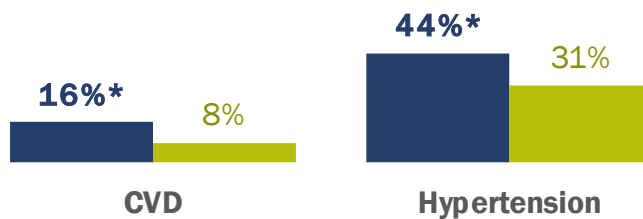


Research has identified a strong link between the level of food insecurity (not having access to enough food) and cardiovascular disease (CVD) risk<sup>1</sup> and death.<sup>2</sup> This makes food security essential to the health and well-being of those with and at risk for CVD. A diet of nutritious foods is essential for heart health and CVD prevention.<sup>3</sup>

## Heart Health and Food Security

The prevalence of CVD is double among Vermont adults experiencing food insecurity than those who are food secure (16% vs. 8%). A difference is also seen among those with diagnosed hypertension (44% vs. 31%), a condition that often leads to CVD.

**Food Insecurity is associated with significantly poorer heart health outcomes than Food Security**



Data Source: VT Behavioral Risk Factor Surveillance System (BRFSS), 2022.

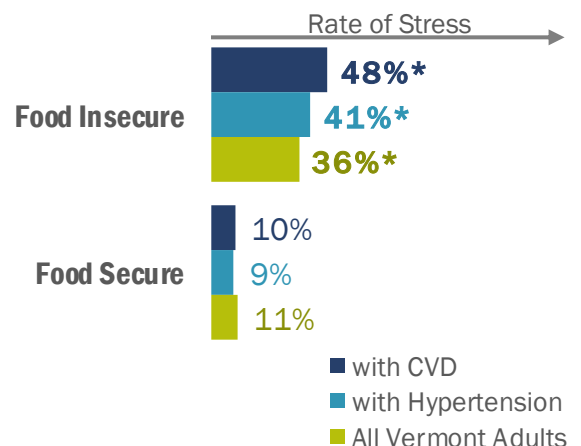
\* Statistical difference from food secure.

## Stress

Stress among Vermont adults is significantly higher among those experiencing food insecurity than those who do not worry about access to food. Stress can lead to health issues and is often an overlooked risk factor for CVD.<sup>4</sup>

- Stress increases inflammation and causes hypertension and lowers HDL “good” cholesterol.
- Chronic stress is linked to poor sleep, decreased exercise, inadequate nutrient intake and harmful weight gain which further increases the risk or severity of CVD

**The rate of stress is significantly higher among those who are food insecure compared to those who are food secure**



Data Source: VT BRFSS, 2022.

\* Statistical difference from food secure.

### KEY POINTS

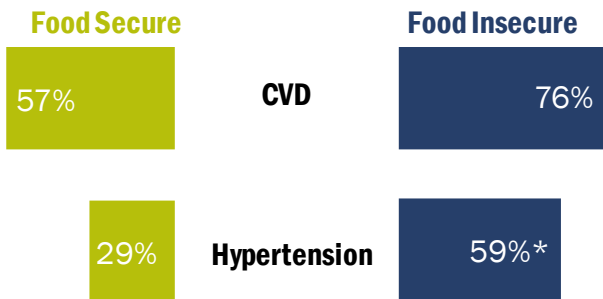
- **Prevalence of CVD and hypertension is significantly higher among adults experiencing food insecurity.**
- **Stress is significantly higher among those experiencing food insecurity.**
- **Food insecurity is more common among adults with CVD or hypertension who had 3 or more co-occurring chronic diseases.**

# Cardiovascular Disease and Food Security

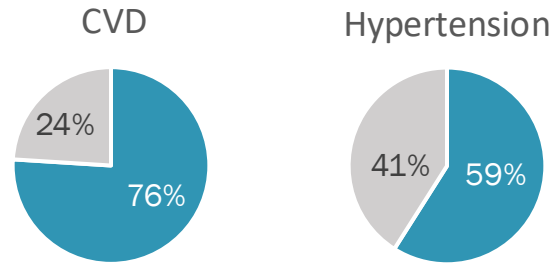
## Health Outcomes

Vermont adults with CVD and hypertension who experience food insecurity are more likely to have three or more co-occurring<sup>^</sup> chronic diseases than those who are food secure.

Rate of 3 or more co-occurring chronic diseases



Among Vermont adults with CVD and hypertension who experience food insecurity, it is significantly more likely that they have 3 or more co-occurring<sup>^</sup> chronic diseases than 0-2 co-occurring chronic diseases.

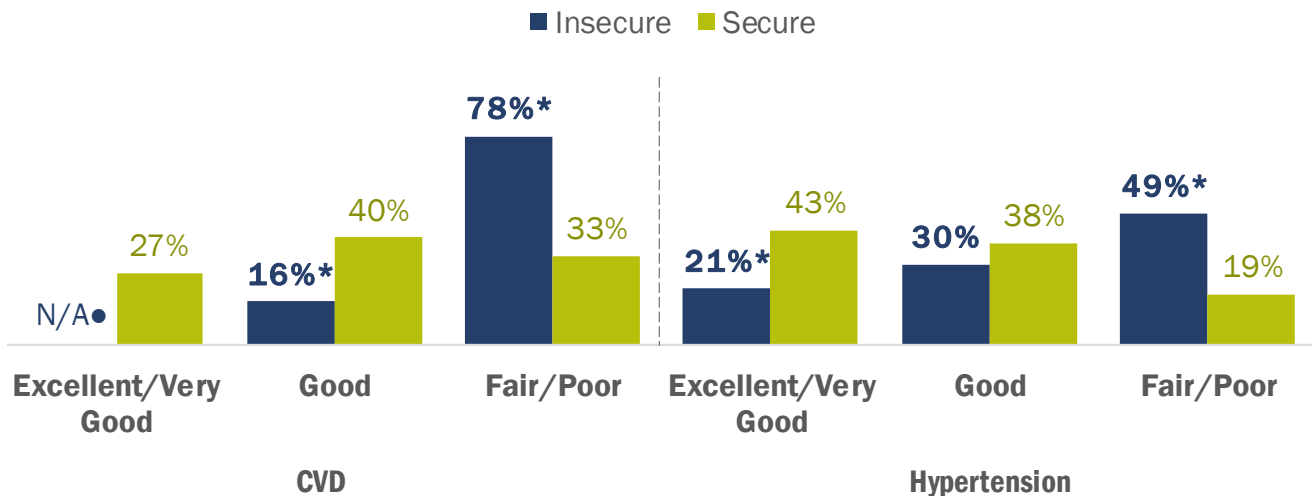


Data Source: VT BRFSS, 2022.

<sup>^</sup> Chronic diseases assessed include arthritis, asthma, cancer (other than skin cancer), CVD, chronic kidney disease (CKD), chronic obstructive pulmonary disorder (COPD), depressive disorder, diabetes, and BMI-defined obesity.

\* Statistically significant difference from food secure.

Those experiencing food insecurity along with CVD (78%) or hypertension (49%) are more likely to report fair or poor health.



Data Source: VT BRFSS, 2022.

\* Statistically significant difference from food secure.

• Data suppressed due to low statistical reliability.

## Key Takeaways

The risk of a heart-related condition increases with food insecurity. A greater proportion of those with hypertension, and an even greater proportion of those with CVD, experience food insecurity compared to all Vermont adults.

Those experiencing food insecurity tend to have more co-occurring chronic diseases as well as a poorer perception of their health. Food insecurity is only one form of stress. Those experiencing food insecurity typically experience other forms of socioeconomic stress (i.e., housing, transportation, employment, etc.). Recognizing the social and structural determinants that influence stress and food security can help improve cardiovascular health outcomes.

People's perception of their overall health decreases with food insecurity.



Learn more about preventing heart disease and nutrition access on the Health Department website:

- Preventing Heart Disease: [CVD Resources for Individuals and Families](#)
- Nutrition & Food Access: [Resources in Vermont](#)

## References:

- <sup>1</sup> Liu Y, Eicher-Miller HA. Food Insecurity and Cardiovascular Disease Risk. *Curr Atheroscler Rep.* 2021;23(6):24. Published 2021 Mar 27. doi:10.1007/s11883-021-00923-6 [www.ncbi.nlm.nih.gov/pmc/articles/PMC8000689/](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC8000689/)
- <sup>2</sup> Sun Y, Liu B, Rong S, et al. Food Insecurity Is Associated With Cardiovascular and All-Cause Mortality Among Adults in the United States. *J Am Heart Assoc.* 2020;9(19):e014629. doi:10.1161/JAHA.119.014629 [www.ahajournals.org/doi/full/10.1161/JAHA.119.014629](http://www.ahajournals.org/doi/full/10.1161/JAHA.119.014629)
- <sup>3</sup> Tyrovola D, Soulaïdopoulos S, Tsioufis C, Lazaros G. The Role of Nutrition in Cardiovascular Disease: Current Concepts and Trends. *Nutrients.* 2023;15(5):1064. Published 2023 Feb 21. doi:10.3390/nu15051064 [www.ncbi.nlm.nih.gov/pmc/articles/PMC10005442/](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC10005442/)
- <sup>4</sup> Johns Hopkins Medicine. Risk Factors for Heart Disease: Don't Underestimate Stress. Accessed June 6, 2024. [www.hopkinsmedicine.org/health/wellness-and-prevention/risk-factors-for-heart-disease-dont-underestimate-stress](http://www.hopkinsmedicine.org/health/wellness-and-prevention/risk-factors-for-heart-disease-dont-underestimate-stress)

For more information: Paul Meddaugh, [paul.meddaugh@vermont.gov](mailto:paul.meddaugh@vermont.gov)