

# Study finds some women may be at higher risk of death from COVID-19

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More men than women are dying from COVID-19. Many studies suggest that hormones may give women the upper hand. But not all women seem equally protected. Why?

Two fourth-year [medical students](#) at the Herbert Wertheim College of Medicine—Chitra Gotluru and Allison Roach—analyzed worldwide data looking for answers. Their findings are published in the March issue of the journal *Obstetrics and Gynecology*.

They reviewed more than 100 studies and the Global Health 50/50 database, the world's largest public source of sex-disaggregated data on COVID-19.

"We found that in countries that kept male/female data, men are dying from COVID-19 at double the rate of [women](#)," said Gotluru, the study's first author. "We also found that certain women had higher mortality (rate of dying)."

Senior author Dr. Carolyn Runowicz, a professor of obstetrics and gynecology and executive associate dean for academic affairs at HWCUM, noted that

"women who had just given birth, menopausal women, and possibly women with Polycystic Ovary Syndrome (PCOS) appear to be more vulnerable to infection with the novel [coronavirus](#)."

Women may have stronger immune systems partly due to the influence of sex chromosomes. Scientists think that having two X chromosomes—men have one X and one Y—is better for fighting off infection. Sex hormones also play an essential role in immune response. "It appears that estrogen, and possibly progesterone, may have a protective effect in women, which is lost at menopause," said Runowicz.

During menopause, a woman's estrogen and progesterone levels decrease. The students found that "for women, there is an initial increase in COVID-19-associated case-fatality that begins at age 50 years, notably coinciding with the age of menopause," and a decrease in hormone levels.

Some of the most severe cases of COVID-19 in women occurred post-partum, according to the study. Pregnant women have high levels of estrogen and progesterone, but progesterone drops off almost immediately after delivery.

The study also noted that "in theory, patients with PCOS may be at greater risk of contracting the virus..." due to having a higher incidence of risk factors like [heart disease](#), [high blood pressure](#) and diabetes, and increased androgen levels. Androgens are sex hormones that give men their male characteristics.

Although more research is needed, the study suggests that women in these vulnerable groups should be more vigilant about avoiding coronavirus infection.

**More information:** Sex, Hormones, Immune Functions, and Susceptibility to Coronavirus Disease 2019 (COVID-19)–Related Morbidity,

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