

Poor eyesight can be rectified through nutrition, say leading eye experts

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Credit: Shane O'Neill

Blindness in the developed world is most commonly caused by age-related macular degeneration (AMD). Over 15 million Europeans are affected by this condition, a figure that is expected to double over the next decade. But the latest research has proven that certain nutrients can prevent this from happening, dispelling the idea that as we age, our eyesight subsequently deteriorates.

Professors John Nolan from the Waterford Institute of Technology (WIT) and Stephen Beatty from the Macular Pigment Research Group (MPRG), both based in Ireland, are considered to be the world-leading researchers in this field. They are about to embark on an area of science research, which has not been investigated before. This follows recent news of a landmark study by the National [Eye](#) Institute, which examined the effects of eye supplements over a five-year period in over 4,000 patients with AMD. The findings of the AREDS2 ('Related [Eye Disease](#) Study 2') confirmed the beneficial impact of using antioxidant eye supplements for AMD, and notably, highlighted the importance of including the macular pigments in the supplement.

Professor Nolan has been researching macular pigments for many years. He says: 'I always believed that these nutrients had an important role to play for patients with AMD. Indeed, many of our published research studies have already shown that increasing macular pigment with supplements is very beneficial for AMD patients and can actually improve their vision.'

As a strong advocate of supplements for all-round health, the professor also believes we need to include more fruit and vegetables in our diet, which plays a vital role in eye health.

'They contain naturally occurring yellow pigments known as [carotenoids](#),' he says, 'and three of them (lutein, zeaxanthin and meso-zeaxanthin) are uniquely found at the back of the eye (retina), where they are referred to as macular pigment.' This filters damaging blue light and neutralises unstable molecules that are known to cause AMD, he explains.

Indeed, the findings from this study have had important implications for their own eye studies with the project CREST ('Central Retinal Enrichment Supplementation Trials'), which is led by Prof Nolan and funded by the European Research Council (ERC) through a Starting Grant of EUR 1.4 million. The project was originally designed to compare macular pigment supplements to placebos in patients with AMD. But the trial design has now had to be amended by the Data Safety and Monitoring Committee (DSMC), which is responsible for overseeing the trial.

The DSMC Chair, Dr James Loughman, Dublin Institute of Technology, explains the reason for the change in research: 'Given that an AREDS2 formulation, containing macular pigment, but without omega-3 or beta carotene, has been designated as the new standard of care for AMD patients, it would be difficult to justify the continuation of a trial including a placebo group. An

investigation that compares an AREDS2 formulation to an alternate formulation containing meso-zeaxanthin is certainly of scientific interest given the AREDS2 findings.'

Professor Nolan adds: 'AREDS2 confirmed that taking macular pigment supplements reduced progression of AMD, so we now have a standard of care for patients with this condition. '

The CREST project will now investigate the impact of the macular pigment on AMD and visual performance. The study will compare two different supplement formulations, one of which will contain the central macular pigment, meso-zeaxanthin, which is a new area of research.

Professors Nolan and Beatty have been studying the role of macular pigments for [eye health](#) for over 12 years, and have published over 70 scientific publications on the topic. No doubt the CREST study will add to their growing portfolio as they take a targeted approach in advancing understanding of the protective and optical hypothesis of taking macular pigment supplements. This in turn could potentially improve normal vision and prevent blindness caused by AMD.

Provided by CORDIS

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