

Heart failure risk lower in women who often eat baked/broiled fish

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The risk of developing heart failure was lower for postmenopausal women who frequently ate baked or broiled fish, but higher for those who ate more fried fish, in a study reported in *Circulation: Heart Failure*, an American Heart Association journal.

In a large-scale analysis, women who ate the most baked/broiled fish (five or more servings/week) had a 30 percent lower risk of heart failure compared to women who seldom ate it (less than one serving/month).

Previous research has found that fatty acids (omega-3) in fish — EPA, DHA and ALA — may lower risk of cardiovascular disease by decreasing inflammation, resisting oxidative stress and improving blood pressure, cardiac and blood vessel function.

This study showed that the type of fish and cooking method may affect heart failure risk. The researchers found that dark fish (salmon, mackerel and bluefish) were associated with a significantly greater risk reduction than either tuna or white fish (sole, snapper and cod).

In a similar analysis, eating [fried fish](#) was associated with increased heart failure risk. Even one serving a week was associated with a 48 percent higher heart failure risk.

"Not all fish are equal, and how you prepare it really matters," said Donald Lloyd-Jones, M.D., Sc.M., senior author of the study. "When you fry fish, you not only lose a lot of the benefits, you likely add some

things related to the cooking process that are harmful."

Other research has shown that frying increases the trans fatty acid (TFA) content of foods, which is associated with increasing risk for heart disease. In this study, however, the researchers did not find an association between TFA and heart failure risk.

Lloyd-Jones and his team examined self-reported dietary data from 84,493 [postmenopausal women](#) in the Women's Health Initiative Observational Study. They then divided study participants based on the frequency and type of fish consumption. Two groups of fish intake were defined: baked/broiled fish or fried fish. The baked/broiled fish group consisted of canned tuna, tuna salad, tuna casserole, white fish (broiled or baked), dark fish (broiled or baked) and shellfish (not fried). The fried fish group consisted of fried fish, fish sandwich and fried shellfish.

They conducted their analysis based on data from 1991 through August 2008. During an average follow-up of 10 years, 1,858 cases of heart failure occurred.

Most participants (85 percent) were Caucasian, 7 percent African-American and 3 percent Hispanic. Their average age was 63 at baseline.

Participants whose diets included more baked/broiled fish tended to be healthier and younger than their counterparts who ate fried fish. They were more physically active and fit, more educated and less likely to smoke, have diabetes, high blood pressure and heart disease (irregular heartbeat and coronary artery disease). Furthermore, their diets contained more fruits and vegetables, less unhealthy, saturated and trans fatty acids and more beneficial fatty acids, which are found in fish and in non-marine foods such as nuts, seeds and certain vegetable oils. Consumption of fried fish was associated with higher body mass index (a weight-to-height ratio), higher energy intakes (calories) and lower

fiber consumption. Consumption of other fried foods besides fish was adjusted in the analysis.

While previous studies have linked omega-3 fatty acids to a decrease in some types of heart disease, their precise relationship to heart failure risk was unclear. Researchers sought to clarify the connection between fish and heart failure risk in postmenopausal women.

"Baking or broiling fish and eating it frequently seem to be part of a dietary pattern that is very beneficial for a number of things," said Lloyd-Jones, associate professor, preventive cardiologist and chair of the Department of Preventive Medicine at Northwestern University Feinberg School of Medicine in Chicago. "In this case, we demonstrated that it's associated with heart failure prevention. This suggests that fish is a very good source of lean protein that we ought to be increasing as a proportion of our diet and decreasing foods that contain less healthy saturated and trans fats."

The results of this study are consistent with previous findings in studies of older American and Swedish populations, he said, "but the new study adds the interesting results on darker fish. They also suggest that baked/broiled [fish](#) is associated with reduced risk of heart failure through mechanisms other than reducing risk for a heart attack, a precursor to heart failure in some people."

In the United States, heart failure affects about 5.7 million people. Although the heart continues to function in this disease, it's unable to pump blood efficiently enough to meet the body's needs. [Heart failure](#) has many different causes, including smoking, high blood pressure, diabetes, overweight, lack of physical activity and poor diet. It's often treatable with lifestyle changes, medicine or surgery.

Provided by American Heart Association

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