

More than just anatomy—sex differences in the lower urinary tract

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The biological differences between women and men go beyond basic anatomy. Researchers must consider sex differences down to the cellular level in order to discover crucial information about the varied development, function, and biology between women and men.

A new report written by the Society for Women's Health Research's Interdisciplinary Network on Urological Health in Women and published today in the *Biology of Sex Differences* journal highlights how improving our knowledge about [sex differences](#) in cell biology in the female and male lower urinary tract may help stimulate breakthroughs in the diagnosis and management of urinary dysfunction for both women and men.

For example, while anatomical differences between the sexes have long been thought to be the reason women experience significantly more [urinary tract infections](#) (UTIs) than men, more recent evidence supports the existence of other, non-anatomical contributors to women's increased vulnerability.

The location of the female external urethra and the shorter length of that urethra are typically cited as why women get UTIs up to 30 times more often than men do, with more than half of all women experiencing at least one UTI during their lifetime. However, recent research investigating the role of the reticuloendothelial system, which provides immunity against microbes, suggests that differential expression of immune cells in the bladder may amplify the rate of UTIs in women.

"In addition to our basic anatomy, women and men exhibit sex differences at the cellular level that influence both the form and function of the lower urinary tract," said senior author Margot S. Damaser, Ph.D., staff and professor at the Cleveland Clinic and senior research scientist at the Cleveland VA Medical Center. "These differences need to be taken into account when treating urinary dysfunction in order to provide optimal treatment for both [women](#) and men."

The authors note that the review paper should serve as an overview of the current knowledge regarding sex differences in the lower urinary tract, as well as a catalyst for investigators seeking to contribute to the field.

Further investigation of sex differences in lower urinary tract cell types is necessary to better develop our understanding of normal and abnormal function, and specifically, the paper states that more research is needed regarding:

- How sex differences in urinary microbiome impact susceptibility to UTIs
- Whether sex differences in native reticuloendothelial system cell populations mediate variations in susceptibility to UTIs
- The role of sex hormones on [lower urinary tract](#) development, physiology and susceptibility to malignancies like cancer

More information: Benjamin Abelson et al, Sex differences in lower urinary tract biology and physiology, *Biology of Sex Differences* (2018). [DOI: 10.1186/s13293-018-0204-8](https://doi.org/10.1186/s13293-018-0204-8)

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