

Unlocking the heart-protective benefits of soy

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Heart-Protective Discovery

A University of Pittsburgh study in Japanese men found that those whose bodies are able to produce equol, a substance that good gut bacteria make from soy food, have lower levels of a risk factor for heart disease than their counterparts whose bodies do not make equol. Studies estimate that East Asian countries have more than double the proportion of people able to produce equol than Western countries.

Source: V. Ahuja, et al., British Journal of Nutrition, 2017.



Studies estimate that East Asian countries have more than double the proportion of people able to produce equal than Western countries. Credit: Nicole Santo/UPMC

A product of digesting a micronutrient found in soy may hold the key to why some people seem to derive a heart-protective benefit from eating soy foods, while others do not, a University of Pittsburgh Graduate School of Public Health-led study discovered.

Japanese men who are able to produce equol—a substance made by

some types of "good" gut bacteria when they metabolize isoflavones (micronutrients found in dietary soy)—have lower levels of a risk factor for heart disease than their counterparts who cannot produce it, according to the research published in the *British Journal of Nutrition*.

"Scientists have known for some time that isoflavones protect against the buildup of plaque in arteries, known as atherosclerosis, in monkeys, and are associated with lower rates of heart disease in people in Asian countries," said senior author Akira Sekikawa, M.D., Ph.D., an associate professor of epidemiology at Pitt Public Health. "We were surprised when a large trial of isoflavones in the U.S. didn't show the beneficial effects among people with atherosclerosis in Western countries. Now, we think we know why."

All monkeys can produce equol, as can 50 to 60 percent of people in Asian countries. However, only 20 to 30 percent of people in Western countries can.

Sekikawa and his colleagues, who include scientists in Japan, recruited 272 Japanese men aged 40 to 49 and performed blood tests to find out if they were producing equol. After adjusting for other [heart disease risk](#) factors such as [high blood pressure](#), cholesterol, smoking and obesity, the team found that the equol-producers had 90-percent lower odds of [coronary artery calcification](#), a predictor of heart disease, than the equol non-producers.

The daily intake of dietary isoflavones—found in traditional soy foods such as tofu, miso and soymilk—is 25 to 50 milligrams in China and Japan, while it is less than 2 milligrams in Western countries. Equol is available as a supplement—bypassing the need for [gut bacteria](#) to produce it—though no clinical trials have been performed to determine a safe dosage for heart protective effects, or if it even does provide such protection.

"I do not recommend that [people](#) start taking equol to improve their heart health or for any other reason unless advised by their doctor," said Sekikawa. "Much more study is needed."

Sekikawa and his team are pursuing funding for a much larger observational study to expand on their findings and eventually a randomized clinical trial to examine the effect of taking equol on various medical conditions and diseases.

"Our discovery about equol may have applications far beyond [heart disease](#)," said Sekikawa. "We know that isoflavones may be associated with protecting against many other medical conditions, including osteoporosis, dementia, menopausal hot flashes, and prostate and breast cancers. Equol may have an even stronger effect on these diseases."

More information: Vasudha Ahuja et al. Significant inverse association of equol-producer status with coronary artery calcification but not dietary isoflavones in healthy Japanese men, *British Journal of Nutrition* (2017). DOI: 10.1017/S000711451600458X

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