# AJCN: n-3 Polyunsaturated Fatty Acids, Fatal Ischemic Heart Disease, and Nonfatal Myocardial Infarction in Older Adults: the Cardiovascular Health Study1,2,3

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**Background:** Little is known about the relation of the dietary intake of n-3 polyunsaturated fatty acids, ie, docosahexaenoic acid (DHA) and eicosapentaenoic acid (EPA) from fatty fish and -linolenic acid from vegetable oils, with ischemic heart disease among older adults.

**Objective:** We investigated the associations of plasma phospholipid concentrations of DHA, EPA, and -linolenic acid as biomarkers of intake with the risk of incident fatal ischemic heart disease and incident nonfatal myocardial infarction in older adults.

**Design:** We conducted a case-control study nested in the Cardiovascular Health Study, a cohort study of adults aged  65 y. Cases experienced incident fatal myocardial infarction and other ischemic heart disease death (n = 54) and incident nonfatal myocardial infarction (n = 125). Matched controls were randomly selected (n = 179). We measured plasma phospholipid concentrations of n-3 polyunsaturated fatty acids in blood samples drawn 2 y before the event.

**Results:** A higher concentration of combined DHA and EPA was associated with a lower risk of fatal ischemic heart disease, and a higher concentration of -linolenic acid with a tendency to lower risk, after adjustment for risk factors [odds ratio: 0.32 (95% CI: 0.13, 0.78; P = 0.01) and 0.52 (0.24, 1.15; P = 0.1), respectively]. In contrast, n-3 polyunsaturated fatty acids were not associated with nonfatal myocardial infarction.

**Conclusions:** Higher combined dietary intake of DHA and EPA, and possibly -linolenic acid, may lower the risk of fatal ischemic heart disease in older adults. The association of n-3 polyunsaturated fatty acids with fatal ischemic heart disease, but not with nonfatal myocardial infarction, is consistent with possible antiarrhythmic effects of these fatty acids.