

Antioxidant nutrient intake and the long-term incidence of age-related cataract: the Blue Mountains Eye Study^{1,2,3,4}

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Background: Oxidative stress has been implicated in cataractogenesis. Long-term intake of antioxidants may offer protection against cataract.

Objective: We investigated relations between antioxidant nutrient intakes measured at baseline and the 10-y incidence of age-related cataract.

Design: During 1992–1994, 3654 persons aged ≥ 49 y attended baseline examinations of the Blue Mountains Eye Study (82.4% response). Of these persons, 2464 (67.4%) participants were followed ≥ 1 time after the baseline examinations (at either 5 or 10 y). At each examination, lens photography was performed and questionnaires were administered, including a 145-item semiquantitative food-frequency questionnaire. Antioxidants, including β -carotene, zinc, and vitamins A, C, and E, were assessed. Cataract was assessed at each examination from lens photographs with the use of the Wisconsin Cataract Grading System. Nuclear cataract was defined for opacity greater than standard 3. Cortical cataract was defined as cortical opacity $\geq 5\%$ of the total lens area, and posterior subcapsular (PSC) cataract was defined as the presence of any such opacity.

Results: Participants with the highest quintile of total intake (diet + supplements) of vitamin C had a reduced risk of incident nuclear cataract [adjusted odds ratio (OR): 0.55; 95% CI: 0.36, 0.86]. An above-median intake of combined antioxidants (vitamins C and E, β -carotene, and zinc) was associated with a reduced risk of incident nuclear cataract (OR: 0.51; 95% CI: 0.34, 0.76). Antioxidant intake was not associated with incident cortical or PSC cataract.

Conclusion: Higher intakes of vitamin C or the combined intake of antioxidants had long-term protective associations against development of nuclear cataract in this older population.