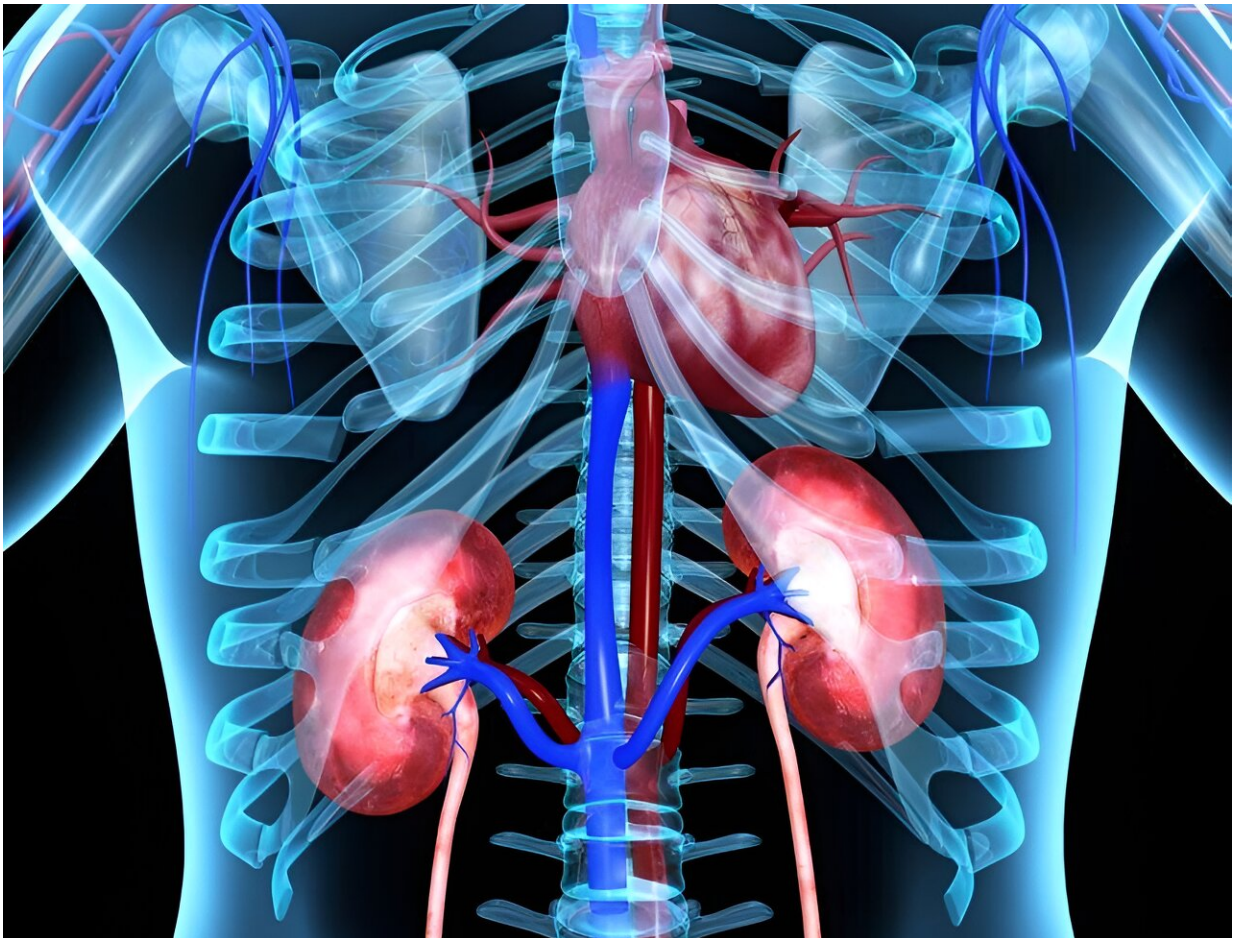


# Heart failure causally linked to chronic kidney disease

December 19 2023, by Elana Gotkine

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Heart failure is causally associated with chronic kidney disease (CKD),

according to a study published online Dec. 11 in *PLOS ONE*.

Junyu Zhang, from Hunan University of Chinese Medicine in Changsha, China, and colleagues used data from European populations, including 930,014 controls and 47,309 cases of heart failure from the HERMES consortium and 736,396 controls and 51,256 cases of CKD, to examine the relationship between heart failure and CKD. Several Mendelian randomization (MR) variations were employed to assess the bidirectional causal relationship.

The researchers found that the individuals with a [genetic predisposition](#) for heart failure had an elevated risk for CKD in the MR analysis. A significant association was revealed between the genetic prediction of heart failure and risk for CKD, as seen by the Inverse Variance Weighted (IVW) method (odds ratio, 1.12; 95 percent confidence interval, 1.03 to 1.21) and the Weighted Median Estimator (WME: odds ratio, 1.14; 95 percent confidence interval, 1.03 to 1.26). Even after conducting an MR analysis while adjusting for the effects of diabetes and hypertension, this causal relationship remained robust (odds ratios [95 percent confidence intervals] of 1.13 [1.03 to 1.23], 1.12 [0.85 to 1.48], and 1.15 [1.04 to 1.27] for IVW, MR-Egger, and WME, respectively). In reverse analyses, there was no significant causal link observed between CKD and heart failure.

"Unraveling the [causal relationship](#) between [heart failure](#) and CKD can offer new avenues for personalized medicine," the authors write.

"Subsequent research should investigate the possibility of treatment modalities tailored to particular patient subgroups to reduce the risk and progression of both diseases."

**More information:** Junyu Zhang et al, Causal relationship from heart failure to kidney function and CKD: A bidirectional two-sample mendelian randomization study, *PLOS ONE* (2023). [DOI:](#)

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