

## Eye disorders - focusing problems

Problems with focusing (refractive errors) are the most common eye disorders. These occur when the image of what you are looking at does not focus precisely on the back of the eye (retina) and appears blurry. The main types of refractive errors are myopia (short-sightedness), hyperopia or hypermetropia (long-sightedness), astigmatism and presbyopia.

### Most people have some refractive error

Refractive errors occur when there is a mismatch between the length of the eye and its optical power. These mismatches usually originate during childhood and are thought to be affected by both hereditary and environmental influences.

### Myopia (short-sightedness)

People who have myopia (short-sightedness) do not see distant objects clearly. In a normal eye, the lens and cornea focus light into an image on the retina. In a myopic eye, the light is focused in front of the retina and so the image is blurred.

Myopia is a very common condition that affects about 15 per cent of the population. Usually myopia begins to develop in teenage years, although it can happen any time from birth. Myopia may progressively increase over the following few years, slowing in the mid to late twenties in most people.

### Signs of myopia in children

A complete eye test is the only sure way to determine whether your child's vision is normal. Some clues that may lead you to suspect myopia in a child are:

- Screwing up of eyes to see distant objects
- Difficulty reading the blackboard at school
- Sitting very close to the television
- Poor posture while reading
- A lack of interest in playing outdoor games.

### Treating myopia

There is no cure for myopia. However, glasses or contact lenses can help you see clearly. There are several techniques available to correct myopia by reshaping the cornea to reduce its power. These include laser surgery, which removes tissue from the cornea, leaving it with a flatter surface.

High levels of myopia can cause more serious problems, such as stretching and thinning of the retina, holes and tears, and the risk of retinal detachments. If you are myopic, you should have regular eye examinations and talk to your optometrist about the potential for problems.

### Hyperopia (long-sightedness)

People who have hyperopia (long-sightedness) may experience blurred vision, particularly for close work. A mildly hyperopic person can often see quite clearly because the eye compensates. The greater the hyperopia, the harder it is to focus. If there is a significant amount of hyperopia, the effort of focusing for long periods can cause tired eyes or headaches. Children with headaches should always be checked for hyperopia, even if they don't report any problems with their vision.

### Treatment for hyperopia

Young people who are slightly hyperopic may not have problems. Correcting hyperopia through wearing glasses or contact lenses can improve reading ability and concentration, through increased comfort and clarity of vision. Distance vision can also be improved in some cases. It is possible in some cases to correct hyperopia with laser surgery.

## Astigmatism

Astigmatism is a focusing error that tends to distort vision at all distances. In astigmatism, some directions in an image are more out of focus than others: for example, horizontal lines blur, while vertical lines are clear. Even slight degrees of astigmatism may encourage headaches, fatigue and reduce concentration.

Most astigmatism is caused by the shape of the front surface of the eye (the cornea) or by slight tilting of the lens inside the eye. It may be an inherited characteristic or a normal variation accompanying growth. Astigmatism is not an eye disease. Most people have at least a very slight amount of astigmatism.

## Treatment for astigmatism

Glasses and contact lenses can correct astigmatism. Sometimes correction can cause change in the apparent size and shape of objects and may affect judgement of distance. In most cases, adjustment to these side effects takes only a week or so. It is also possible to correct astigmatism with laser surgery.

## Presbyopia

Presbyopia is a common condition that makes vision difficult at a normal reading distance. For instance, you may find that you are holding your newspaper further away from your eyes to make the print clearer, or that periods of close work result in sore eyes, headaches or tiredness. With age, the lens loses its flexibility and is less able to change its shape and ability to focus. This is a completely normal ageing change.

Presbyopia is usually first noticed around the age of 40 to 45 years and increases between the ages of 45 and 65. From 65 years onwards, there are unlikely to be any further significant changes to vision due to presbyopia.

## Treatment for presbyopia

Presbyopia is corrected by a spectacle prescription designed especially for close distances. Multifocals, bifocals or half-glasses allow you to do close work and see distant objects clearly. Contact lenses are also available in monovision or multifocal designs, specifically for presbyopia. Newly developed laser and cataract surgery techniques can also correct presbyopia.

Between the ages of 45 and 65, your prescription is likely to change significantly. It is sensible to have your eyes examined every two to three years to review your correction and your general eye health.

## Where to get help

- Your doctor
- Your local optometrist
- Optometrists Association Victoria Tel. (03) 9652 9100

## Things to remember

- Refractive errors are the most common eye disorders.
- Refractive errors include myopia (short-sightedness), hyperopia (long-sightedness), astigmatism and presbyopia.
- Causes of refractive errors are uncertain, but appear to be affected by hereditary and environmental influences.
- Vision problems due to refractive errors can generally be corrected or alleviated by the use of prescribed glasses or contact lenses, or by laser surgery.

**This page has been produced in consultation with, and approved by:**

Optometrists Association Victoria

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