

Healthy diet could save \$50 billion in health care costs

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Approximately \$50 billion dollars of the annual healthcare cost of cardiometabolic disease in the US population could be associated with poor diet. Credit: marijana1, Pixabay

An unhealthy diet is one of the leading risk factors for poor health,

accounting for up to 45 percent of all deaths from cardiometabolic diseases (CMD), such as heart disease, stroke and type 2 diabetes. But the national economic burden of unhealthy diet habits remains unknown. A new study by investigators from Brigham and Women's Hospital, in collaboration with investigators at the Friedman School of Nutrition Science and Policy at Tufts University, analyzed the impact of 10 dietary factors—including consumption of fruits and vegetables, nuts and seeds, processed meats and more—and estimated the annual CMD costs of suboptimal diet habits. The team concludes that suboptimal diet costs approximately \$300 per person, or \$50 billion nationally, accounting for 18 percent of all heart disease, stroke and type 2 diabetes costs in the country. The team's findings are published in *PLOS Medicine*.

"There is a lot to be gained in terms of reducing risk and cost associated with heart disease, stroke and diabetes by making relatively simple changes to one's diet," said corresponding author Thomas Gaziano, MD, MSc, of the Division of Cardiovascular Medicine at the Brigham. "Our study indicates that the foods we purchase at the grocery store can have a big impact. I was surprised to see a reduction of as much as 20 percent of the costs associated with these cardiometabolic diseases."

To conduct their study, Gaziano and colleagues, including co-senior author Renata Micha, Ph.D., an associate research professor at Tufts, focused on the impact of 10 food groups—fruits, vegetables, nuts/seeds, whole grains, unprocessed red meats, processed meats, sugar-sweetened beverages, polyunsaturated fats, seafood omega-3 fats and sodium). Using data from the National Health and Nutrition Examination Survey (NHANES), the team created a representative U.S. population sample of individuals aged 35-85 years. Using a model they developed and termed the CVD PREDICT model, the team analyzed individual risk of cardiometabolic disease and associated costs for the sample population based on respondents' current dietary patterns. They then re-calculated costs for CMD if everyone's diet was optimized to the healthiest

amounts of the 10 foods and nutrients.

The team found that suboptimal diets account for \$301 per person in terms of CMD-related costs. This translates to more than \$50 billion nationally, 84 percent of which is due to acute care. Costs were highest for those with Medicare (\$481/person) and those who were eligible for both Medicare and Medicaid (\$536/person).

"We have accumulating evidence from the Food-PRICE collaborative research work to support policy changes focused on improving health at a population level. One driver for those changes is identifying the exorbitant economic burden associated with chronic disease caused by our poor diets. This study provides additional evidence that those costs are unacceptable. While individuals can and do make changes, we need innovative new solutions—incorporating policy makers, the agricultural and food industry, healthcare organizations, and advocacy/non-profit organizations—to implement changes to improve the health of all Americans," said co-senior author Renata Micha of the Friedman School of Nutrition Science and Policy at Tufts.

Three dietary factors contributed most to these costs: consumption of processed meats, low consumption of nuts/seeds, and low consumption of seafoods containing omega-3 fats.

The team notes that the current study may underestimate the cost of unhealthy diet habits as dietary factors may contribute to risk of diseases beyond heart disease, stroke and diabetes, such as cancer. While the study focuses on 10 dietary factors for which there were robust data, others may influence risk and cost as well. In addition, the study relied on dietary intake data collected from food questionnaires that asked respondents to recall what foods they had consumed in the past 24 hours. Respondents may have underreported unhealthy food choices or inaccurately recalled what they had consumed.

"Our work illustrates the need for interventions or policies that incentivize healthier dietary behavior as these changes have the potential to have a big impact and reduce the health and financial burden of cardiometabolic disease," said Gaziano.

More information: Jardim TV, Mozaffarian D, Abrahams-Gessel S, Sy S, Lee Y, Liu J, et al. (2019) Cardiometabolic disease costs associated with suboptimal diet in the United States: A cost analysis based on a microsimulation model. *PLoS Med* 16(12): e1002981. doi.org/10.1371/journal.pmed.1002981

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