

As the latest nutritional supplement hits the UK, *Optician* takes a look at the increasing interest in the third macular pigment used in its formulation

MUCH HAS BEEN written in recent years about the potential protective effects of certain nutritional components for the macula. The original AREDS study used a formula containing vitamins A, C and E as well as zinc and copper. There was no available formulation of macular pigment carotenoids available at the time. The results were widely publicised and suggested that, for a sub-group of patients already with age-related macular degeneration (AMD), there appeared to be a reduced risk of further progression to the end stages of the disease in one eye.

MESO-ZEAXANTHIN

Further work through the 1990s started to raise the profile of two macular pigments, the stereo-isomers lutein and zeaxanthin, both completely derived from dietary origin and found in the macular area of the retina. They were found to have a protective effect against short wavelength light damage and to have an antioxidant effect, so potentially might be able to slow down the macular degenerative process. Studies, such as the LAST veterans study by Dr Stuart Richer, have implied a direct benefit in lutein supplementation in preventing sight loss through AMD. There are several multicentre studies currently under way aiming to establish more concrete data regarding the actual role of supplementation in preventing AMD. Furthermore, other dietary components, such as taurine and omega-3, have been found to play some protective anti-oxidant role.

Much of the pioneering work into macular pigment was undertaken by Dr Richard Bone and Dr John Landrum at Florida International University. They recently discovered the presence of a third macular pigment, meso-zeaxanthin (MZ). The three pigments are found in equal quantities in the central retina but the ratio of MZ to zeaxanthin decreases away from the foveal area. Interestingly, MZ is found in the retina but, unlike lutein and zeaxanthin, has not been isolated from blood plasma or the liver. This suggests that MZ is produced within the body by isomerisation of lutein and is not derived from the diet.

This has led some scientists to claim that MZ supplementation has significant potential. Dr John Nolan (vision scientist and Fulbright postdoctoral fellow in the

Meso-zeaxanthin

The third macular pigment



Dr John Nolan uses the MacuScope to measure a patient's macular pigment level

Medical College, Georgia, Department of Ophthalmology) recently stated: 'Given that MZ is not normally found in a standard diet, is a stronger antioxidant than both lutein and zeaxanthin, and allows for a wider range of blue-light filtration, its presence in a supplement will undoubtedly be of benefit for maintaining visual performance.'

Stephen Beatty, consultant ophthalmologist based in Waterford and a key researcher into the role of macular pigment, claims 'in my opinion, the best formulation for maintaining visual health, and for safeguarding vision into old age, would contain lutein, zeaxanthin and MZ. Such a combination is optimal for shielding the central retina from damaging wavelengths of light, and from injury by free radicals.'

SUPPLEMENTS

Unlike lutein, found in spinach and other green vegetables, and zeaxanthin which is the yellow pigment found in corn, MZ is not found in common food sources and could not be supplemented until now. This week sees the launch of MacuShield, the first patented nutritional supplement to contain MZ. The product is to be marketed as an 'optician only' product and distributed by Birmingham Optical.

Commenting on the news that Birmingham Optical Group have acquired the exclusive distribution rights to MacuShield, the CEO of the company Chris Tyler stated: 'MacuShield promises to be one of the most important advances in the fight against AMD, there is now

a ground swell of science supporting the role of ocular supplements and the blend contained within MacuShield indicates strong clinical evidence that this supplement will indeed offer further breakthroughs. We have decided to offer the supplement via opticians only based on the belief that the optician is the best individual to support the patient through the clinical journey and to discuss and implement a regime suited to the patient.'

Managing director of newly formed company MacuVision Europe, Trevor McCormack, responsible for the product in the UK, said: 'I was interested once I found out that MZ was only found in the body and not in the diet. We feel that we should be proactive in tackling one of the major risk factors for AMD, low macular pigment levels.'

The product is to become available just in advance of a new instrument, the MacuScope (pictured above). This is a desktop instrument, similar in size to an autorefractor, which claims to reliably measure macular pigment levels in a matter of seconds. The aim, obviously, is to allow practitioners to assess when a patient has low pigment levels and then to offer appropriate advice about increasing those levels in a bid to enhance the beneficial effects of the pigments, through dietary advice and supplementation. *Optician* will report on its preview of the instrument in the coming weeks.

◆ For further information on MacuShield, contact Birmingham Optical Group on 0121 442 5800.