

Omega-3 essential fatty acids may protect corneal nerves in dry eye

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(HealthDay)—Oral, long-chain omega-3 (ω -3) essential fatty acid (EFA)

supplementation is neuroprotective to corneal nerves for patients with dry eye disease, according to a study published online March 12 in *Ophthalmic & Physiological Optics*.

Holly Rose Chinnery, Ph.D., from the University of Melbourne in Parkville, Australia, and colleagues conducted a prospective, comparative study involving the final 12 participants enrolled in a [randomized controlled trial](#) with 60 participants with moderate [dry eye disease](#). Participants received [placebo](#) or ω -3 EFA supplements for 90 days (four and eight participants, respectively).

The researchers found that, compared with the placebo group, the ω -3 EFA group had a greater reduction in Ocular Surface Disease Index score and tear osmolarity at day 90 versus baseline. Compared with placebo, the ω -3 EFA group had higher corneal total [nerve](#) branch density (CTBD) and corneal nerve branch density (CNBD) on the main fiber at day 90. CNBD increased at day 90 relative to day one in the ω -3 EFA group compared with placebo. Similar changes were seen for corneal nerve fiber length, which increased in the ω -3 EFA group compared with placebo. A negative correlation was seen between CTBD and tear osmolarity. There were no significant changes for basal epithelial cell or corneal dendritic cell density.

"These pilot study findings suggest that ω -3 EFA supplementation imparts neuroprotective effects in the corneal sub-basal plexus that correlate with the extent of tear osmolarity normalization," the authors write.

More information: [Abstract](#)
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