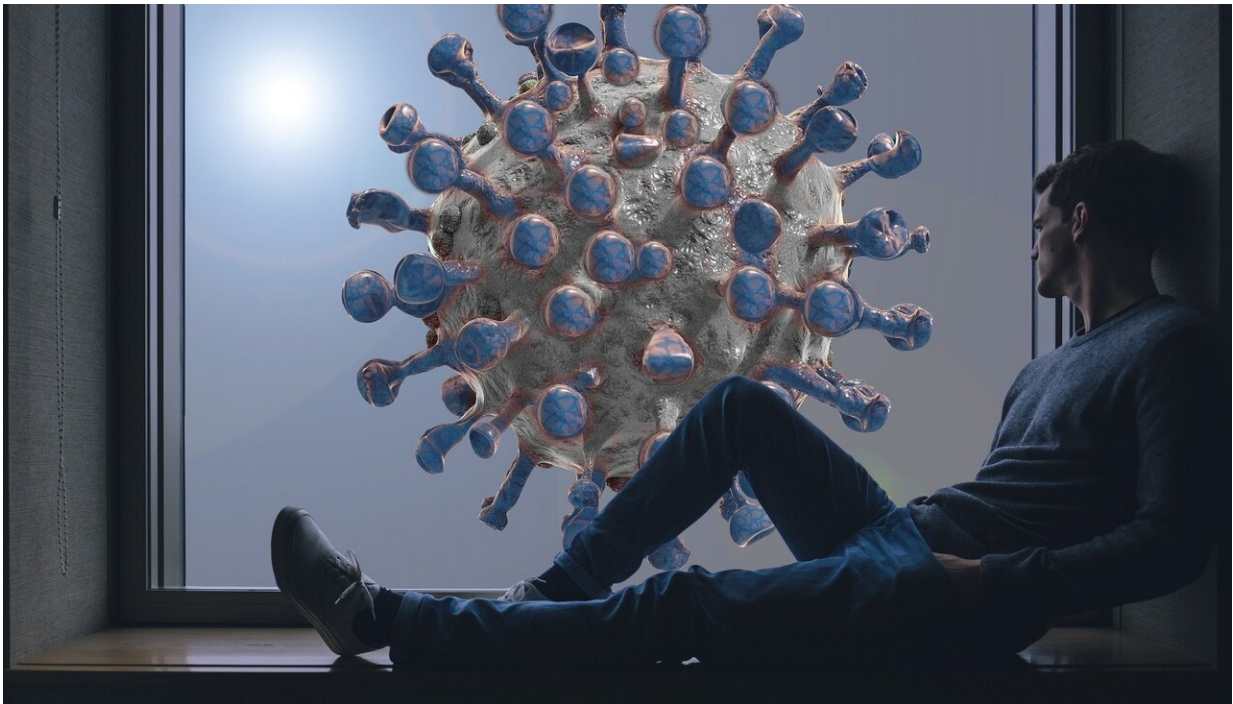


Individual genetic variation in immune system may affect severity of COVID-19

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Genetic variability in the human immune system may affect susceptibility to, and severity of infection by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the virus responsible for the coronavirus disease (COVID-19). The research is published today, April 17 in the *Journal of Virology*, a publication of the American Society for

Microbiology.

Individual genetic variation may explain differences in the strength of immune responses. Certain immune system genes, called human leukocyte antigen genes that are involved in recognizing pathogens, vary from person to person. Variations can influence how well the immune system recognizes a given pathogen. Poor recognition of SARS-CoV-2 could cause a person to be more vulnerable to the virus.

"In particular, understanding how variation in HLA [a component of the [immune system](#) containing multiple genes] may affect the course of COVID-19 could help identify individuals at higher risk from the disease," according to the authors of the new study.

The authors show that individual HLA, haplotype, and full genotype variability likely influence the capacity to respond to SARS-CoV-2 infection, and note that certain alleles in particular could be associated with more severe infection, as has previously been shown with SARS-CoV.

"This is the first study to report global distributions of HLA types and haplotypes with potential epidemiological ramifications in the setting of the current pandemic," write the authors, from Oregon Health & Science University, Portland, and the Portland VA Research Foundation.

"HLA typing can be fast and inexpensive," the authors write. "Pairing HLA typing with COVID-19 testing where feasible could improve assessment of viral severity in the population. Following the development of a vaccine against SARS-CoV-2, the virus that causes COVID-19, individuals with high-risk HLA types could be prioritized for vaccination."

Provided by American Society for Microbiology

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