

Sex and Gender-Based Analysis and Reporting:

Ensuring equity in health research

What needs to be done?

For decades, research has been male dominated: research led by men with male participants. Two-thirds of heart disease and stroke clinical research is based on men.¹ When research is led by women, sex and gender analyses are more likely to be incorporated into the research itself, and the levels of sex reporting also increases.² Unfortunately, the low involvement of women in research- especially women who are visible minorities- as both researchers and participants has led to findings that are not always applicable to women, resulting in gaps in diagnosis, treatment, care and recovery. Applying a sex and gender lens to methods and analysis in research also leads to higher quality results.^{3,4}

Sex refers to biological attributes while gender reflects a spectrum of expressions of identities and socially constructed roles.⁵ In health research, *sex and gender specific reporting* is the capture of the sex and/or gender of participants or cell specimens used, and the presentation of research findings by sex and gender. *Sex and gender-based analysis* is the systematic examination of research results by sex and gender⁵ and the exploration of how sex and gender shape disease onset, diagnosis, treatment and recovery. Together, *sex and gender-based analysis and reporting* (SGBAR) in health research has the potential to expand our understanding of

health determinants and ensure that the findings are relevant and reflect the diversity of the entire population. SGBAR must be consistently applied and integrated into research.

This call to action is growing in strength and volume in Canada. A Heart & Stroke survey found that 80% of Canadians polled support provincial governments and research funders requiring the research they fund to not only include male and female participation, but also better study how diseases affect women and men differently including impacts on diagnosis, treatment and support.⁶ Canada has shown leadership in recognizing and taking action on SGBAR, specifically Canada's three major government funding bodies (CIHR, NSERC, SSHRC). However, a truly integrated and nation-wide SGBAR initiative will take years to implement, requiring action from all levels by many partners and stakeholders, including governments, research institutions, academic institutions, research funders, people with lived experience (including caregivers) and others, working together.

What are we proposing?

Heart & Stroke strongly encourages provincial governments, research institutions, academic institutions and research funders, to commit to an SGBAR approach in health research by: supporting knowledge exchange and training on SGBAR; setting expectations of SGBAR integration in research strategies; prioritizing women-specific research for women of all ethnicities; and translating research results for transformative action. The following recommendations should be considered:

1. Research funders, research institutions and academic institutions should:
 - a. Strongly recommend training and education on sex and gender in research for researchers across the career span.
 - i. Use high quality training and education materials produced by credible agencies, such as the Institute of Gender and Health.
 - b. Train peer reviewers, who are adjudicating research proposals with SGBAR, to consistently assess the quality of SGBAR integration in those research proposals.
 - c. Facilitate the integration of SGBAR within their research strategy by:
 - i. Convening key stakeholders and influencers within the research program in consultation processes.
 - ii. Working in partnership with people with lived experience when developing, implementing and evaluating SGBAR action plans to ensure their needs are addressed.
 - iii. Collecting baseline measurements to assess organizational gaps and barriers.
 - iv. Working in partnership with research services departments, ethics committees and other key stakeholders to develop a goals-based action plan that is evidence-based and evaluated on both process and outcome measures.
 - v. Ensuring that research funders, research institutions and academic institutions appoint a sex and gender lead(s) within the institution.
2. Faculties of medicine, nursing and allied health (i.e., rehabilitation, physiotherapy, social work, occupational health etc.) should incorporate education on SGBAR into curricula, specifically in courses on research design and methodology.

3. Accredited providers of continuing education credits for medical and allied health professionals should ensure accredited programming integrates SGBAR, such as by requiring content be sex and gender stratified.
4. Academic institutions, through their institutional sex and gender leads, should encourage academic journals to integrate SGBAR into submission standards (where relevant) by implementing Sex and Gender Equity in Research (SAGER) guidelines.⁷

Why now?

- Despite progress, women of all ethnic backgrounds are still under-diagnosed, under-treated, under-supported and under-aware when it comes to heart and brain health.^{1,8-11}
- Heart disease is the leading cause of premature death for women in Canada¹² and one-third more women die of stroke than men.¹³
- Researchers are failing to incorporate sex and gender into relevant research.^{1,2,14}
- Biases and failure to adopt SGBAR guidelines in research create gaps in knowledge and medical practice.^{9,10} These gaps prevent women from being treated with the most appropriate therapies.^{9,10}
- When women researchers play a leading role in research publications, there is an increase in reporting by sex² yet biases remain that prevent women researchers from achieving their full potential.¹⁵

What's the opportunity?

- Women's heart and brain health would be better supported if it were better understood. Further SGBAR in health research would help determine why women have worse outcomes than men when they experience heart disease and stroke.
- Heart disease and stroke are an enormous burden on families, with an estimated economic burden of up to \$25 billion annually,^{16,17} and women are disproportionately affected by these conditions. SGBAR is an important step in redressing these long-standing inequities with the potential to improve women's outcomes and reduce the burden across the healthcare system.
- The commitment of the federal government's three largest granting agencies to SGBAR provides an example and momentum for other government funding agencies to make similar commitments to SGBAR in health research.



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