

Fatty Acids Beneficial In Treatment For Dry Eye Syndrome

12 Feb 2008

Research conducted by Massachusetts Eye and Ear Infirmary (MEEI) Cornea Service Director and Harvard Medical School Professor Reza Dana, M.D., M. Sc., MPH, and colleagues at the Schepens Eye Research Institute have found for the first time that topical drop application of alpha-linolenic acid (ALA) led to a significant decrease in clinical signs of dry eye syndrome (DES) in animal models. ALA is a fatty acid that cannot be made by the body and must be supplied in the diet. The study will be published in the February 2008 issue of *Archives of Ophthalmology*.

Dry eye syndrome is a condition in which the eyes do not produce enough tears, causing them to become dry and irritated. Inflammation is frequently associated with the condition. Symptoms of dry eye syndrome include eye discomfort, such as stinging or burning, eye irritation or a feeling of scratchiness. The condition affects well more than 10 million people, primarily women, in the United States alone and can often lead to problems with activities such as reading and driving. Dry eye syndrome is also one of the most common conditions for which patients see eye care. Unfortunately, treatment options are quite limited in terms of both efficacy and undesirable side-effects.

The study tested three formulations of fatty acids: 0.2 percent alpha-linolenic acid (an omega-3 fatty acid) ; 0.2 percent linoleic acid (an omega-6 fatty acid) ; and 0.1 percent alpha-linolenic acid combined with 0.1 percent linoleic acid. An eye drop containing each of the three formulations was applied topically to the eye of a mouse once daily. An untreated group did not receive eye drops. Signs of dry eye were then measured 24 hours after the last dose. Eyes treated with ALA showed a significant reversal in epithelial damage to the cornea, the transparent dome that covers the pupil. Results show a beneficial effect of the topical application of ALA in reversing the signs of dry eye syndrome as well as the inflammatory changes seen in dry eye syndrome.

"The current study for the first time demonstrates the benefit of topical application of a particular fatty acid in treating the signs of dry eye syndrome at both the molecular and cellular levels. Using topical formulations of fatty acids to treat dry eye would allow for more flexibility for treatment, including lessening side effects that patients can experience from oral intake of fatty acids. Clinical studies with topical fatty acids are being planned, which if successful could alter the method by which this common condition is treated," said Dr. Dana.

This research was supported by grants from Johnson and Johnson Vision Care, Inc., and the Sjogren's Syndrome Foundation.

Founded in 1824, Massachusetts Eye and Ear Infirmary (MEEI) is an independent specialty hospital providing patient care for disorders of the eye, ear, nose, throat, head and neck. MEEI is an international leader in Ophthalmology and Otolaryngology research and a teaching partner of Harvard Medical School.

Harvard Medical School
25 Shattuck St., Room 001

Boston, MA 02115
United States
<http://www.hms.harvard.edu>

Article URL: <http://www.medicalnewstoday.com/articles/96941.php>

Main News Category: Eye Health / Blindness