

# Natural antioxidant can protect against cardiovascular disease: study

June 15 2012

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University of Minnesota Medical School researchers have collaborated with the School of Public Health and discovered an enzyme that, when found at high levels and alongside low levels of HDL (good cholesterol), can dramatically reduce the risk of cardiovascular disease.

The enzyme – glutathione peroxidase, or GPx3 – is a natural antioxidant that helps protect organisms from oxidant injury and helps the body naturally repair itself. Researchers have found that patients with high levels of [good cholesterol](#), the GPx3 enzyme does not make a significant difference. However, those patients with low levels of good cholesterol, the GPx3 enzyme could potentially be a big benefit. The enzyme's link to [cardiovascular disease](#) may also help determine cardiovascular risk in patients with low levels of good cholesterol and low levels of the protective GPx3.

The new research, published today by *PLoS One*, supports the view that natural antioxidants may offer the human body profound benefits.

"In our study, we found that people with high levels of the GPx3 enzyme and low levels of good cholesterol were six times less likely to develop cardiovascular disease than people with low levels of both," said lead author Jordan L. Holtzman, M.D., Ph.D., professor of pharmacology and medicine within the University of Minnesota Medical School. "This GPx3 enzyme gives us a good reason to believe that natural antioxidants like GPx3 are good for heart health."

The combination of low HDL and low GPx3 affects an estimated 50 million people – one in four adults – in the U.S. This condition can lead to fatal heart attacks and strokes. Researchers continue to look for new ways to better predict who is at risk for these diseases and how patients can limit the impact of the disease once it's diagnosed.

"It's important to point out that people should not rush out to their doctors and demand testing for the GPx3 enzyme," said Holtzman. "But in time, we hope that measuring this enzyme will be a common blood test when determining whether a patient is at risk for cardiovascular disease, including heart attacks and strokes."

To arrive at his results, Holtzman and his colleagues studied the three major risk factors for cardiovascular disease: hypertension, smoking and high cholesterol. Data suggests that those with low levels of HDL and GPx3 were six times more likely to die from cardiovascular disease, including heart attack or stroke, than those with low levels of HDL and high levels of GPx3.

The study examined 130 stored samples from the Minnesota Heart Survey from participants who died of cardiovascular disease after 5-12 years of follow-up care. The ages of patients studied ranged from 26-85 years old. Their data was compared to 240 control samples.

"This is an important [enzyme](#) for people with low HDL [cholesterol](#)," said Holtzman. "We think further research will be important in determining the future role of GPx3 and what drugs may serve to increase its activity in the blood."

Provided by University of Minnesota

Citation: Natural antioxidant can protect against cardiovascular disease: study (2012, June 15)

retrieved 20 April 2024 from

<https://medicalxpress.com/news/2012-06-natural-antioxidant-cardiovascular-disease.html>

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