

# Women in academic cardiology are significantly less likely to be full professors

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The first study to evaluate sex differences in academic ranking among academic cardiologists has found that women were significantly less likely than men to be full professors, even when adjusting for factors such as age, years of experience and research productivity that are traditionally associated with academic rank. The report from investigators at Massachusetts General Hospital (MGH) has been published in the American Heart Association journal *Circulation*.

"These findings highlight a potential inequity in how men and women in academic cardiology are recognized and rewarded for their work and could reflect the fact that women face persistent barriers to academic advancement," says Daniel M. Blumenthal, MD, MBA, of the MGH Division of Cardiology, lead and corresponding author of the report. "Recruiting more women into cardiology is a top priority for both the American Heart Association and the American College of Cardiology, not only because cardiology continues to be a male-documented specialty but also because many recent studies suggest that the U.S. is facing a growing shortage of cardiologists in several regions. Addressing any inequities facing women in cardiology will be critical to the success of efforts to recruit more women into our specialty."

Blumenthal and his co-authors note that, while the proportion of women in cardiology has risen from 5 percent in 1996 to 12 percent in 2013, cardiology still has the lowest proportion of women of any medical specialty. Numbers of women are lowest in the procedural subspecialties of interventional cardiology and electrophysiology. Previous studies have

documented sex-related differences in salaries and in the perceived speed of professional advance, with 69 percent of female cardiologists responding to a 2006 survey reporting some instance of workplace discrimination. But no previous study specifically investigated differences in faculty rankings among academic cardiologists.

To address that issue the research team first identified all cardiologists on the 2014 faculty roster of the American Association of Medical Colleges. They then matched them to their entries in the comprehensive Doximity database, which includes all U.S. physicians and documents factors such as medical school, years since graduation and residency completion, specialty and subspecialty, number of National Institutes of Health (NIH)-sponsored grants listing the physician as principal investigator, and involvement in clinical trials. Along with focusing on cardiologists, the researchers also compared sex differences in full professorship status within cardiology to differences among seven other internal medicine specialties - gastroenterology, infectious disease, pulmonary medicine, rheumatology, oncology, nephrology and endocrinology.

Of the more than 3,800 cardiologists identified in the study, 16.5 percent were women. In the overall, unadjusted analysis, female cardiologists were less likely to be full professors (15.9 percent versus 30.6 percent for males), similarly likely to be associate professors (24 percent versus 22.6 percent) and more likely to be assistant professors (60.2 percent versus 46.8 percent). Even after adjusting for factors known to affect academic rankings, women were still less likely to be full professors, and although there were significant differences in the size of the discrepancy across the 109 U.S. medical schools, at none of them were women equally likely to be full professors.

Across all specialties, women had significantly lower likelihood of being full professors only in cardiology and infectious disease, specialties in

which a lot of physicians also hold PhD degrees. While the presence of NIH funding did not affect the relationship between sex and full professorship, women had slightly lower odds than men of have two or more NIH grants, and having multiple grants significantly increased the likelihood of full professorship.

While this study could not document specific reasons behind the disparity in full professorship, the study authors note specific challenges facing female cardiologists—including home and child care responsibilities, lack of early-career institutional support, lack of mentorship and role models, limited availability of alternative or part-time tracks leading to faculty advancement for nonresearchers, and unconscious or overt discrimination. Another concern for women in their childbearing years is exposure to radiation, which is unavoidable in the subspecialties of interventional [cardiology](#) and electrophysiology, both of which were associated with a greater likelihood of full professor status.

"Evaluating sex differences in full professorship helps us broaden our understanding of the ways the careers of [women](#) in academic medicine may be different from those of men," says Blumenthal. "Promotion is a critical reward for the work that academic physicians do. We forego higher salaries and better hours in private practice or industry and devote ourself to serving the academic enterprise because we believe that will make a greater contribution to improving the lives of patients and advancing science. In return, many of us place a tremendous value on academic advancement and becoming full professors, and many academic physicians spend most or all of their careers working towards this goal."

Blumenthal adds that, since this study reflects only a single point in time, further research is needed to follow a group of academic physicians over time to determine any [sex differences](#) in promotion. Also important to

investigate will be the influence of leadership positions on academic rank and a better indicator of the extent of clinical work, which in this study was reflected only by Medicare revenue.

**More information:** Daniel M. Blumenthal et al, Sex Differences in Faculty Rank Among Academic Cardiologists in the United States Clinical Perspective, *Circulation* (2017). DOI: [10.1161/CIRCULATIONAHA.116.023520](https://doi.org/10.1161/CIRCULATIONAHA.116.023520)

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