

# Omega-3 fatty acids don't improve heart's ability to relax and efficiently refill with blood

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Over the past three decades, researchers have firmly established that the omega-3 fatty acids in fish oil, including eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA), have healthy effects on the heart. Omega-3 fatty acids seem to help both in preventing cardiovascular disease as well as in preventing future heart attacks, strokes, and other adverse events in people who have established cardiovascular disease. These findings have been so strong that the American Heart Association now recommends eating fish or taking fish oil as a preventive measure both for healthy individuals and those with cardiovascular disease. However, the mechanism behind omega-3's healthy effects isn't yet known.

In a new study, Zhaohui Gao, Robert P. Feehan, Lawrence I. Sinoway, and Kevin D. Monahan of the Penn State College of Medicine investigated whether part of omega-3's benefits might rely on improving cardiac diastolic function—the ability of the [heart](#) to relax and efficiently refill with blood at each beat, which declines with age. Their findings show that taking an omega-3 supplement daily for three months didn't change diastolic function in older adults, suggesting that omega-3's benefits might fall on other aspects of cardiovascular function.

An abstract of their study entitled, "Three-Month Omega-3 Fatty Acid Supplementation Does Not Improve Cardiac Diastolic Function in Healthy Older Adults," will be discussed at the meeting Experimental

Biology 2012 being held April 21-25 at the San Diego Convention Center. The abstract is sponsored by the American Physiological Society (APS), one of six scientific societies sponsoring the conference which last year attracted some 14,000 attendees.

## **No Effect on Diastolic Function**

To investigate omega-3's effects on diastolic function, the researchers recruited 11 healthy adults with an average age of 66 years—a prime age group in which hearts begin to show signs of aging, including diastolic dysfunction. The researchers gave these volunteers, split nearly equally between men and women, echocardiograms to measure heart structure and function. This echocardiogram included traditional Doppler measures, as well as cutting edge tissue Doppler imaging and 2D speckle tracking imaging, two newer technologies that give more detailed views of the heart.

Over the next 12 weeks, these volunteers each took daily omega-3 supplements containing 1.9 grams EPA and 1.5 grams DHA. The researchers then repeated the echocardiograms.

Results show that between the first and second scans, the volunteers had no detectable improvements in diastolic function, says study leader Kevin Monahan, Ph.D., suggesting that fish oil didn't change this important parameter of cardiac health.

## **Keep Up the Fish Oil**

However, Monahan says, the results shouldn't deter people from taking fish oil or other omega-3 supplements for heart health. "I don't think there's any reason to stop taking fish oil based on our data," he says. "From a big picture standpoint, we know that consumption of fish and

[fish oil](#) reduces cardiac disease risk and mortality. Just because omega-3 supplements doesn't improve diastolic function over 12 weeks in this population doesn't mean that these nutrients don't exert other important cardiac effects."

He notes that a longer trial may produce more noticeable results on [diastolic function](#), or that omega-3 fatty acids may produce more profound effects on other aspects of heart function, preventing heart disease in other ways.

Diastolic dysfunction can be a harbinger of heart failure, Monahan says, causing symptoms including shortness of breath and severe fatigue with physical activity. Heart failure is a prevalent and expensive condition in the U.S., with estimated costs in the tens of billions of dollars.

Provided by Federation of American Societies for Experimental Biology

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