

# Associations between age-related nuclear cataract and lutein and zeaxanthin in the diet and serum in the Carotenoids in the Age-Related Eye Disease Study, an Ancillary Study of the Women's Health Initiative.

Moeller SM, Volland R, Tinker L, Blodi BA, Klein ML, Gehrs KM, Johnson EJ, Snodderly DM, Wallace RB, Chappell RJ, Parekh N, Ritenbaugh C, Mares JA; CAREDS Study Group; Women's Health Initiative.

## Collaborators (88)

Allen C, Blodi BA, Davis M, Hubbard L, LaRowe T, Parekh N, Gehrs KM, Wallace R, Johnson EJ, Mayer J, Klein ML, Ritenbaugh C, Snodderly DM, Millen A, Wooten B, Smith P, Nolte SK, Vahrenwald D, O'Berry K, Stockman H, Wallace S, Fuhrmeister L, Armstrong J, Neider M, Wabers H, Rowley J, Judge T, Oxtun L, Volland R, Ostrowski G, Burfield S, Ewing J, Perkins T, Alving B, Rossouw J, Ludlam S, Pottner L, McGowan J, Ford L, Geller N, Prentice R, Anderson G, LaCroix A, Kooperberg CL, Patterson RE, McTiernan A, Shumaker S, Cummings S, Wassertheil-Smoller S, Hays J, Manson J, Assaf AR, Phillips L, Beresford S, Hsia J, Chlebowski R, Whitlock E, Caan B, Kotchen JM, Howard BV, Van Horn L, Black H, Stefanick ML, Lane D, Jackson R, Lewis CE, Bassford T, Wactawski-Wende J, Robbins J, Hubbell FA, Judd H, Langer RD, Gass M, Limacher M, Curb D, Wallace R, Ockene J, Lasser N, O'Sullivan MJ, Margolis K, Bruner R, Heiss G, Kuller L, Johnson KC, Brzyski R, Sarto GE, Bonds D, Hendrix S.

Department of Ophthalmology and Visual Sciences, University of Wisconsin, Madison, WI 53726-2336, USA.

**OBJECTIVE:** To evaluate associations between nuclear cataract (determined from slitlamp photographs between May 2001 and January 2004) and lutein and zeaxanthin in the diet and serum in patients between 1994 and 1998 and macula between 2001 and 2004. **DESIGN:** A total of 1802 women aged 50 to 79 years in Iowa, Wisconsin, and Oregon with intakes of lutein and zeaxanthin above the 78th (high) and below the 28th (low) percentiles in the Women's Health Initiative Observational Study (1994-1998) were recruited 4 to 7 years later (2001-2004) into the Carotenoids in Age-Related Eye Disease Study. **RESULTS:** Women in the group with high dietary levels of lutein and zeaxanthin had a 23% lower prevalence of nuclear cataract (age-adjusted odds ratio, 0.77; 95% confidence interval, 0.62-0.96) compared with those with low levels. Multivariable adjustment slightly attenuated the association (odds ratio, 0.81; 95% confidence interval, 0.65-1.01). Women in the highest quintile category of diet or serum levels of lutein and zeaxanthin as compared with those in the lowest quintile category were 32% less likely to have nuclear cataract (multivariable-adjusted odds ratio, 0.68; 95% confidence interval, 0.48-0.97; P for trend = .04; and multivariable-adjusted odds ratio, 0.68; 95% confidence interval, 0.47-0.98; P for trend = .01, respectively). Cross-sectional associations with macular pigment density were inverse but not statistically significant. **CONCLUSIONS:** Diets rich in lutein and zeaxanthin are moderately associated with decreased prevalence of nuclear cataract in older women. However, other protective aspects of such diets may in part explain these relationships.

Arch Ophthalmol 2008 Mar;126(3):354-64.