

About MESO-ZEAXANTHIN

The centre of the retina is responsible for central vision, and is an area known as the macula.

As we get older, blue light and free radicals damage central vision, and can cause the commonest cause of blindness in the Western World, a condition known as age-related macular degeneration, or AMD. People with AMD lose the ability to read, recognize faces, watch television and drive, and therefore lose their independence.

There is an important and naturally occurring pigment at the back of the eye, known as macular pigment, which is entirely of dietary origin.

This pigment is made up of 3 compounds, known as lutein (L), zeaxanthin (Z) and meso-zeaxanthin (meso-Z). Interestingly, meso-Z is only found at the macula, whereas L and Z are also found in serum and in diet.

Macular pigment is yellow in colour, and therefore absorbs blue light. Also, macular pigment is a powerful neutralizer of free radicals. It is perhaps unsurprising, therefore, that this pigment protects the central retina from the ageing process, because both blue light damage and free radicals are believed to contribute to AMD.

Indeed, there is a growing and compelling body of evidence that a lack of this macular pigment in the eye increases an individual's risk for developing AMD, and that appropriate supplements reduce one's risk of this condition.

The importance of meso-Z rests on the fact that it is not found in a typical diet (although it is found in unusual foods, such as oysters), and is uniquely important for macular health. The importance of meso-Z for visual health is reflected in the fact that L is converted to meso-Z in the retina only, and also because meso-Z is only found at the centre of the fovea, where vision is sharpest. Also, meso-Z is a more powerful neutralizer of free radicals than either L or Z. Furthermore, the presence of meso-Z results in the filtration of a wider range of damaging blue light. Moreover, meso-Z is more closely related to vulnerable photoreceptors at an anatomic level than either L or Z, and is therefore ideally located to afford protection against free radical damage of these important cells of vision.

And finally, and most importantly, supplementation with meso-Z will ensure that this component of macular pigment accumulates at the target tissue (i.e. the central macula) in a way that is not dependent on an enzyme to isomerise L. Indeed, such an enzyme may be lacking in some individuals.