Common cold virus could offer some level of protection against COVID-19 infection, new study suggests

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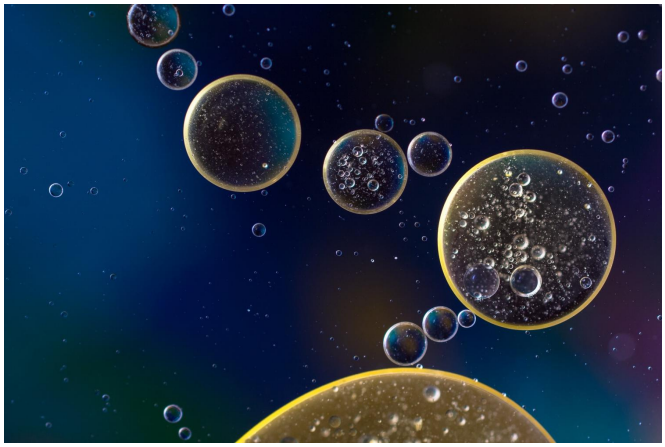

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The common cold virus could offer some level of protection against COVID-19 infection, according to a new study.

The research—published today in *Journal of Infectious Diseases* and led by scientists at the MRC-University of Glasgow Centre for Virus Research (CVR) – found that human rhinovirus (the virus that causes the common cold) triggers an innate immune response that seems to block SARS-CoV-2 replication in cells of the respiratory tract.

In further studies, mathematical simulations by the research team showed that this virus-virus interaction might have a population-wide effect, and that an increasing prevalence of rhinovirus could reduce the number of new COVID-19 cases.

Human rhinoviruses cause the common cold and are the most widespread respiratory viruses found in people. Previous research has shown that interactions between rhinoviruses and other respiratory viruses can affect the type and severity of infections in individuals, and the way in which they infect and circulate around groups of people (patterns of infection).

Viruses only infect a small number of cell types within the body, and respiratory viruses typically infect cells within the respiratory tract.

In the study, the researchers first infected human respiratory cells with SARS-CoV-2 in the lab, recreating the cellular environment in which infections normally occur. They then studied the replication of SARS-CoV-2 in these cells, both in the presence and absence of rhinovirus.

Professor Pablo Murcia, from the MRC-University of Glasgow Centre for Virus Research, explains: "Our research shows that human rhinovirus triggers an innate immune response in human respiratory epithelial cells which blocks the replication of the COVID-19 virus, SARS-CoV-2. This means that the immune response caused by mild, common cold virus infections, could provide some level of transient protection against SARS-CoV-2, potentially blocking transmission of SARS-CoV-2 and reducing the severity of COVID-19.

"The next stage will be to study what is happening at the molecular level during these virus-virus interactions, to understand more about their impact on disease transmission. We can then use this knowledge to our advantage, hopefully developing strategies and control measures for COVID-19 infections.

"In the meantime, vaccination is our best method of protection against COVID-19."

More information: Kieran Dee et al. Human

rhinovirus infection blocks SARS-CoV-2 replication within the respiratory epithelium: implications for COVID-19 epidemiology, *The Journal of Infectious Diseases* (2021). DOI: 10.1093/infdis/jiab147

Provided by University of Glasgow

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