

Kidney stones associated with modest increased risk of coronary heart disease in women, but not men

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An analysis of data from three studies that involved a total of more than 240,000 participants found that a self-reported history of kidney stones was associated with a statistically significant increased risk of coronary heart disease among women but no significant association was evident for men, according to a study in the July 24/31 issue of *JAMA*.

"Nephrolithiasis [[kidney stones](#)] is a common condition, with the prevalence varying by age and sex. A recent estimate from the National Health and Nutrition Examination Survey, a representative sample of the U.S. population, reported the prevalence of a history of kidney stones of 10.6 percent in men and 7.1 percent in women. The overall prevalence has increased from 3.8 percent (1976-1980) to 8.8 percent (2007-2010)," according to background information in the article. Kidney stone disease may be associated with an increased risk of [coronary heart disease](#) (CHD). "Previous studies of the association between kidney stones and CHD have often not controlled for important risk factors, and the results have been inconsistent."

Pietro Manuel Ferraro, M.D., of Columbus-Gemelli Hospital, Rome, and colleagues analyzed the relation between kidney stones and risk of incident CHD for individuals with a history of kidney stones. The analysis included 45,748 men and 196,357 women in the United States without a history of CHD at baseline who were participants in the Health Professionals Follow-up Study (HPFS) (45,748 men 40-75 years of age;

follow-up from 1986 to 2010), Nurses' Health Study I (NHS I) (90,235 women 30-55 years of age; follow-up from 1992 to 2010), and Nurses' Health Study II (NHS II) (106,122 women 25-42 years of age; follow-up from 1991 to 2009). The diagnoses of kidney stones and CHD were updated biennially during follow-up. Coronary [heart disease](#) was defined as fatal or nonfatal myocardial infarction (MI; [heart attack](#)) or [coronary revascularization](#).

Of a total of 242,105 participants, 19,678 reported a history of kidney stones. After up to 24 years of follow-up in men and 18 years in women, 16,838 incident cases of CHD occurred. "Multivariable-adjusted analysis of individual outcomes confirmed an association in NHS I and NHS II participants between history of kidney stones and myocardial infarction and revascularization. After pooling the NHS I and NHS II cohorts, women with a history of kidney stones had an increased risk of CHD, fatal and nonfatal [myocardial infarction](#), and revascularization," the authors write.

After multivariable adjustment, there was no significant association between history of kidney stones and CHD in the men's cohort.

"Our finding of no significant association between history of kidney stones and risk of CHD in men but an increased risk in [women](#) is difficult to explain, even though we could not determine whether this was due to sex or some other difference between the male and female cohorts. However, differences by sex are not infrequent in studies analyzing the association between nephrolithiasis and either CHD or risk factors for CHD," the researchers write.

"Further research is needed to determine whether the association is sex-specific and to establish the pathophysiological basis of this association."

More information: *JAMA*. 2013;310(4):408-415

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