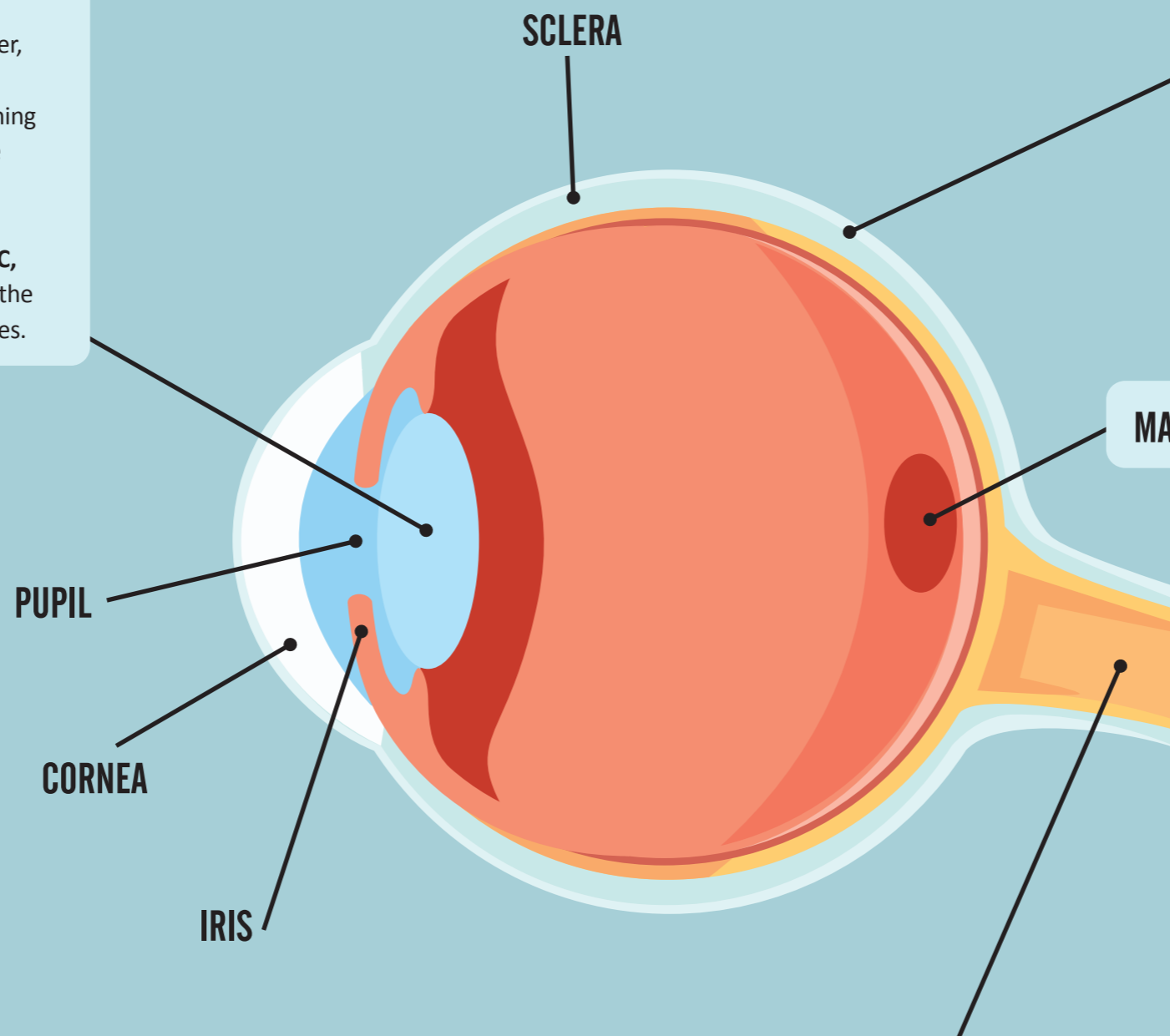


# EYE HEALTH

**LENS** The **lens** lies behind the iris and the pupil and is a bit like a camera lens; it focuses light onto the retina to enable clear vision and adjusts the eye's focus for sharper vision. It is made of water and protein, however as we age, some of the protein may stick together and start to cloud a small area of the lens, making it difficult to see - this is a **cataract**. Over time, the cataract can get bigger, making it even harder to see. Cataracts are a common cause of vision loss. One theory gaining much attention is that oxidative stress may be involved in cataract formation. Dietary antioxidants such as the carotenoids **lutein, zeaxanthin and meso-zeaxanthin, vitamin E, C, zinc** and **lipoic acid** are now considered to be the best defence against oxidative stress in the eyes.

**RETINA** The **retina** is a light sensitive layer at the back of the eye. It converts light into signals that are carried to the brain by the optic nerve. The retina is easily damaged by oxidative stress from blue light (computer screens, LED lights, phone, tablet). **Diabetic retinopathy** is a complication of diabetes - high blood sugar levels cause blood vessels in the retina to swell and leak blood, causing damage to this crucial part of the eye. Carotenoids such as **lutein, zeaxanthin and meso-zeaxanthin** are found in rich supply in the retina. Studies suggest these carotenoids may help to reduce oxidative damage and possibly even prevent progression of the disease.



An adequate and consistent layer of **tears** on the surface of the eye is essential to keep your eyes healthy, comfortable and seeing well. **Dry eye syndrome** is a very common condition caused by a chronic lack of moisture and lubrication on the eye's surface. Research has shown that **omega 3 and / or omega 6 fatty acids** may offer significant benefits to this common problem. As well as balancing painful inflammation, these important fatty acids may help to increase tear secretion too.

**MACULA** The **macula** is the small central part of the retina that's responsible for sharp detailed vision. **Age-related macular degeneration (AMD)** is a disease affecting this part of the eye and is the most common cause of blindness in people over the age of 50 in the developed world. Smoking is a significant risk factor for AMD and masses of research have now shown that oxidative stress plays a major part in the development and progression of AMD too. **Macular pigment** forms an important defence against oxidative stress from harmful blue light (LEDs, computer screens, phone, tablet). It is made up of the **carotenoids lutein, zeaxanthin and meso-zeaxanthin**. Macular pigment density decreases with age but can be strengthened with intake of dietary antioxidants including **carotenoids lutein, zeaxanthin and meso-zeaxanthin, vitamin C, E and zinc**. Many studies have shown this to be an effective strategy to reduce risks of developing AMD as you get older and even to reduce disease progression too.

**OPTIC NERVE** The **optic nerve** carries information from the eye to the brain. Damage to the optic nerve leads to **glaucoma**, commonly named 'the thief of sight' as it often has no symptoms until noticeable sight change occurs. At first it causes peripheral vision loss and can eventually lead to blindness. **Lutein, zeaxanthin and meso-zeaxanthin** are antioxidant carotenoid nutrients, which may help to protect against this problem.