

Intakes of long-chain n–3 polyunsaturated fatty acids and fish in relation to measurements of subclinical atherosclerosis 1,2,3

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Background: Data on the relations of different types of fish meals and long-chain n–3 polyunsaturated fatty acids (PUFAs) to measures of atherosclerosis are sparse.

Objective: We examined intakes of long-chain n–3 PUFAs and fish in relation to clinical measures of subclinical atherosclerosis.

Design: A cross-sectional study was conducted in a multiethnic group of 5488 adults aged 45–84 y and free of clinical cardiovascular disease. Diet was assessed by using self-administered food-frequency questionnaires. Subclinical atherosclerosis was determined by measurements of common carotid intima–media thickness (cCIMT, >80th percentile), internal CIMT (iCIMT, >80th percentile), coronary artery calcium score (CAC score, >0), or ankle-brachial index (ABI, <0.90).

Results: After adjustment for potential confounders, intakes of long-chain n–3 PUFAs and nonfried (broiled, steamed, baked, or raw) fish were inversely related to subclinical atherosclerosis determined by cCIMT but not by iCIMT, CAC score, or ABI. The multivariate odds ratio comparing the highest to the lowest quartile of dietary exposures in relation to subclinical atherosclerosis determined by cCIMT was 0.69 (95% CI: 0.55, 0.86; P for trend <

0.01) for n–3 PUFA intake; 0.80 (95% CI: 0.64, 1.01; P = 0.054) for nonfried fish consumption; and 0.90 (95% CI: 0.73, 1.11; P = 0.38) for fried fish consumption.

Conclusions: This study indicates that the dietary intake of long-chain n–3 PUFAs or nonfried fish is associated with a lower prevalence of subclinical atherosclerosis classified by cCIMT, although significant changes in iCIMT, CAC score, and ABI were not observed. Our findings also suggest that the association of fish and atherosclerosis may vary depending on the type of fish meal consumed and the measures of atherosclerosis.