protective against B.1.1.7.

Finally, the researchers confirmed that the new variant is more easily transmitted than existing virus versions, increasing the **R value** (a measure of transmissibility) by around a third (35%).

*“ While it is concerning that the B.1.1.7 variant is much more transmissible than other variants, it is reassuring that the new strain has responded well to lockdown. We estimate R is currently between 0.8-0.9 in the three regions with the highest proportion of B.1.1.7: London, the South East and the South West, meaning that the outbreak is currently declining.*

– Joint first author, Mark Graham from the School of Biomedical Engineering & Imaging Sciences

Dr Claire Steves from the School of Life Course Sciences said: “The Kent variant B.1.1.7 does not appear to alter symptoms, severity or duration of COVID-19 when we take account of the changing seasons and age of people affected. It’s important to emphasise the range of symptoms both the new and the old variant can cause, such as headaches and sore throat, in addition to the classic triad of cough, fever and loss of smell.”

Professor Tim Spector OBE from the School of Life Course Sciences said: “A key question was whether immunity would be lost with the new strain. Our analysis found that of every 1,000 people previously infected with the virus, only 7 got reinfected and this rate was not affected by the new Kent variant. It’s reassuring that reinfections are still really rare many months after previous infection, suggesting that both natural immunity and vaccines will be effective against this new strain. This research highlights the unique value of the ZOE app in understanding the impact of new coronavirus variants across the population in a matter of weeks, and we need our app users to help us maintain vigilance against further new strains as they emerge.”

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**Claire Steves**

Senior Clinical Lecturer



**Tim Spector**

Professor of Genetic Epidemiology

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