

# Cost-effectiveness of Vitamin Therapy for Age-Related Macular Degeneration

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**Objective:** To determine the cost-effectiveness of vitamin therapy (antioxidants plus zinc) for all indicated patients diagnosed with age-related macular degeneration (AMD).

**Design:** We compared the impacts of vitamin therapy with those of no vitamin therapy using a computerized, stochastic, agent-based model. The model simulated the natural history of AMD and patterns of ophthalmic service use in the United States in a cohort from age 50 years until 100 or death.

**Participants and/or Controls:** The model created 20 million simulated individuals. These individuals each received both the intervention (vitamin therapy after diagnosis) and the control (no vitamin therapy). Expected outcomes generated when vitamins were taken after diagnosis were compared with the expected outcomes generated when they were not.

**Methods:** The model created individuals representative of patients in the U.S. Incidence of early AMD was based on published studies, as was vision loss and response to choroidal neovascularization therapies. Post-incident disease progression was governed by previously unpublished data drawn from the Age-Related Eye Disease Study.

**Main Outcome Measures:** Extent of disease progression, years and severity of visual impairment, cost of ophthalmic care and nursing home services, and quality-adjusted life years (QALYs). Costs and benefits were considered from the health care perspective and discounted using a 3% rate. The analysis was run for 50 years starting in 2003.

**Results:** Compared with no therapy, vitamin therapy yielded a cost-effectiveness ratio of \$21 387 per QALY gained and lowered the percentage of patients with AMD who ever developed visual impairment in the better-seeing eye from 7.0% to 5.6%.

**Conclusions:** Our model demonstrates that vitamin therapy for AMD improves quality of life at a reasonable cost.

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