

And Then There Were Three

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It was in mid-1980s that Bone et al first identified the macular pigment as a combination of 2 xanthophylls, lutein and zeaxanthin. Subsequently, the same authors showed it to be characterized by the presence of specific stereoisomers of these two carotenoids. However, while lutein is present as a single stereoisomer, zeaxanthin occurs as a mixture of three isomers: the two predominant isomers are referred to as zeaxanthin and meso-zeaxanthin, the third is present in negligible quantity in the human retina.

Meso-zeaxanthin is almost unusual in the human diet. Nevertheless it can be found in significant amounts only in the primate retina, being more abundant than lutein in the fovea, whereas the situation is reversed in the periphery, with a greater amount of lutein.

The present talk will review the published literature about meso-zeaxanthin, and will focus on new clinical trials currently ongoing. The aim is to argue if meso-zeaxanthin is the third macular pigment not only because it is there in the macula but also because it could play an important functional role.