

Sairam Parthasarathy, MD: Sleep Issues Affect COVID-19, Vary by Sex

[Chelsie Derman](#) | Published on: June 4, 2024

Parthasarathy told HCPLive women have a weaker immune response to COVID-19 than men.



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When it comes to COVID-19, [sleep disturbances](#) and sex can modulate the severity of the infection.¹

At [SLEEP 2024](#), the 38th annual meeting of the Associated Professional Sleep Societies, Sairam Parthasarathy, MD, from the University of Arizona, discussed how sleep disturbances can put individuals predisposed to contract severe COVID-19. The better the sleep, the better the body can fight the infection. Both too little sleep and too much sleep makes the immune cells dysfunctional and increases an individual's risk for severe COVID-19 or long COVID.

As for sex differences, females have a worse immune response to COVID-19 than males. Research has shown female's immune responsiveness to fight against the COVID-19 infection or to gain immunity from the vaccine is "not as robust," as it is for males, Parthasarathy told *HCPLive*.

Parthasarathy gave the example of a women contracting the virus and developing long COVID symptoms. In this case, her immune cells would have already become dysfunctional, and her next infection, such as another COVID-19 infection, would be more likely to develop.

“Their cells are not mounting enough adaptive response and antibody response to that particular infection, and as a result, they’re more likely to develop multiple infections,” Parthasarathy said. “We know that it’s like a multiple hits hypothesis, [which] is what we call the more time someone gets infected, the more likely you can develop long COVID. And so, women are disadvantaged in terms of the fact that they don’t mount a sufficient antibody response.”

This contradicts a study published in February 2023 demonstrated males have a greater risk of experiencing more severe COVID-19 symptoms and were 60% more likely to die than females.² Investigators of the study pointed out research in recent years discovered estrogen stimulates immune system activity. In contrast, testosterone weakens the immune system activity.

Parthasarathy added how he believes vaccine studies should examine the antibody response of women to see if they are getting a robust or weak response.

“[Women] probably should be getting an additional booster shot or a sooner booster shot, rather than waiting for a year waiting for 6 months, as has been the paradigm,” Parthasarathy said. “We need to bring about precision medicine approaches.”

References

1. Engert, L, Parthasarathy, S, Prather, A. The Impact of Sleep Disturbances on the Immune System: The Modulating Role of Sex and Implications for Long COVID. Session presented at SLEEP 2024. Houston, TX. June 3, 2024.
2. Wilson C. ARE THERE SEX DIFFERENCES IN THE IMMUNE SYSTEM?. *New Sci.* 2023;257(3424):40. doi:10.1016/S0262-4079(23)00214-2

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