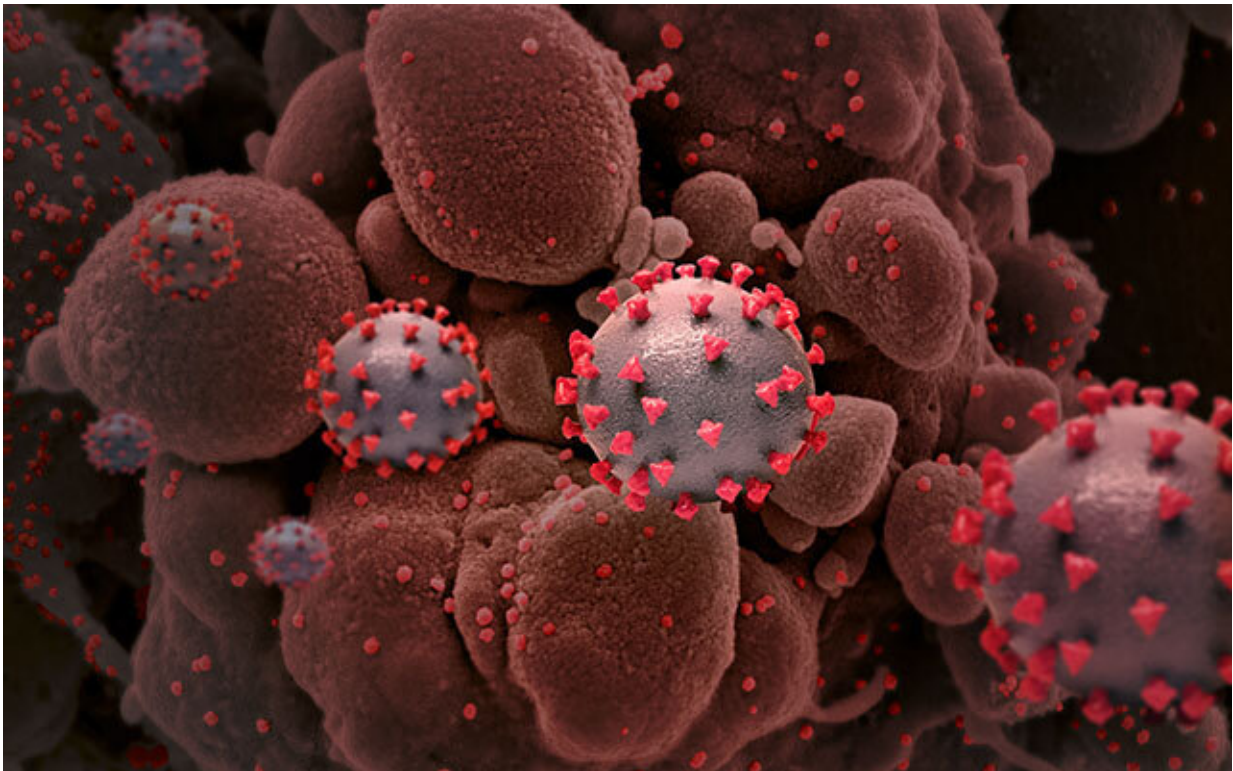


Estrogen treatment associated with reduced COVID deaths

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Creative rendition of SARS-CoV-2 particles (not to scale). Credit: National Institute of Allergy and Infectious Diseases, NIH

A new paper in *Family Practice*, published by Oxford University Press, indicates that receiving hormone replacement therapy within six months of a recorded diagnosis of COVID-19 was associated with a reduction in

mortality from the disease.

The novel severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) continues to spread. Men and women are equally susceptible to the infection. Men tend to have more severe infections, however, and have higher rates of hospitalization and mortality. A recent review of sex differences in COVID-19, using data from 38 countries, found mortality in men was 1.7 times higher than in women. Younger women or those with higher estrogen levels are less likely to experience COVID-19 complications.

Earlier studies have also shown that women have faster and greater immune responses to viral infections. Researchers have observed similar data in previous pandemics, including the SARS-CoV (Severe Acute Respiratory Syndrome Corona Virus) and MERS-CoV (Middle East Respiratory Syndrome Corona Virus) outbreaks.

The reason for these sex differences is uncertain. Limited recent observational data suggest that estrogen may reduce the severity of COVID-19 disease. This study investigated the association between [hormone replacement therapy](#) or combined [oral contraception](#) use, and the likelihood of death in women with COVID-19. Researchers investigated combined oral contraception, which contains estrogen, because some recent observational data suggests that women taking [oral contraceptives](#) have a lower risk of acquiring COVID-19.

Investigators used a retrospective cohort with [medical records](#) from the Oxford-Royal College of General Practitioners Research and Surveillance Center primary care database. They identified a group of 1,863,478 women over 18 from 465 general practices in England. There were 5451 COVID-19 cases within the cohort. Hormone replacement therapy was associated with a 22% reduction in all-cause mortality in COVID-19.

This suggests that estrogen may well contribute a protective effect against COVID-19 severity. This may explain why fewer women compared to men have been hospitalized, admitted to intensive care, or died due to COVID-19 during the pandemic.

"This study supports the theory that estrogen may offer some protection against severe COVID-19," said Christopher Wilcox, one of the paper's authors. "We hope that this study can provide reassurance to patients and clinicians that there is no indication to stop hormone replacement therapy because of the pandemic."

More information: Hajira Dambha-Miller et al, Mortality in COVID-19 among women on hormone replacement therapy: a retrospective cohort study, *Family Practice* (2022). [DOI: 10.1093/fampra/cmab041](https://doi.org/10.1093/fampra/cmab041)

Provided by Oxford University Press

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