

Twin study shows Mediterranean-style diet improves heart function

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A study of twins shows that even with genes that put them at higher risk of cardiovascular disease, eating a Mediterranean-style diet can improve heart function, according to research reported in *Circulation*:

Cardiovascular Quality and Outcomes, an American Heart Association journal.

Using data from the Emory Twins Heart Study, researchers found that men eating a Mediterranean-style diet had greater [heart rate](#) variability (HRV) than those eating a Western-type diet. Heart rate variability refers to variation in the time interval between heart beats during everyday life - reduced HRV is a risk factor for [coronary artery disease](#) and sudden death.

"This means that the autonomic system controlling someone's heart rate works better in people who eat a diet similar to a Mediterranean diet," said Jun Dai, M.D., Ph.D., study author and assistant professor of nutrition and epidemiology at Indiana University in Bloomington.

Eating a Mediterranean-style diet — one characterized by low saturated fats and high in fish, fruits, vegetables, legumes, nuts, olive oil, cereals and moderate alcohol consumption — reduces a person's heart disease risk. But until now, the way the diet helps reduce the risk of coronary disease remains unknown.

Dai and her colleagues analyzed dietary data obtained from a food frequency questionnaire and cardiac data results from 276 identical and

fraternal male twins. They scored each participant on how closely his food intake correlated with the Mediterranean diet; the higher the score, the greater the similarity to a Mediterranean-style diet.

To measure HRV, participants had their heart's electrical activity continuously measured and recorded with a Holter Monitor, a portable, battery operated electrocardiogram device.

Using twins allowed team members to assess the influence of the diet on HRV while controlling for genetic and other familial influence.

Among the study's key findings:

- Measurements of HRV showed that the higher a person's diet score, the more variable the [heart](#) beat-to-beat time interval — 10 percent to 58 percent (depending on the HRV measure considered) for men in the top [Mediterranean diet](#) score quarter compared to those in the lowest quarter; this equates to a 9 percent to 14 percent reduction in heart-related death.
- Genetic influence on HRV frequency ranged from 20 percent - 95 percent, depending on the HRV measure considered.

The study cannot be generalized to women or other ethnic groups because 94 percent of participants were non-Hispanic white males.

Provided by American Heart Association

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