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## **Blood levels of long-chain n-3 fatty acids and the risk of sudden death.**

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**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.