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Blood Levels of Long-Chain n–3 Fatty Acids and the Risk of Sudden Death

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ABSTRACT

Background Experimental data suggest that long-chain n–3 polyunsaturated fatty acids found in fish have antiarrhythmic properties, and a randomized trial suggested that dietary supplements of n–3 fatty acids may reduce the risk of sudden death among survivors of myocardial infarction. Whether long-chain n–3 fatty acids are also associated with the risk of sudden death in those without a history of cardiovascular disease is unknown.

Methods We conducted a prospective, nested case–control analysis among apparently healthy men who were followed for up to 17 years in the Physicians' Health Study. The fatty-acid composition of previously collected blood was analyzed by gas–liquid chromatography for 94 men in whom sudden death occurred as the first manifestation of cardiovascular disease and for 184 controls matched with them for age and smoking status.

Results Base-line blood levels of long-chain n–3 fatty acids were inversely related to the risk of sudden death both before adjustment for potential confounders (P for trend = 0.004) and after such adjustment (P for trend = 0.007). As compared with men whose blood levels of long-chain n–3 fatty acids were in the lowest quartile, the relative risk of sudden death was significantly lower among men with levels in the third quartile (adjusted relative risk, 0.28; 95 percent confidence interval, 0.09 to 0.87) and the fourth quartile (adjusted relative risk, 0.19; 95 percent confidence interval, 0.05 to 0.71).

Conclusions The n–3 fatty acids found in fish are strongly associated with a reduced risk of sudden death among men without evidence of prior cardiovascular disease.

Source Information

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