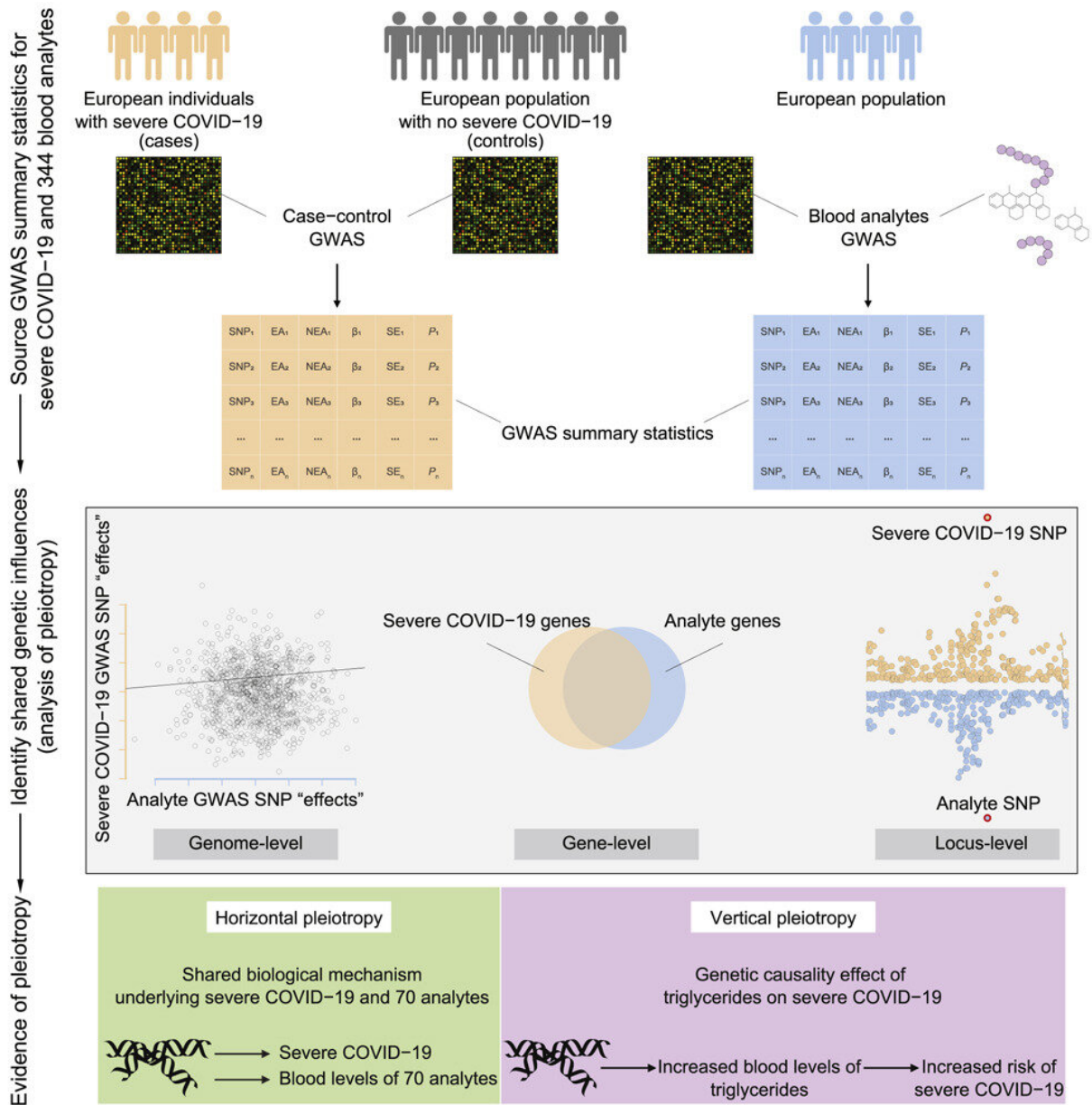


# Severe COVID-19 risk elevated by high triglyceride levels, study finds

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Graphical abstract. Credit: *Cell Reports* (2022). DOI: 10.1016/j.celrep.2022.111708

Professor Dale Nyholt, from the QUT Center for Genomics and Personalized Health, said a key finding was that one of the 344 studied blood analytes had widespread shared genetic influences with COVID-19 causing an increased risk of severe COVID-19.

"Our genetic causality analyses found that higher levels of [triglycerides](#), a type of fat that is a cardiovascular disease biomarker, was strongly linked to increased risk of severe COVID-19 disease," Professor Nyholt.

"The high genetic causality proportion of 0.82 indicates that increased [triglyceride levels](#) are causal for severe COVID-19 disease.

"This fits with the observation that hospitalized patients who died or were in ICU had significantly higher levels of triglycerides compared to those who were discharged or had a mild case.

"Our finding provides a genetic explanation for the greater severity of disease for people with higher triglycerides and supports the use of lipid-lowering drugs such as statins and fibrates against severe COVID-19."

Research team member Ph.D. candidate Hamzeh Mesrian Tanha said they had used [genome-wide association studies](#) (GWAS) data to search for shared genetic influences between severe COVID-19 and blood analytes at the levels of the genome, gene, and differences in a single DNA base.

GWAS enable screening of the genome of many thousands of people to look for associations between millions of genetic variants and different

diseases, with the goal of identifying [genetic factors](#) underlying disease conditions.

"Our analyses genetically linked [blood levels](#) of 71 analytes to severe COVID-19 in at least one of the three levels of investigation, suggesting common biological mechanisms or causal relationships," Mr. Tanha said.

"Of those 71 analytes, we found six that showed evidence of shared influence with severe COVID-19 at all three levels, among these only triglycerides showed causality."

Mr. Tanha said a recent study of COVID-19 patients in hospital treated with statins had fewer deaths compared with a group of those who did not receive this treatment.

"However, retrospective studies have produced conflicting results on the protective effect of the prior use of statins. This could be partially explained by the presence of other medical conditions in statin users.

"Therefore, our results provide important clarity and support targeted reduction of triglycerides to help prevent severe COVID-19."

"Shared genetic influences between blood [analyte](#) levels and risk of severe COVID-19" was published in *Cell Reports*.

**More information:** Hamzeh M. Tanha et al, Shared genetic influences between blood analyte levels and risk of severe COVID-19, *Cell Reports* (2022). [DOI: 10.1016/j.celrep.2022.111708](https://doi.org/10.1016/j.celrep.2022.111708)

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