

Early COVID-19 symptoms differ among age groups, research finds

July 30 2021



Credit: Pixabay/CC0 Public Domain

Symptoms for early COVID-19 infection differ among age groups and between men and women, new research has found.

These differences are most notable between younger [age groups](#) (16-59 years) compared to older age groups (60->80 years), and men have different symptoms compared to women in the early stages of COVID-19 infection.

The paper, published today in the *Lancet Digital Health*, and led by researchers from King's analyzes data from the ZOE COVID Symptom Study app between April 20th to 15th October 2020. App contributors are invited to get tested as soon as they report any new symptoms, thanks to a joint initiative with the Department of Health and Social Care. The researchers modeled the early signs of COVID-19 infection and successfully detected 80% of cases when using three days of self-reported symptoms.

Researchers compared the ability to predict early signs of COVID-19 infection using current National Health Service UK [diagnostic criteria](#) and a Hierarchical Gaussian Process model, a type of machine learning.

This machine learning model was able to incorporate some characteristics about the person affected, such as age, sex, and health conditions, and showed that symptoms of early COVID-19 infection are different among various groups.

18 symptoms were examined, which had different relevance for early detection in different groups. The most important symptoms for earliest detection of COVID-19 overall included loss of smell, chest pain, persistent cough, abdominal pain, blisters on the feet, eye soreness and unusual muscle pain. However, loss of smell lost significance in people over 60 years of age and was not relevant for subjects over 80. Other early symptoms such as diarrhea were key in older age groups (60-79 and >80). Fever, while a known symptom of disease, was not an early feature of the disease in any age group.

Men were more likely to report shortness of breath, fatigue, chills and fever, whereas women were more likely to report loss of smell, chest pain and a persistent cough.

While these models were generated in the COVID Symptom study app, models were replicated across time suggesting they would also apply to non-app contributors. Although the models were used on the first strain of the virus and Alpha variants, the key findings suggest the symptoms of the Delta variant and subsequent variants will also differ across population groups.

"It's important people know the earliest symptoms are wide-ranging and may look different for each member of a family or household," says lead author, Claire Steves, Reader from the School of Life Course Sciences. "Testing guidance could be updated to enable cases to be picked up earlier, especially in the face of new variants which are highly transmissible. This could include using widely available lateral flow tests for people with any of these non-core symptoms."

Dr Liane dos Santos Canas, first author from the School of Biomedical Engineering & Imaging Sciences, said that "currently, in the UK, only a few symptoms are used to recommend self-isolation and further testing. Using a larger number of symptoms and only after a few days of being unwell, using AI, we can better detect COVID-19 positive cases. We hope such a method is used to encourage more people to get tested as early as possible to minimize the risk of spread."

Dr Marc Modat, Senior Lecturer from the School of Biomedical Engineering & Imaging Sciences, said that "as part of our study, we have been able to identify that the profile of symptoms due to COVID-19 differs from one group to another. This suggests that the criteria to encourage people to get tested should be personalized using individuals' information such as age. Alternatively, a larger set of [symptoms](#) could be

considered, so the different manifestations of the disease across different groups are taken into account."

More information: Liane S Canas et al, Early detection of COVID-19 in the UK using self-reported symptoms: a large-scale, prospective, epidemiological surveillance study, *The Lancet Digital Health* (2021). [DOI: 10.1016/S2589-7500\(21\)00131-X](https://doi.org/10.1016/S2589-7500(21)00131-X)

Provided by King's College London

Citation: Early COVID-19 symptoms differ among age groups, research finds (2021, July 30) retrieved 28 April 2024 from <https://medicalxpress.com/news/2021-07-early-covid-symptoms-differ-age.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.