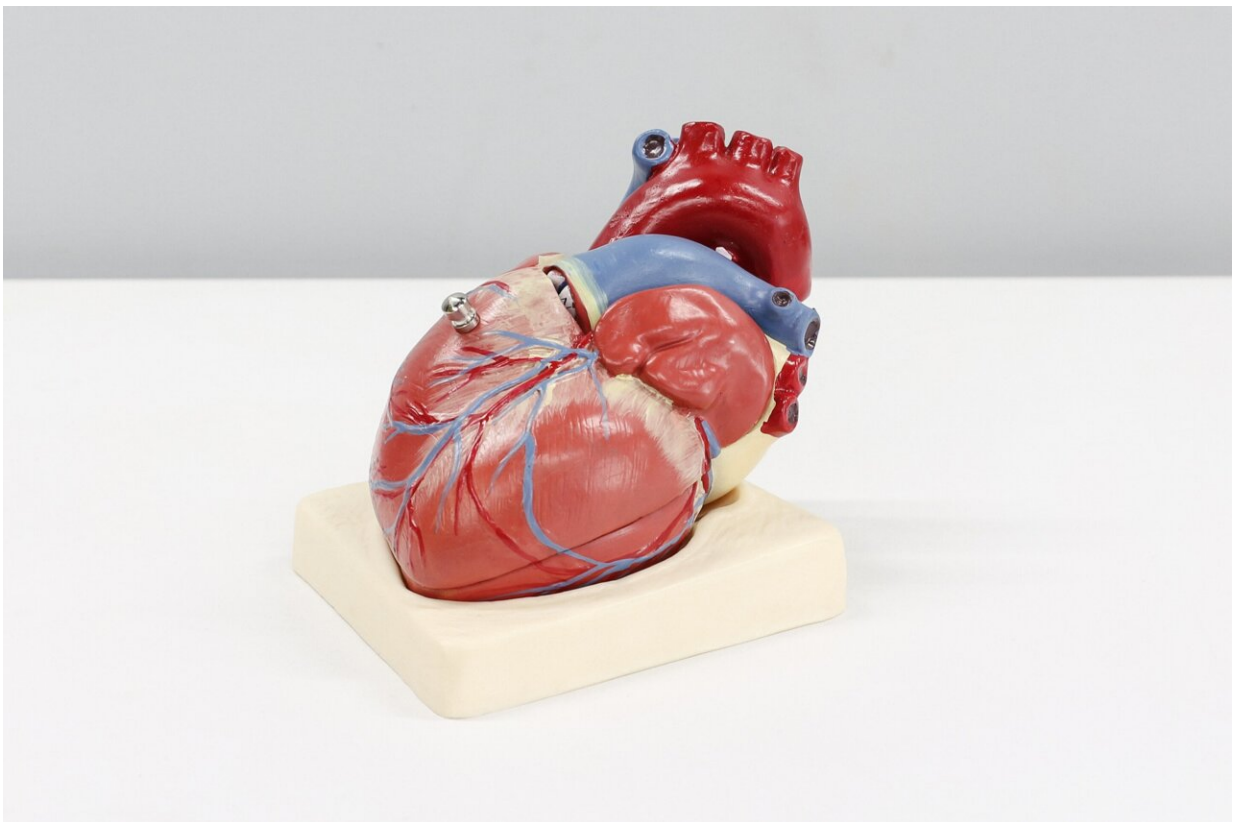


Study finds rural residents have 19% higher risk of heart failure than their urban counterparts

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Adults living in rural areas of the United States have a 19% higher risk of developing heart failure compared to their urban counterparts, and

Black men living in rural areas have an especially higher risk—34%, according to a large observational study supported by the National Institutes of Health.

The study, one of the first to look at the link between living in rural America and first-time cases of [heart failure](#), underscores the importance of developing more customized approaches to [heart](#) failure prevention among rural residents, particularly Black men.

"We did not expect to find a difference of this magnitude in heart failure among [rural communities](#) compared to urban communities, especially among rural-dwelling Black men," said Véronique L. Roger, M.D., M.P.H., the study's corresponding author and a senior investigator with the Epidemiology and Community Health Branch in NHLBI's Division of Intramural Research. "This study makes it clear that we need tools or interventions specifically designed to prevent heart failure in rural populations, particularly among Black men living in these areas."

Study co-author Sarah Turecamo, a fourth-year medical student at New York University Grossman School of Medicine, New York City, and part of the NIH Medical Research Scholars Program, agreed. "It is much easier to prevent heart failure than to reduce its mortality once you have it," Turecamo said.

Researchers from NHLBI and Vanderbilt University Medical Center analyzed data from The Southern Community Cohort Study, a long-term health study of adults in the southeastern United States. They compared the rates of new onset heart failure among rural and urban residents in 12 states (Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, and West Virginia).

The population, which included 27,115 adults without heart failure at

enrollment, were followed for about 13 years. Nearly 20% of participants lived in [rural areas](#); the remainder lived in urban areas. Almost 69% were Black adults recruited from community health centers that care for medically underserved populations.

At the end of the study period, the researchers found that living in rural America was associated with an increased risk of heart failure among both women and Black men, even after adjustment for other cardiovascular risk factors and socioeconomic status. Overall, the risk of heart failure was about 19% higher in [rural residents](#) than their urban counterparts.

However, Black men living in rural areas had the highest risk of all—a 34% higher risk of heart failure compared to urban-dwelling Black men. The study showed white women living in rural areas had a 22% increased risk of heart failure compared to white women in urban areas, and Black women had an 18% higher risk compared to Black women in urban areas. No association was found between rural living and heart failure risk among white men.

The exact reasons behind these rural-urban health disparities are unclear and are still being explored. Researchers said a multitude of factors may be at play, including structural racism, inequities in access to health care, and a dearth of grocery stores that provide affordable and healthy foods, among others.

"Finding an association between living in rural areas and an increased incidence of heart failure is an important advance, especially given its implications for helping to address geographic-, gender-, and race-based disparities," said David Goff, M.D., Ph.D., director of NHLBI's Division of Cardiovascular Sciences. "We look forward to future studies testing interventions to prevent heart failure in rural populations as we continue to fight heart disease, the leading cause of death in the U.S."

Heart failure is a chronic and progressive condition that develops when the heart does not pump enough blood for the body's needs. Common symptoms include shortness of breath during daily activities or trouble breathing when lying down. The condition, which has few treatment options, affects about 6.2 million American adults.

Heart failure can be prevented by following a heart-healthy lifestyle. NHLBI's Roger, who is also a practicing cardiologist, noted one of the biggest contributors to heart failure is hypertension, or high blood pressure, which Black men experience at disproportionately high levels. The condition should be intensively managed by checking blood pressure regularly and taking medications as prescribed. Other ways to reduce heart failure risk include avoiding all forms of tobacco, eating healthy, and exercising.

The research was published in *JAMA Cardiology*.

More information: Sarah E. Turecamo et al, Rurality and heart failure: The Southern Community Cohort Study, *JAMA Cardiology* (2023). [DOI: 10.1001/jamacardio.2022.5211](https://doi.org/10.1001/jamacardio.2022.5211)

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