

# Eye health Our vision is precious



## Two chronic eye diseases

### Degeneration of the macula in advanced age

Age-related macular degeneration (AMD) is the leading cause of blindness in the Western world for people of advanced age. AMD is a disease in which fine visual acuity is lost due to the breakdown of the macula lutea. This is a tiny area at the center of the retina in the back of the eye responsible for a sharp, colored image.



Zeaxanthin and lutein are the only carotenoids that can be detected in this 'yellow spot', as the macula lutea is also known. The progression of AMD is slow and painless. Because treatment is difficult or in most cases even impossible, prevention of this disease is vital. Recent scientific evidence indicates that an increased intake of lutein and zeaxanthin can prevent the manifestation of this most common form of acquired blindness in the Western world.

### Age-related cataracts

Cataract is the other wide-spread eye disease in the Western world. It is characterized by a slow but continuous clouding of the lens.

Like AMD, it mainly hits the aging population. Although cataracts can be treated surgically by replacing the natural lens, the procedure is costly, and is not available in all parts of the world. This means that prevention is also crucial in dealing with this common debilitating eye disease. Scientific evidence has recently shown that lutein and zeaxanthin may lower the risk for developing cataracts.



Eye health is an important factor in daily life and vision plays a greater role than ever before in today's active and mobile society. People rely on their ability to see objects sharply, but at the same time they are more exposed to the harmful rays of the sun as a result of outdoor activities.

Eye health is a major concern of many people throughout the world. DSM Nutritional Products offers a portfolio of ingredients for eye health, including vitamins A, C and E, the carotenoids lutein, OPTISHARP™ (zeaxanthin) and b-carotene, and the omega-3-fatty acid DHA (docosahexaenoic acid).

## The benefits of lutein and OPTISHARP™ for your eye

Frequent consumption of foods containing lutein and zeaxanthin (e.g. corn or spinach) increase plasma levels and uptake into the macula of these carotenoids.

Evidence is growing that an increased intake of lutein and zeaxanthin may reduce the risk of certain chronic eye diseases such as AMD and cataracts.

The functions of lutein and zeaxanthin are

- absorption and filtering out of harmful near-to-UV-blue light
- acting as potent antioxidants against damaging reactive oxygen species in the eye.

## Lutein and OPTISHARP™ – because eyesight is precious

Carotenoids not only bring colors to nature but also are beneficial for health due to their wide-ranging biological functions. Humans are unable to synthesize carotenoids, but by consuming yellow and green vegetables and fruits we ingest large amounts of these biologically important compounds. Lutein and zeaxanthin are mostly found in dark green leafy vegetables such as spinach and broccoli, or sweet corn. There often exists a dietary gap between the actual daily intake of these carotenoids via food and the daily intake beneficial to health. This gap can be closed either by eating a more healthy diet or by consuming dietary supplements or fortified foods or beverages.

DSM Nutritional Products offers a portfolio of high-quality lutein and OPTISHARP™ (zeaxanthin) product formulations suitable for every end-product application you might want.

**Wiltrud Baier**  
wiltrud.baier@dsm.com

## In brief...

### DSM shows TEAVIGO is safe in foods

Teavigo, the natural goodness of green tea, achieved GRAS (Generally Recognized As Safe) affirmation in July; a strong signal to our food and beverage customers in the US of the ingredient's suitability for inclusion in new food products. We believe that the GRAS status will also be noted in Europe, where functional food is considered a more important market than supplements.