

## ***A finding of sex similarities rather than differences in COVID-19 outcomes***

Shattuck-Heidorn, H., Danielsen, A. C., Gompers, A., Zhao, H., Boulicault, M., Marsella, J. and Richardson, S.S. (2021) A finding of sex similarities rather than differences in COVID-19 outcomes. *Nature*, 597, E7-E9.

Shattuck-Heidorn et al. critique a previous paper by Takahashi et al. (2020), also published in *Nature*, that presented numerous sex differences in immune responses to Covid-19 and suggested those differences contribute to sex differences in outcomes. Shattuck-Heidorn et al. have re-analyzed their data and argue that most of the findings are null. A response by Takahashi et al. is published alongside: <https://doi.org/10.1038/s41586-021-03645-6>.

This paper is important because it contributes to the conversation about rigor in sex differences research. Before we develop sex-specific treatments for any health condition, we need convincing evidence of sex differences. Our thresholds for being convinced, vs. not, depend largely on our tolerance for false positives vs. false negatives. The paper also raises important questions about our tendency to attribute sex differences to “biological” causes, and the extent to which other causes also need to be considered.

This series of papers—the original paper, the critique, and the original authors’ response—should get people talking more about these issues. It would be excellent material for discussion in lab meeting or class. Toward that end, the paper is accompanied by two excellent “explainers” on the Genderscilab.org blog:

<https://www.genderscilab.org/blog/nature-matters-arising-explainer>  
<https://www.genderscilab.org/blog/nature-matters-arising-media-analysis>

The work itself is part of a larger project from that group on Covid-19: <https://www.genderscilab.org/covid-19-project>

Link to paper: <https://doi.org/10.1038/s41586-021-03644-7>