



## POSITION

Policies that address COVID-19 prevention, treatment, and pandemic relief must consider sex as a biological variable as well as the influence of social determinants of health, including gender.

### SWHR supports policies that consider the following:

- Biomedical research focused on understanding, preventing, and treating COVID-19 must be inclusive. Research trials should be designed to appropriately include diverse populations of women across the lifespan. Pregnancy or lactation status should not constitute criterion for exclusion within clinical trials.
- Sex as a biological variable is a crucial factor in infectious disease and immune response, and must be considered within COVID-19 research. Both human trials and preclinical research should be structured to allow for sex- and/or gender-disaggregate outcomes analyses.
- Governments and institutions engaged in COVID-19 screening and diagnostics should be required to collect and report comprehensive demographic data, including sex and/or gender, race and ethnicity, and pregnancy status.
- Populations and communities at increased risk — including those who are frontline essential workers, older adults, those with chronic conditions, pregnant and/or breastfeeding, people with disabilities, racial and ethnic minority groups, and people experiencing homelessness or living in rural communities, nursing home or longer-term care facilities — must be prioritized in research and relief policies.
- Social determinants of health must be considered in COVID-19 aid. Women are at particularly high risk for mental health concerns, domestic violence, poverty, food insecurity, and job loss or related difficulties, and they must be prioritized in relief efforts.

## BACKGROUND

The COVID-19 global public health pandemic provides a stark example of why sex and gender must be critical considerations in pandemic and emergency response and preparedness.<sup>1</sup> COVID-19 appears to be infecting similar numbers of women and men, but the majority of people dying from the virus are men. While men tend to face higher mortality rates as a result of COVID-19 diagnoses, women seem more likely to be diagnosed as COVID-19 “long haulers,” patients who face serious long-term side effects following initial infection.<sup>2</sup> One study suggests women outnumber men 4:1 within the long hauler population.<sup>3</sup>

Sex- and gender-based differences in COVID-19 outcomes are not surprising, given what we know about infectious disease. Cultural and behavioral differences between genders play a prominent role in disease exposure.<sup>4</sup> Women and men also differ in immune responses to infection. Infectious disease research has historically overlooked sex as a biological variable,<sup>5</sup> meaning there is much we still do not understand about how sex affects immune response and disease outcomes.

In many ways, women may be hardest hit by the pandemic. For example, women make up the majority of essential workers, and they also tend to do much of the unpaid caregiving and domestic work at home. Women are disproportionately dealing with the impacts of worsening mental health and growing rates of domestic violence related to stay-at-home orders. Women — and especially women of color — are more likely than men to live in poverty, placing them at increased risk for food insecurity.<sup>6</sup>

Women of color are also overrepresented in some of the industries experiencing the biggest job losses due to COVID-19, including child care and hospitality. While many women of color have lost their jobs as a result of the pandemic's economic circumstances, those who are still employed are more likely to be working jobs on the front lines of the pandemic, without the option of working from home in safety.

Finally, the biomedical workforce — more crucial than ever during a global pandemic — is dealing with difficulties of its own. COVID-19 is exacerbating pre-existing challenges facing women and people of color in STEM careers.<sup>7</sup> Data suggests that during the pandemic, women are taking on increased caregiving responsibilities as compared to men, and are struggling to keep up with pre-pandemic levels of productivity, which can affect long-term milestones such as tenure appointment.

SWHR strongly believes that policies put into place during the current COVID-19 and any future pandemic must thoroughly consider and address issues of sex and gender, as well as associated health disparities.

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<sup>1</sup>Ortman, EO (2020). Sex and gender: Critical considerations in COVID-19 research and response. SWHR. Accessible from: <https://swhr.org/sex-and-gender-critical-considerations-in-covid-19-research-and-response/>

<sup>2</sup>Chinnappan, S (2021). Long COVID: The Impact on Women and Ongoing Research. SWHR. Accessible from: <https://swhr.org/long-covid-the-impact-on-women-and-ongoing-research/>

<sup>3</sup>Davido B, Seang S, Tubiana R, de Truchis P (2020). Post-COVID-10 chronic symptoms: A postinfectious entity?

<sup>4</sup>Van Lunzen, J, Altfeld, M (2014). Sex differences in infectious diseases – Common but neglected. *Jour Infect Diseases*, 209(suppl\_3), S79-S80. doi: 10.10893/infdis/jiu159.

<sup>5</sup>Ingersoll, MA (2017). Sex differences shape the response to infectious diseases. *PLoS Pathog.*, 13(12), e1006688. doi: 10.1371/journal.ppat.1006688.

<sup>6</sup>Erickson, L (2020). The disproportionate impact of COVID-19 on women of color. SWHR. Accessible from: <https://swhr.org/the-disproportionate-impact-of-covid-19-on-women-of-color/>.

<sup>7</sup>The Impact of COVID-19 on the Careers of Women in Academic Sciences, Engineering, and Medicine (2021), National Academy of Sciences. Accessible from: <https://www.nap.edu/read/26061/chapter/1>

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*“Sex” refers to the biological classification of living things according to reproductive organs and chromosomes. “Gender” refers to an individual’s self-identification as masculine, feminine, both, or neither, and is intrinsically associated with sociodemographic factors that ultimately affect health. Both sex and gender influence health across the lifespan, and SWHR strives to comprehensively address both sex and gender as they relate to women’s health. When citing research, SWHR uses terminology consistent with what is used in the study. As inclusive language practices continue to evolve in the scientific and medical communities, we will reassess our language as necessary.*