

ORIGINAL RESEARCH COMMUNICATION

Whole-grain consumption is associated with a reduced risk of noncardiovascular, noncancer death attributed to inflammatory diseases in the Iowa Women's Health Study^{1,2,3,4}

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Background: It has recently been shown that oxidative stress, infection, and inflammation are predominant pathophysiologic factors for several major diseases.

Objective: We investigated the association of whole-grain intake with death attributed to noncardiovascular, noncancer inflammatory diseases.

Design: Postmenopausal women ($n = 41\,836$) aged 55–69 y at baseline in 1986 were followed for 17 y. After exclusions for cardiovascular disease, cancer, diabetes, colitis, and liver cirrhosis at baseline, 27 312 participants remained, of whom 5552 died during the 17 y. A proportional hazards regression model was adjusted for age, smoking, adiposity, education, physical activity, and other dietary factors.

Results: Inflammation-related death was inversely associated with whole-grain intake. Compared with the hazard ratios in women who rarely or never ate whole-grain foods, the hazard ratio was 0.69 (95% CI: 0.57, 0.83) for those who consumed 4–7 servings/wk, 0.79 (0.66, 0.95) for 7.5–10.5 servings/wk, 0.64 (0.53, 0.79) for 11–18.5 servings/wk, and 0.66 (0.54, 0.81) for ≥ 19 servings/wk (P for trend = 0.01). Previously reported inverse associations of whole-grain intake with total and coronary heart disease mortality persisted after 17 y of follow-up.

Conclusions: The reduction in inflammatory mortality associated with habitual whole-grain intake was larger than that previously reported for coronary heart disease and diabetes. Because a variety of phytochemicals are found in whole grains that may directly or indirectly inhibit oxidative stress, and because oxidative stress is an inevitable consequence of inflammation, we suggest that oxidative stress reduction by constituents of whole grain is a likely mechanism for the protective effect.

Key Words: Whole-grain foods • carbohydrate • fiber • inflammation

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