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Risk factors and symptom clusters for Long Covid: A retrospective cohort study using data from the Covid symptom tracker app.

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Covid symptom tracker app

Created by Kings College London and app developer ZOE.

Health status +/- symptoms can be logged each day

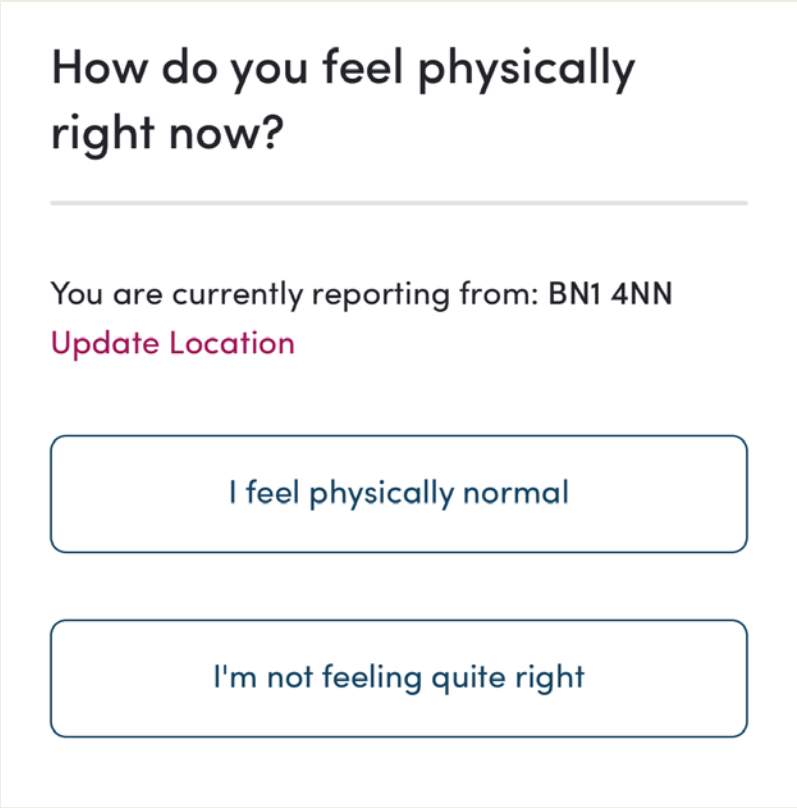
Launched 24th March 2020

Downloaded by 4 million people

Covid tests, vaccines recorded

Medical history and demographics

Our sample: 4040 people



SAIL DATABANK

What is Long Covid?

Post-Covid syndrome – symptoms for 12 weeks or more following Covid infection

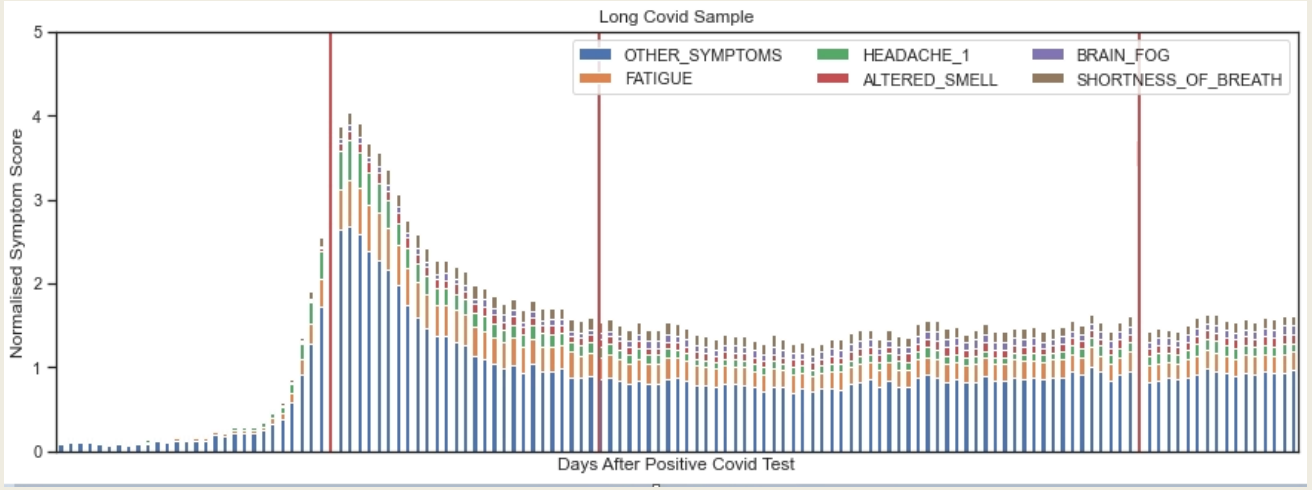
Symptoms include breathlessness, chest pain, chronic fatigue, “brain fog”, post-exertional symptom exacerbation.

ONS estimates 13.7% of Covid patients will get Long Covid.

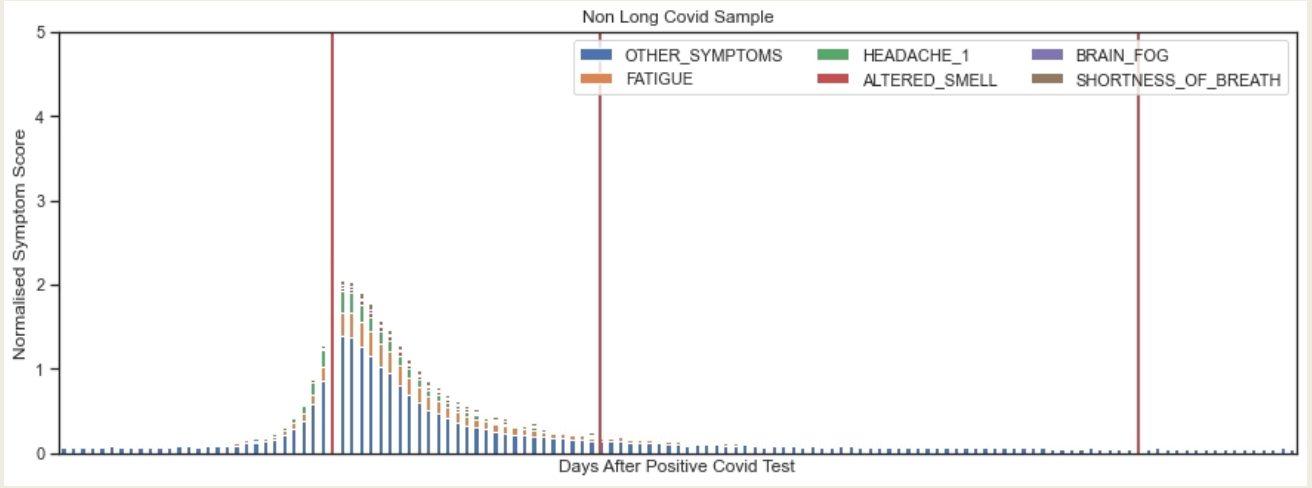
>1 million people in UK

Recovery trajectory not clear.

Long Covid Group Symptom Trajectory



Recovered Group Symptom Trajectory



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Risk factors for Long Covid

Significant risk factors:

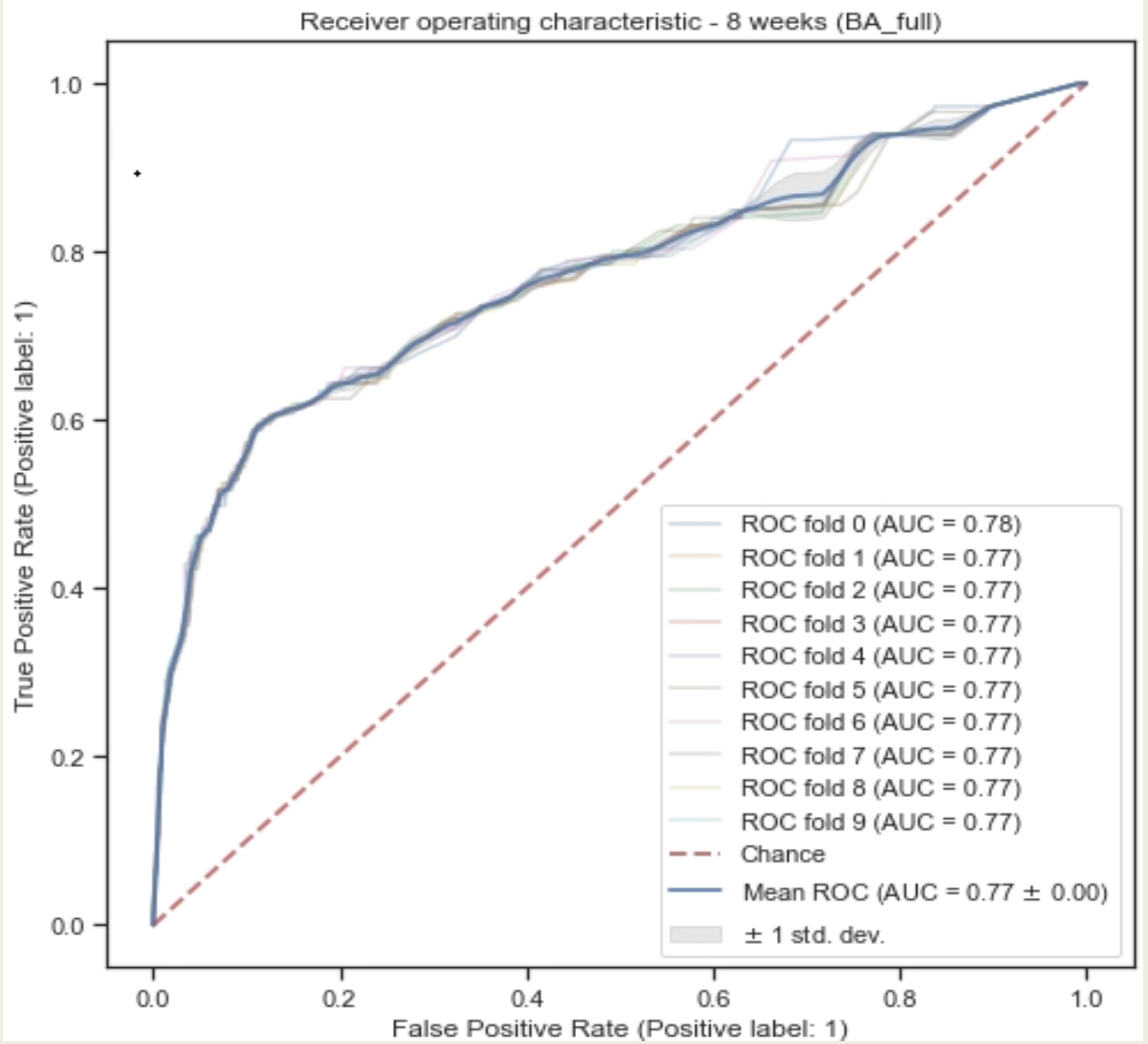
Being female

Medical history: lung disease, hayfever, asthma, limited activity

Acute infection: higher levels of symptoms in initial illness.

Weak associations with body mass index and age.

Different associations over 70 years of age (more males affected).



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Is there reliable evidence for sub-types of Long Covid?

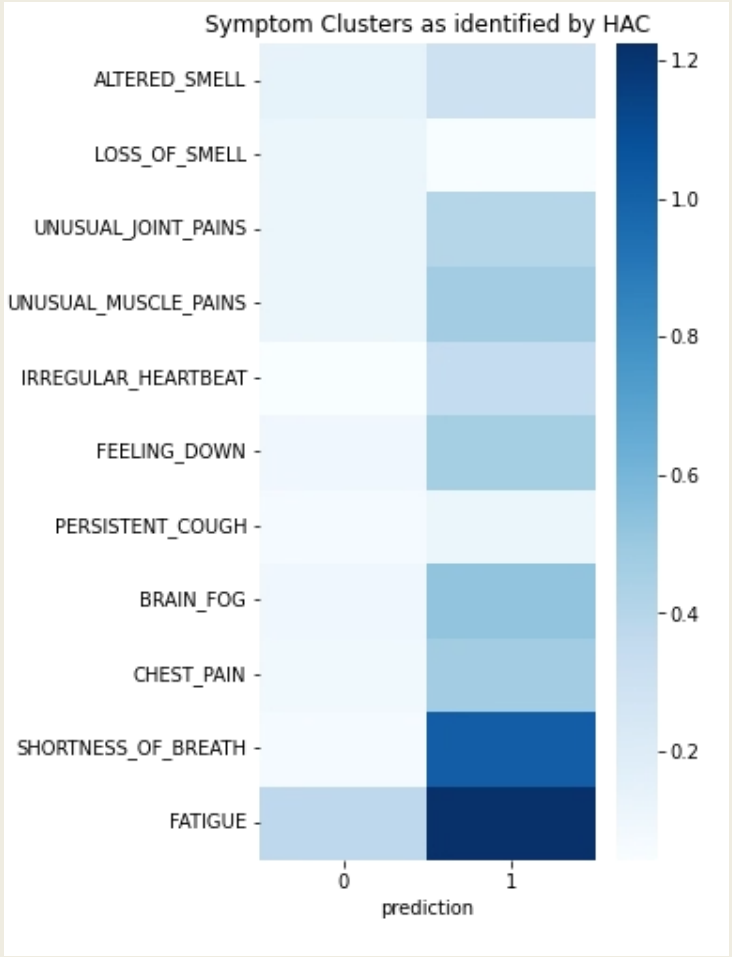
Methods:

- K-modes clustering
- Hierarchical agglomerative clustering analysis (HAC)
- Factor analysis.

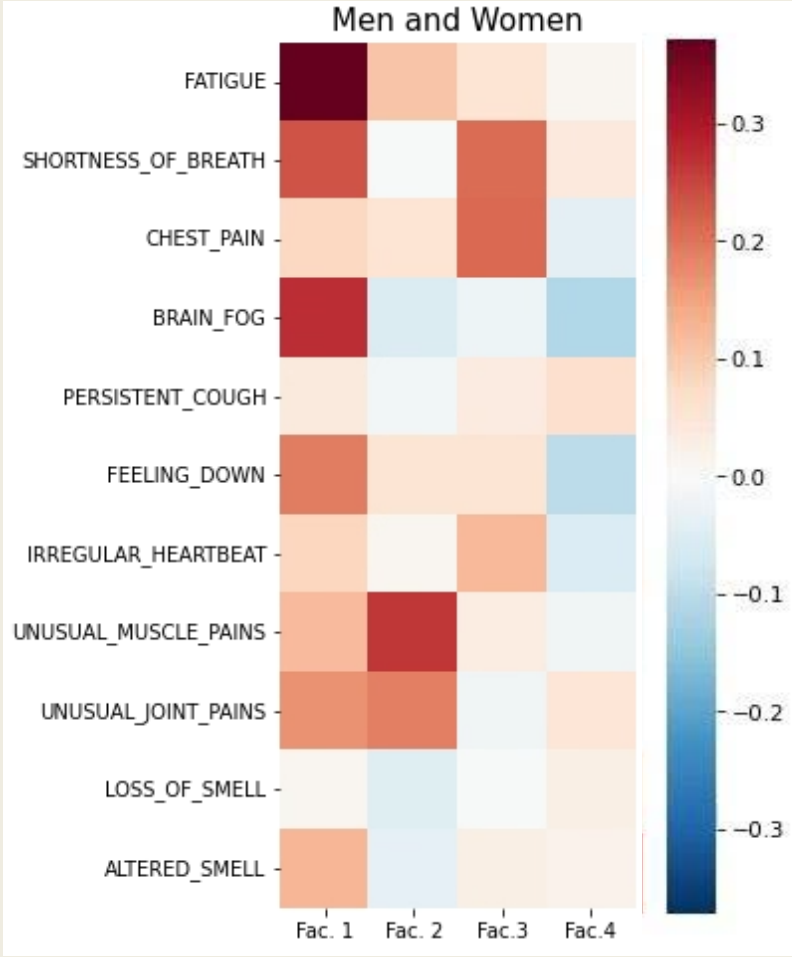
Performed on 11 most common symptoms

No replicable clusters found between methods

Hierarchical Agglomerative Clusters (2)



Factor Analysis (4 Clusters)



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Conclusions

We were able to find evidence supporting established risk factors for Long Covid

We created a combined model which could predict Long Covid in symptomatic patients with 77% accuracy.

We could not find stable evidence for sub-clusters of Long Covid.

Limitations: Sample is likely not representative of the whole population

Some potential risk factors not measured in app

Nothing on children…

Clinical implications

GPs and other health care professionals might be able to predict who is higher risk of Long Covid based on risk factors and early phase of illness.

This may help recovery management and enable **earlier** referrals to Long Covid clinics.

Need further work to understand Long Covid after asymptomatic infection

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NHS

Thanks to the team!

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