

APS issues new policy requiring identification of sex or gender in reporting scientific research

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The American Physiology Society (APS) has announced a new policy requiring the reporting of the sex of experimental animals and the sex or gender of humans used in studies submitted for publication in any of the organization's 13 peer-reviewed journals. This notable requirement for all research study authors has been approved by the APS leadership and will be presented in an editorial, "[In Pursuit of Scientific Excellence – Sex Matters](#)," written by Virginia Miller, Ph.D., Professor, Surgery and Physiology, Mayo Clinic, Rochester, Minn. The announcement was made by Hershel Raff, Ph.D., Chair of the society's Publications Committee. He added that the editorial will appear in the journals beginning this month.

At first glance this change in author guidelines appears to align to the overall acceptance by the scientific community that [sex](#) or gender issues must be addressed in the conduct and reporting of physiological and scientific research. "Unfortunately, what has been accepted in theory by the research community has not been universally reflected in the current content of scientific journal articles," said Dr. Miller in an interview. "With the acceptance that 'sex does matter', it would follow that scientific journal research articles would report sex or gender of the experimental material in the Methodology section of the submitted content but this has not been the case," she said.

Why Sex and Gender Matter

Dr. Miller points to the 2001 the Institute of Medicine (IOM) of the National Academy of Sciences report, "Exploring the Biological Contributions to Human Health: Does Sex Matter?" which offered the first significant assessment of sex and gender differences in biomedical research and determined that sex does matter. The IOM report, supported by the Society for Women's Health Research, found that sex differences important to health and human disease occur at conception and throughout the life span, affecting behavior, perception, and health. However, a recent published review of basic science journals, including studies of cells in culture from high impact cardiovascular journals, and of basic and clinical scientific literature, suggests that sex of experimental material is not consistently reported.

"The literature review found that less than 40 percent of studies using experimental animals and only about 25 percent of studies using cells in culture identified the sex of the experimental material. This percentage is low given the growing knowledge base indicating that physiology and pathophysiology differ between male and female animals and humans beyond reproductive function to include all physiological systems," according to the editorial.

The article offers future authors guidance on how the sex of experimental material should be reported. Proposed IOM definitions state that "sex" is a biological construct dictated by the presence of sex chromosome and in animals and humans the presence of functional reproductive organs. On the other hand, "gender" is a cultural concept referring to behaviors which might be directed by specific stimuli (visual, olfactory) or by psychosocial expectations that result from assigned or perceived sex and therefore can influence biological outcomes. The new editorial policy for all APS journals requires the reporting of sex for cells, tissues and experimental animals and humans (i.e. male and female) or gender where appropriate and suitable for the experimental design of the research effort. "In the era of physiological

genomics and individualized medicine, the presence of an XX or XY chromosomal complement is fundamental to the genome of an individual person, animal, tissue or cell," writes the author.

Publication and Clinical Medicine

Dr. Miller, who is a past member of the APS governing Council and who has held leadership positions for six scientific journals and provides peer review for the National Institutes of Health, the National Science Foundation, and other health-related research organization, closes the editorial with a call for other scientific journals to adopt similar policies. She advocates that in our pursuit of scientific excellence, sex matters, and promotes that adoption of this policy by all journal reviewers; associate editors and editors will improve communication of scientific results and perhaps assist in more rapid translation of information from basic science to clinical medicine.

According to Raff, "The APS believes that our society must be a leader in instituting and enforcing a policy for reporting sex and gender in experimental studies. The reporting strengthens our understanding of physiology, which is the basis of translational medicine." The policy is currently in effect for all APS journals.

Provided by American Physiological Society

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