

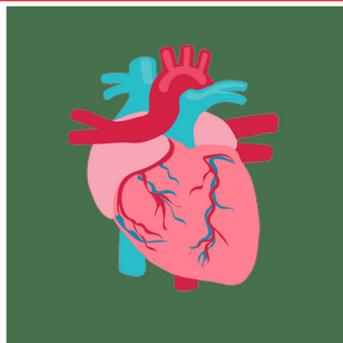
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# Food Insecurity and Cardiovascular Disease

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## Question

In adults, does food security as compared to food insecurity impact individuals' risk for developing or worsening cardiovascular disease?



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## Background

- According to the CDC, in the United States, one person dies every 36 seconds from cardiovascular disease (CVD) and accounts for 1 in 4 deaths each year (2022).
- Mayo Clinic describes heart disease as a range of disorders affecting the heart that include blood vessel disease (coronary artery disease), heart rhythm problems, heart valve disease, congenital heart defects, heart muscle disease, and heart infection (2021).
- Food insecurity is defined as households being "uncertain of having, or unable to acquire, enough food to meet the needs of all their members because they had insufficient money or other resources" (United States Department of Agriculture [USDA], 2021).
- The USDA (2021) reported in 2020, 13.8 million U.S. households experienced food insecurity.

*This work is not an original. This is an evidence-based practice brief that includes published research conducted by professionals. Guidance was provided by Stephanie Burkholder and Melissa Kukulski, professors of NU307: Evidence-Based Practice Research Methods.*

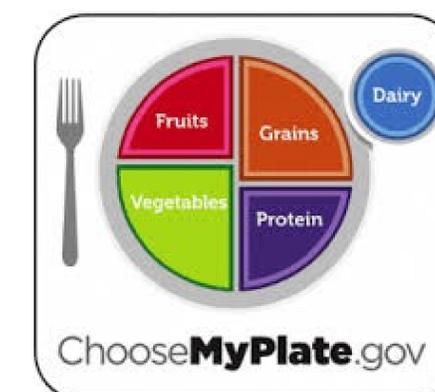
Study	Description	Findings
Food Insecurity is Associated with All-Cause Mortality Among Adults in the United States. (Sun et al., 2020).	<b>Level II, large prospective cohort study</b> that studied how food insecurity impacted the mortality of those with cardiovascular disease. The participants used were anyone who had any underlying form of CVD before their death and were food insecure.	The mortality of those who were food insecure and had CVD were found to have an increased chance of mortality. Food insecurity was also shown to increase the risk of all-cause mortality.
Scope and Social Determinants of Food Insecurity Among Adults with Atherosclerotic Cardiovascular Disease in the United States (Mahajan et al., 2021).	<b>Level IV, retrospective cross-sectional study</b> which studied the correlation between food insecurity and atherosclerotic cardiovascular disease (ASCVD) through a national health interview survey.	Those with ASCVD were found to have 1.24 higher odds of having food insecurity compared to those who did not have ASCVD. The characteristics that were found in those with ASCVD and food insecurity included those over 65 years of age, women, poor/low income, divorced/widowed/separated marital status, private or no health insurance, and non-Hispanic Black or Hispanic race/ethnicity.
Pathways by which Food Insecurity is Associated with Atherosclerotic Cardiovascular Disease Risk (Palakshappa et al., 2021).	<b>Level V, cross-sectional study</b> used the NHANES to assess food security, by looking at HEI-2015 score, BMI, and waist circumference, and its impact on CVD.	The risk of CVD increased primarily among participants who reported being in a very low food-secure situation. Food insecure participants reported not having a routine place to go for health care, their usual source of care was not a clinic or doctor's office, and not seeing a doctor or other health care professional in the prior 12 months, which increased their risk of CVD.
Food Security and 10-Year Cardiovascular Disease Risk Among U.S. Adults (Vercammen et al., 2019).	<b>Level V, cross-sectional study</b> that assessed the correlation of FS and CVD with the NHANES, home interviews, an exam to evaluate physical activity, weight, height, blood pressure, and laboratory measurements, and finally, a random subsample within the sample underwent a fasting metabolic panel.	Within the three models created in the study, all showed that households with marginal and very low food security have significantly elevated odds of CVD risk when compared to food-secure households. Adults in households with food insecurity have an increased CVD risk factor prevalence as well.
Associated Between Food Security and 10-Year Cardiovascular Disease Risk Differs by Gender and Weight Status (Lee, 2021).	<b>Level V cross-sectional study</b> that used the 2012-2015 KNHANES and Framingham CVD risk score to evaluate the association between FS status and 10-year estimated CVD risk and further determined whether the association differed by gender or weight status.	Lower FS status was associated with a high 10-year CVD risk in men. In non-overweight Koreans, low FS status was found to be associated with high 10-year CVD risk. Overweight men with marginal FS status had higher CVD risk. An increased 10-year CVD risk was associated with lower FS status and did differ by gender and weight.
Cardiovascular Health, Adiposity, and Food Insecurity in an Underserved Population (Myers, 2019).	<b>Level V cross-sectional study</b> that investigated participants in underserved communities in Louisiana to determine associations between CVH, adiposity, and food insecurity by race, sex, and health literacy using data from the 2016-2016 PROPEL trial.	Overall, there were significant positive associations between food insecurity and BMI, where BMI was significantly higher in patients with food insecurity. CVD was not significantly different by FS status. The results did not determine a strong relationship between food insecurity and CVH.

## Results

- More research is needed in order to determine a stronger correlation between food insecurity and CVD.
- Due to the studies being correlational, no cause-effect relationship can be determined.
- The research suggested that there was an association between food insecurity and CVD.
- Participants who had a lower FS status had an increased risk for developing CVD.



<https://www.heart.org/en/news/2022/03/03/eating-too-many-sulfur-amino-acids-may-boost-cardiovascular-disease-and-death-risk>



<https://eliteclubs.com/myplate-and-the-history-of-food-guides/>

## Application

- Nurses can use this research to educate patients about healthier nutrition options and ways to reduce CVD risk.
- This research can be used by nurses to prioritize prevention of CVD rather than treatment and better plan interventions based on FS status.
- Nurses can use this research to prioritize assessments of individuals who are food insecure.