

# Omega-3 fatty acid supplementation can improve both symptoms and signs of dry eye disease

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## Dear editor

We read with great interest the article by Gatell-Tortajada<sup>1</sup> entitled “Oral supplementation with a nutraceutical formulation containing omega-3 fatty acids, vitamins, minerals, and antioxidants in a large series of patients with dry eye symptoms: results of a prospective study”. The prospective large-scale study was undoubtedly well designed and conducted, and the authors should be congratulated for successfully demonstrating that oral omega-3 fatty acid supplementation can be an effective treatment for dry eye symptoms.<sup>1</sup>

The authors showed that supplementation of omega-3 fatty acids improved dry eye signs, such as corneal erosion, tear film breakup time, and conjunctival hyperemia, suggesting that they can reduce ocular surface inflammation and also alleviate dry eye symptoms.<sup>1</sup> Rashid et al<sup>2</sup> also demonstrated that topical application of omega-3 fatty acids led to a decrease in dry eye signs and inflammatory changes at both cellular and molecular levels.

We would like to point out that the supplementation of omega-3 fatty acids can also affect the perception of the pain and discomfort caused by dry eye. Galor et al<sup>3</sup> recently showed that dry eye symptoms were more closely associated with nonocular pain, depression, and post-traumatic stress disorder than tear film parameters. Increased omega-6:omega-3 ratio in the diet was also suggested to be an important cause of the increased incidence of both dry eye disease and major depression.<sup>2,4</sup> A recent study using an animal model revealed that omega-3 fatty acid supplementation improved depressive-like behaviors and also alleviated neural apoptosis.<sup>5</sup> A number of studies suggested that omega-3 fatty acids might have a potential clinical value in the prevention and treatment of psychopathologies, including stress, anxiety, and depression.<sup>4,5</sup> Therefore, it can be assumed that omega-3 fatty acids might improve the mood and psychological stress of the patients and affect the perception of the discomfort and pain caused by dry eye disease, which can also contribute to the improvement of dry eye symptoms.

We believe that further studies including the evaluation of the psychological parameters would be helpful for the elucidation of the effect of omega-3 fatty acid supplementation.

## Disclosure

The authors report no conflicts of interest in this communication.

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