How Fatty Acids Affect the Eyes

Essential fatty acids are critical for proper visual development in infants. Also, deficiencies of omega-3 fatty acids in adults (particularly omega-3) can lead to impaired vision. Studies suggest that prolonged deficiencies may increase the risk of damage to the retina. EFAs also play a role in helping eye fluids (aqueous) drain, which helps regulate intraocular pressure.

In 2007, a large multi-site study found that people who eat at least two servings of fish weekly are less likely to develop age-related macular degeneration (AMD), the leading cause of irreversible vision loss among people over 65 in the United States.

Those in the study who consumed the highest levels of omega-3 fatty acids, primarily from fish, had a 39 percent lower risk of AMD compared with those who ate the least fish (*Archives of Ophthalmology*, May 2007).

In a 2005 study, researchers found that the amount, type, and ratio of essential fatty acids in the diet may play a key role in the prevention of dry eye syndrome in women. Among other findings, the study, conducted at Brigham and Women's Hospital in Boston (a teaching affiliate of Harvard Medical School), showed:

- Women with the highest levels of omega-3 fatty acids in their diets reduced their risk of dry eye syndrome (DES) by 20 percent, compared with women with the lowest levels of omega-3 in their diet.
- A dietary ratio of omega-6 to omega-3 fatty acids greater than 15:1 was associated with a 2.5-fold increased risk of DES in women.
- Women who reported eating at least five servings of tuna per week had a 68 percent reduced risk of DES, compared with women who consumed one serving per week.
- Other fish types that have lower levels of omega-3 fatty acids did not appear to protect against dry eye syndrome.

"Based on this report, preventing dry eye syndrome is another potential reason to follow a diet rich in tuna and other foods plentiful in omega-3 fatty acids," study author Debra Schaumberg, OD, MPH, said in the October 2005 issue of the *American Journal of Clinical Nutrition*.