

Carbohydrate intake and glycemic index in relation to the odds of early cortical and nuclear lens opacities^{1,2,3,4,5}

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Background: Animal studies suggest a role for dietary carbohydrate in cataractogenesis. However, few published human studies have evaluated associations between carbohydrate nutrition and lens opacification.

Objective: Our objective was to test the hypothesis that long-term carbohydrate intake and dietary glycemic index are associated with the odds of early cortical and nuclear opacities.

Design: Subjects were 417 Boston-area members of the Nurses' Health Study cohort aged 53–73 y. Dietary information was based on an average from 5 semiquantitative food-frequency questionnaires collected over a 14-y period. Opacities were assessed by using the Lens Opacity Classification System III (LOCS III). We used eyes ($n = 711$) as the unit of analysis and generated odds ratios by using a generalized estimating approach to logistic regression to account for the lack of independence between the 2 eyes of each subject.

Results: After multivariate adjustment, the odds of cortical opacities (LOCS III ≥ 1.0) among women in the highest tertile of carbohydrate intake (≥ 200 g/d) was 2.46 times (95% CI: 1.30, 4.64; P for trend = 0.005) that among women in the lowest tertile (< 185 g/d). This association was not affected by adjustment for dietary glycemic index, which was not associated with early cortical opacities. Carbohydrate nutrition was not associated with the odds of nuclear opacities (LOCS III ≥ 2.5).

Conclusions: These data suggest that carbohydrate quantity, but not carbohydrate quality, is associated with early cortical opacities, and that neither the quantity nor the quality of dietary carbohydrate affects the risk of nuclear opacities in middle-aged women.