

A clue to long-haul COVID symptoms: Coronavirus might change gene expression

Results from [a new cell study](#) suggest that the SARS-CoV-2 spike protein can bring about long-term gene expression changes. The findings could help explain why some COVID-19 patients—referred to as COVID long-haulers—experience symptoms such as shortness of breath and dizziness long after clearing the infection.

SARS-CoV-2, the virus that causes COVID-19, is covered in tiny spike proteins. During infection, the spike proteins bind with receptors on cells in our body, starting a process that allows the virus to release its [genetic material](#) into the inside of the healthy cell.

“We found that exposure to the SARS-CoV-2 spike protein alone was enough to change baseline gene expression in [airway cells](#),” said Nicholas Evans, a master’s student in the laboratory of Sharilyn Almodovar, Ph.D., at the Texas Tech University Health Sciences Center.

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The researchers found that cultured human airway cells exposed to both low and high concentrations of purified spike protein showed differences in gene expression that remained even after the cells recovered from the exposure. The top genes included ones related to [inflammatory response](#).

“Our work helps to elucidate changes occurring in patients on the genetic level, which could eventually provide insight into which treatments would work best for specific patients,” said Evans.

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