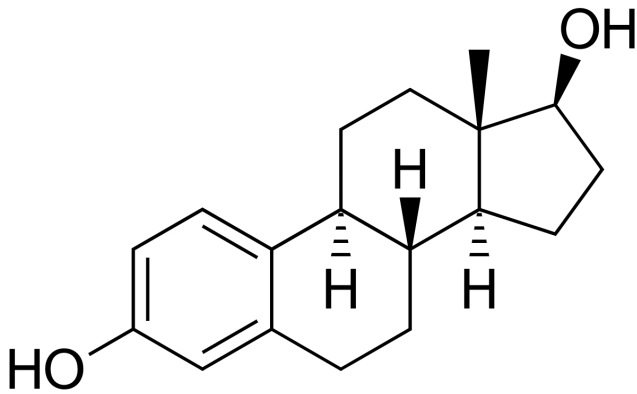


Estrogen may lessen severity of COVID-19 symptoms in women, study says

27 August 2020



Estradiol, the major estrogen sex hormone in humans and a widely used medication. Credit: Public Domain

Why are men at greater risk than women for more severe symptoms and worse outcomes from COVID-19 regardless of age?

In an effort to understand why this occurs, scientists at Wake Forest School of Medicine conducted a review of published preclinical data on sex-specific hormone activity, especially estrogen. The review is published in the September online issue of the journal *Current Hypertension Reports*.

"We know that coronavirus affects the heart and we know that estrogen is protective against [cardiovascular disease](#) in women, so the most likely explanation seemed to be hormonal differences between the sexes," said the lead author of the review, Leanne Groban, M.D., professor of anesthesiology at Wake Forest School of Medicine, part of Wake Forest Baptist Health.

Groban's researchers said the published literature indicated that the angiotensin-converting enzyme2 (ACE2), which is attached to cell membranes in the heart, arteries, kidneys and intestines, is the cellular receptor of the coronavirus responsible for

COVID-19 infections, and helps bring the virus into the cells of those organ systems.

The review, they said, also pointed to estrogen's lowering the level of ACE2 in the heart, which may modulate the severity of COVID-19 in women. Conversely, higher levels of ACE2 in tissues could account for why symptoms are worse in men than women, Groban said.

"We hope that our [review](#) regarding the role of estrogenic hormones in ACE2 expression and regulation may explain the [gender differences](#) in COVID-19 infection and outcomes, and serve as a guide for current treatment and the development of new therapies," Groban said.

More information: Leanne Groban et al, Is Sex a Determinant of COVID-19 Infection? Truth or Myth?, *Current Hypertension Reports* (2020). DOI: [10.1007/s11906-020-01073-x](https://doi.org/10.1007/s11906-020-01073-x)

Provided by Wake Forest University Baptist Medical Center

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