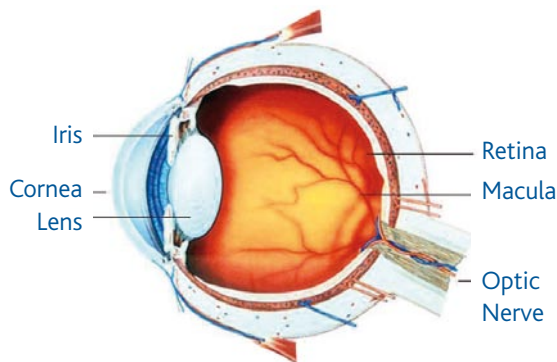


Refractive error

Refractive error occurs when light that passes through the front of the eye fails to focus precisely on the retina. It causes long or short sightedness and difficulties changing focus. Perfect focussing is unusual and most people are slightly long sighted.

Refractive errors typically develop during childhood, when the eyes are still developing.



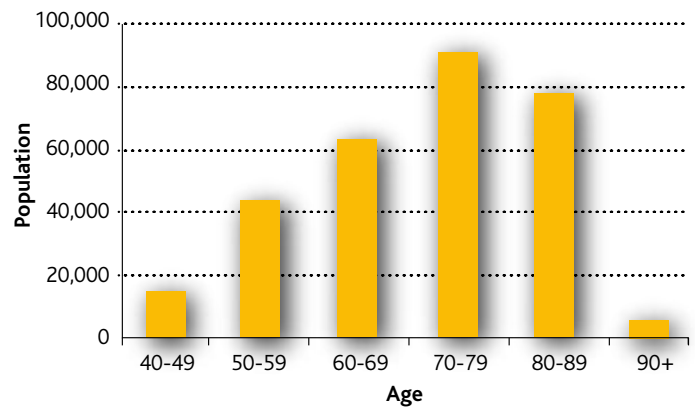
How common is refractive error?

Refractive error accounts for half of all visual impairment in Australia. Between 200,000 and 300,000 Australians have visual impairment as a result of under-corrected refractive error.

The most common forms of refractive error are:

- > 'Hypermetropia' or long sightedness, occurs when light focuses behind the retina causing blurred close and distance vision.
- > 'Myopia' or short sightedness, occurs when light focuses in front of the retina, causing blurred long distance vision.
- > 'Astigmatism' occurs when the curvature of the cornea or lens is non-uniform, causing uneven focus of light rays which results in blurred or distorted vision.
- > 'Presbyopia' occurs with age when the eyes' natural lenses lose some flexibility and are less able to change focus easily, making close work more difficult. It is more common in people aged 40 years or more.

Vision impairment due to uncorrected refractive error by age cohort. Estimated numbers, Australia 2004.



What are the causes?

The exact causes of refractive error are still being studied. Evidence suggests that there may be a genetic link.

What treatment is available?

Visual impairment from refractive error can be treated with correctly prescribed glasses or contact lenses. Laser treatment is also used to correct refractive error.

What research is being conducted?

Associate Professor Paul Baird heads the Centre's Ocular Genetics Unit. Associate Professor Baird is a molecular geneticist and is a leading expert in visual science genetics. The Ocular Genetics Unit is conducting a number of research programs to identify the genes thought to be responsible for common eye diseases. Researchers recently completed the world's largest study of myopia, using twins. More information about our refractive error research can be found online at www.cera.org.au or by telephoning 03 9929 8360.

Eye research needs your support

Donations can be made to the Eye Research Australia Foundation whose sole purpose is to support the work of the Centre for Eye Research Australia.

To donate, or for further information about bequests or gifts, call (TOLLFREE) 1300 737 757.