

# SEX AND GENDER IN HEALTH RESEARCH

**SEX** = identity based on biological attributes such as genes, hormones, and reproductive/sexual anatomy.

**GENDER** = identity based on how we perceive ourselves and others; socially constructed roles, behaviours, and expressions.

## Main issues in health research

Biological sex differences are not well understood  
&  
Gender bias is often present in research design and health delivery

## Consider Intersecting Factors!

Sex and gender do not exist in a vacuum. They are interconnected with domains such as race, ethnicity, social position, sexual orientation, disability, oppression, privilege, policies, practices, etc., and many of these can vary based on individual situations.

Even in work with lab animals, consider strain, age, temperament, behaviour, and environmental enrichment.

How can you address intersecting factors in your work?

## Checklist for Integrating Sex and Gender Considerations\*

### 1. RESEARCH PROPOSAL AND DESIGN

#### Biomedical Research

- ☐ Are you familiar with the relevant literature regarding sex differences in your mechanism/disease/pathway of study?
- ☐ Are the following considered in your research question: identification of sex and/or gender differences or similarities; sex-specific pathways; sex and/or gender as a confounding variable?
- ☐ If studying a single sex have you provided justification?
- ☐ Have you identified sex of cells, tissues, or animals being used?
- ☐ Have you described if and how you are controlling for hormonal status of animals?
- ☐ Have you considered animal behavioural differences between sexes that may be a confounder? And human biases that may results in misinterpretation of behaviour?
- ☐ Have you provided detailed information on sample size calculations and data analysis methods to consider sex?

#### Research with Human Participants

- ☐ Are you familiar with the relevant literature regarding sex and/or gender differences in your area of study?
- ☐ Are the following considered in your research question: identifying and explaining presence or absence of sex and/or gender differences in an intervention/outcome; sex and/or gender as a confounding variable?
- ☐ If studying a single sex and/or not considering gender, have you provided justification?
- ☐ Is your recruitment strategy appropriate for people who are diverse, based on factors like sex and gender?
- ☐ Are data collection tools sensitive and appropriate to capture sex and/or gender issues, and not gender-biased? Is inclusive language employed?
- ☐ Have you provided detailed information on sample size calculations and data analysis methods to consider sex and/or gender?

#### Policy, Systems, and Ethics Research

- ☐ Are you familiar with the relevant literature regarding sex and/or gender issues in your area of study?
- ☐ Have you identified gender issues in the system of interest through use of sex-disaggregated data?
- ☐ Have you analyzed power relations and values informing your research through a [gender framework](#)?
- ☐ Have you considered the appropriateness of your methodologies from a gender perspective?
- ☐ Have you considered how gender might influence who participates in your research, who collects the data, where it is collected, and who analyzes the data?
- ☐ Have you considered who will be empowered and disempowered by the outcomes?

### 2. REPORTING AND COMMUNICATION

- ☐ Will you report null findings with respect to sex and/or gender?
- ☐ Does your knowledge translation and exchange (KTE) plan consider how to reach, impact, and maximize uptake by all relevant audiences?
- ☐ Does your KTE content and distribution plan need to vary by sex and/or gender?
- ☐ How will your findings affect sex and/or gender issues in clinical practice, policy development, and research practices?

### 3. RESEARCH TEAM

- ☐ Does your research team reflect the population you are studying, i.e. sex, gender, ethnicity, patient advisors, community members, etc?
- ☐ Did you know that diversity on research teams lead to [better science](#) and [improved metrics](#)?
- ☐ Does one or more of your team members have experience and/or training in sex and gender science?
- ☐ Have you considered including a [sex and gender champion](#) on your team?

**\* this checklist is not exhaustive, but rather is meant as a guide to help you gain perspective in your own research**

Resources used for the development of this checklist and other helpful tools:

- [CIHR: Sex and Gender Training and Tools](#)
- [CIHR: Sex and Gender Research Casebook](#)
- [CIHR: Institute of Gender and Health Resources](#)
- [CIHR: Sex, Gender, and Knowledge Translation](#)
- [CIHR: The Ethics of Sex and Gender Considerations](#)
- [CIHR: College of Reviewers: Key Considerations](#)
- [Sex and Gender Equity in Research Guidelines](#)
- [Gender-Based Analysis Plus \(GBA+\)](#)
- [NIH Online Sex and Gender Course](#)
- [Freeman et al. Nature Comment. 2014;513:305.](#)
- [Morgan et al. Health Policy Plan. 2016;31:1069-1078](#)
- [Neilsen et al. PNAS. 2017;114:1740-1742](#)

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