



# PRESS RELEASE

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## ANALYSIS REVEALS SEX DIFFERENCES IN THE RECOGNITION, MONITORING, AND TREATMENT OF CHRONIC KIDNEY DISEASE

### Highlight

- Among adults in Stockholm, Sweden with low kidney function suggestive of chronic kidney disease in 2009–2017, women were less likely than men to receive a diagnostic code related to kidney disease, be referred to a nephrologist, have their kidney function monitored, and receive guideline-recommended medications.

**Washington, DC (July 29, 2022)** — New research published in *JASN* reveals profound sex differences in the detection, monitoring, and management of chronic kidney disease (CKD) in Sweden. Efforts to ensure equitable care between sexes could have important implications in reducing the burden of CKD in the country and elsewhere.

Worldwide, there are sex differences in the causes, prevalence rates, progression, and outcomes of persons with CKD that could be explained by biological differences between men and women, but also by differences in the quality of care provided to them. Importantly, guidelines have well-defined recommendations on how to screen, diagnose, monitor, and care for individuals at risk of CKD or with established CKD, and these recommendations are not sex-based.

A team led by Juan Jesus Carrero, Pharm, PhD and Oskar Swartling, an MD, PhD student (Karolinska Institutet, Sweden) studied a variety of CKD-care indicators among 227,847 people with a first-ever detected low level of kidney function denoting probable CKD in Stockholm's health system from 2009–2017.

The investigators found that compared with men with similar characteristics, women were less likely to receive a diagnostic code related to CKD, be referred to a nephrologist, and have their kidney function monitored. Additionally, women were less likely to receive guideline-recommended medications.

"We were expecting to find small or no disparities in how men and women were managed, because guidelines do not make distinctions by sex. Instead, we observed profound differences in the detection work up and management of chronic kidney disease suggesting suboptimal care among women. Surprisingly, these differences were observed across high-risk groups and indications, such as women with diabetes, macroalbuminuria, or advanced chronic kidney disease," said Dr. Carrero. "This study

identifies healthcare gaps that may explain previously reported sex differences in the prevalence, progression rates, and outcomes of persons with chronic kidney disease.”

Analyses of time trends during the last decade showed that many indicators are improving over time—for example, there has been an increase in the rate of certain tests of kidney function over the years, but the rate of testing among women with CKD has been persistently lower than that of men.

“We are unable to identify the reasons between this potential under-management, and speculate on possible causes, such as challenges in interpreting serum creatinine— a marker of kidney function and a waste product of the normal wear and tear on muscles of the body—in women who on average are smaller and have lower muscle mass than men,” said Swartling. “It is also possible that subconscious biases operate among healthcare professionals, believing that CKD is less problematic in women, or that women themselves more likely deny their disease. In any case, our study brings attention to healthcare gaps amenable to correction.”

Although it’s unclear whether the findings are generalizable to other health systems, isolated observations in other reports support the existence of such sex gaps in the UK, Canada, and the US.

Additional co-authors include Yuanhang Yang, MD, Catherine M. Clase, M.B. MSc, Edouard L. Fu, MD, PhD, Manfred Hecking, MD, PhD, Sebastian Hödlmoser, Biostat, YlvaTrolle Lagerros, MD, PhD, and Marie Evans, MD, PhD.

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The article, titled “Sex Differences in the Recognition, Monitoring and Management of Chronic Kidney Disease in Health Care,” will appear online at <http://jasn.asnjournals.org/> on July 29, 2022; doi: 10.1681/ASN. 2022030373.

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