

Recipe for clear vision

1. Take a good helping of light

In the beginning it is all about light. Light is what drives life. It's hard to imagine life on our planet without it.

Sight is an amazing process converting light energy to images made possible by many parts of the eye and brain working together.



2. Then add in the physics

Light enters the eye and is bent or refracted by the **cornea** (the window of the eye). It then passes through the **pupil** (the opening in the iris) and onto the **lens** of the eye (located behind the pupil).

The lens completes refraction by fine tuning the focused light onto the retina. The **retina** changes the light (energy) into electric impulses that are carried through the optic nerve to the vision centre of the brain where the image is interpreted.

3. Use your muscles to mix

There are six muscles that move the eye, the iris has two muscles to make the pupil dilate and contract, and the lens has a muscle area to control focus.

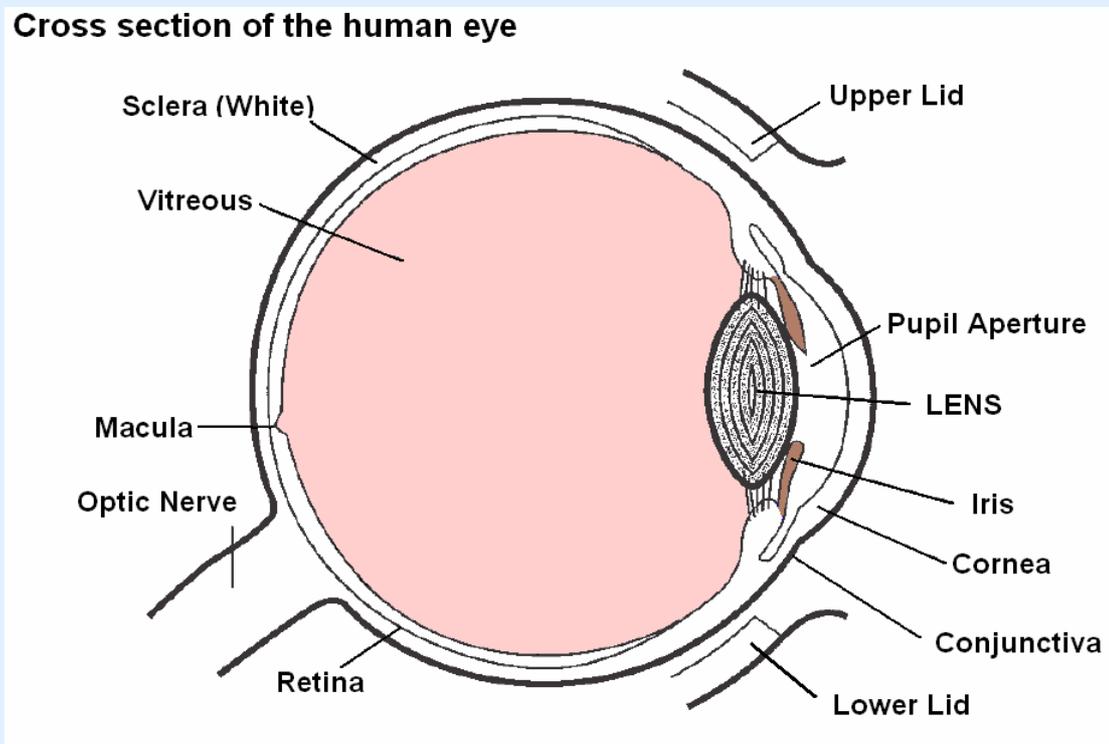


Pupil size can change from 2 millimeters to 8 millimeters. This means that by changing the size of the pupil, the eye can change the amount of light that enters it by up to 30 times.

4. Then finish with some chemistry

The retina has **rod cells**, which are responsible for vision in low light, and **cone cells**, which are responsible for colour vision and detail. At the back of the eye, in the centre of the retina, is the **macula**. In the centre of the macula there are only cones and this part of the eye is responsible for seeing fine detail clearly.

Cells in the retina contain a chemical called **rhodopsin**, or "visual purple." This is the chemical that converts light into electrical impulses that the brain interprets as vision.



5. A lot can go wrong

With so many moving parts plus all the wiring and chemicals there is plenty that can go wrong. That is why you should visit your optometrist for regular eye exams even if you don't need glasses.

