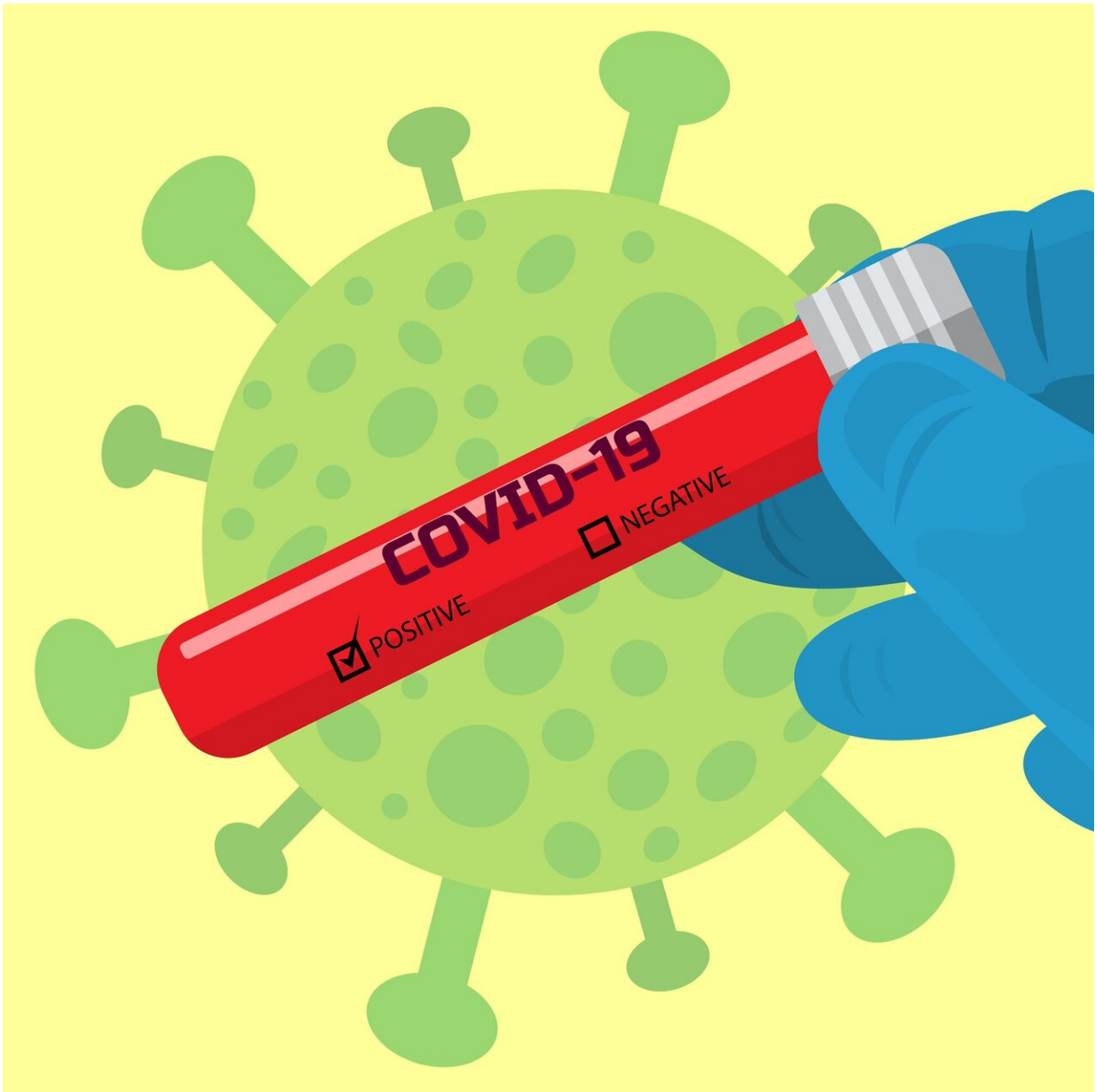


# Two or more long-term health conditions linked to a positive COVID-19 test

August 21 2020, by Ali Howard

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The presence of two or more long term health conditions—known as multimorbidity—is linked to a 48% higher risk of a positive COVID-19 test.

While it is well recognized that the risk of a severe COVID-19 [infection](#) is linked to certain long-term health conditions, little is known, so far, about the effects of multimorbidity and polypharmacy (taking multiple medications) on the risk of a serious [coronavirus](#) infection.

Now, a new study led by the University of Glasgow and published today in *PLOS ONE*, is the first to link both multimorbidity and polypharmacy with the risk of having a positive COVID-19 test.

This association was particularly apparent for those with two or more cardiometabolic health conditions such as diabetes and [high blood pressure](#). Researchers found that the presence of two or more such conditions was associated with a 77% higher risk of a positive COVID-19 test.

Those of non-white ethnicity, who also had multimorbidity, had almost three times the risk of a positive COVID-19 test.

Overall, people with multimorbidity who appeared to have the highest risk of COVID-19 infection were from socioeconomically deprived areas, of non-white ethnicity, considered severely obese, and those with reduced renal function.

The researchers believe their findings will have implications for clinical and [public health](#) decision making as the SARS-CoV-2 pandemic

continues around the world.

Dr. Barbara Nicholl, from the University of Glasgow who led the study, said: "Multimorbidity and polypharmacy are global healthcare challenges in their own right. Our study shows that having a positive COVID-19 test is more common in those living with these [health conditions](#). These results will be important for public health and clinical decisions in the future as we continue to manage the health of those at greatest risk of a severe COVID-19 infection during this pandemic."

Professor Frances Mair, the University of Glasgow Norie Miller Professor of General Practice and leading expert on multimorbidity, said: "Given the high prevalence of multimorbidity, particularly in older age groups, the more detailed understanding of the associations between these complex [health](#) needs and COVID-19, as provided in this study, will improve our understanding of the risks and help us better advise those most vulnerable to severe infection."

The study is based on UK Biobank data, which is now linked to COVID-19 [test](#) results, and included 428,199 adults aged 37-73 at the time of recruitment (2006-2010) across England and Wales.

The study, "Multimorbidity, Polypharmacy, and COVID-19 infection within the UK Biobank Cohort," is published in *PLOS ONE*.

**More information:** Ross McQueenie et al. Multimorbidity, polypharmacy, and COVID-19 infection within the UK Biobank cohort, *PLOS ONE* (2020). [DOI: 10.1371/journal.pone.0238091](https://doi.org/10.1371/journal.pone.0238091)

Provided by University of Glasgow

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