
Eyes – refractive errors

Summary

- Refractive errors are related to the focusing ability of your eyes.
 - Symptoms of refractive errors include blurry vision, tiredness, headaches and reduced concentration.
 - Refractive errors such as short-sightedness usually develop in childhood and may change as you age.
 - Nearly everyone will develop a refractive error as they age beyond 40 years and become unable to focus at close distances.
 - You can wear glasses or contact lenses, or have surgery to correct your vision if you have refractive errors in your eyes.
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Refractive errors are common eye disorders related to the focusing ability of your eyes. If you have this type of eye condition, you will find it difficult to see clearly because your eyes cannot focus properly.

When people with good vision look at an object, the image is focused on the back of the eye (retina). If you have a refractive error, the image is not focused exactly on the retina and the object appears blurred. Changes to your vision usually occur gradually and they may not be detected until you have an eye test.

The different types of refractive errors include:

- astigmatism – you have blurry vision at all distances
- long-sightedness (hyperopia) – you have trouble focusing on objects that are close and they appear blurry
- presbyopia – you have trouble reading or seeing objects that are close, which is more common in people aged 40 years or older
- short-sightedness (myopia) – you have trouble focusing on objects that are far away and they appear blurry.

Symptoms of refractive errors in eyes

The symptoms of refractive errors vary. You may have one or more symptoms including:

- blurred vision – when you look at an object in the distance or close up
- tiredness
- headaches
- reduced concentration.

Causes of refractive errors in eyes

Refractive errors usually occur when your eye cannot focus images clearly on the back of your eye (retina). These types of eye conditions usually develop in childhood, but they can affect people of all ages.

Your chance of developing a refractive error is greater if you have family members with these types of eye conditions. Environmental factors may also increase your risk of developing refractive errors.

Causes of refractive errors include:

- Astigmatism – the cornea or lens of your eye is curved more in one direction than the other (oval shaped), and the image is focused more strongly in one direction than the other.
 - Long-sightedness – the point of focus of the image is behind the retina, because your cornea is flatter than usual and your eye is shorter from the front to the back than usual.
 - Presbyopia – you have difficulty seeing in dim light and have trouble focusing on fine print and objects that are close, because the lens becomes less elastic and cannot bend light properly. This is a normal part of ageing.
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- Short-sightedness – the image is focused in front of the retina because the clear front part of the eye (cornea) is too curved or your eyeball is longer than usual.

Diagnosis of refractive errors in eyes

Refractive errors are simple to diagnose. An optometrist or ophthalmologist usually asks you to read a special chart (Snellen chart) that has large letters at the top and smaller letters below. If you can see all the letters clearly, you have 6/6 vision.

If you have 6/12 vision, it means that you can read letters at six metres that a person with normal vision can read from a distance of 12 metres. In everyday language, people still talk about 20/20 vision, which is a throwback to when Australia, like the USA, used imperial measurements, and so 20/20 is the same as 6/6 vision.

Your eye healthcare professional will also check other aspects of your eye health and vision when you go for an eye test.

Treatment for refractive errors in eyes

While a cure for refractive errors has not been discovered, there are ways to improve your vision if you have these eye conditions. Ways to correct your vision if you have refractive errors include:

- wearing glasses – a simple and safe way to correct your vision
- wearing contact lenses – these are worn directly on the eye
- having laser surgery – using a laser beam to change the shape of your cornea
- having intraocular lens surgery – your lens is replaced with a small plastic lens (intraocular lens).

Regular eye tests will detect refractive errors or other changes to your eyes. Talk to your optometrist or ophthalmologist for more information.

Where to get help

- Your doctor
- NURSE-ON-CALL Tel. 1300 60 60 24 – for expert health information and advice (24 hours, 7 days)
- Your optometrist
- Your ophthalmologist

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