

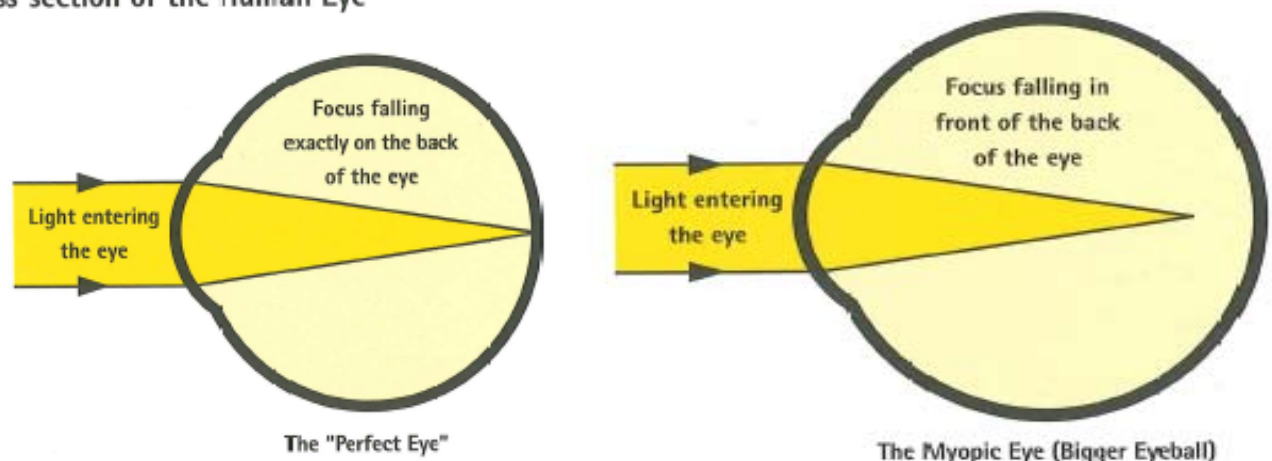
# Myopia

Myopia is often called 'short-sight' or 'near-sightedness'. This is because people with myopia can see clearly for only a short distance and things further away look blurry. Myopia commonly starts in childhood and distance vision may become blurred so gradually that the child is unaware he or she does not see as clearly as other people do. Some people experience late onset of myopia, emerging as a problem in middle age even if they have not experienced difficulties with vision during their childhood.

## What causes myopia?

Myopia occurs if the cornea is curved too much or the eye is longer than normal. These conditions mean the focus falls in front of the retina (at the back of the eye) instead of right on the retina and the image formed on the back of the eye is not as sharp as it should be. The blurred effect increases when things are viewed at a greater distance.

## Cross section of the Human Eye



Myopia can be inherited but can also occur when no one else in the family has it. There is no easily predictable way to determine the chances of myopia developing in a child who has a parent with myopia. Recent epidemiological studies show a strong association between prolonged close work such as reading and progression of myopia.

## Does myopia change?

Since the size and shape of the eyeball are the main factors in governing focus, and the eyeball continues to grow until about age 25, it is easy to see how a short-sighted child can become more short-sighted with age. The visual system matures at about 7-8 years old but the eyes continue to grow with the rest of the body. Our present knowledge does not allow us to prevent myopia or reduce it once it is present. It typically increases during childhood and in the teenage years to level off in the mid-twenties but people in professions requiring a lot of close work such as reading can develop myopia as adults and experience progression of myopia well into their working life. Eyes with normal myopia are generally healthy eyes and require no treatment apart from a refractive correction. High degrees of myopia (over 6 or 7 dioptres) are associated with increased risk of retinal detachments, and in older age,

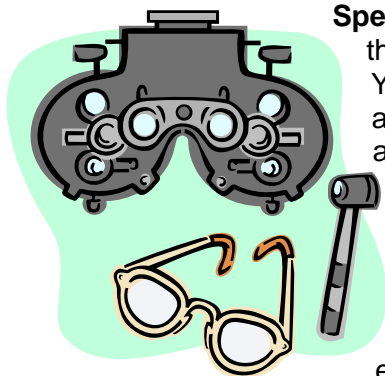
with certain types of glaucoma, cataracts, and retinal degeneration.

### **When should I seek the advice of my optometrist?**

If the quality of your vision detracts from enjoyment of life and makes it difficult to see things at a distance you should see your optometrist for a comprehensive eye examination. People with uncorrected myopia will often frown and squint in an effort to see better and this may cause headaches. Short-sighted children often hold books very close to read or may sit right in front of the television.

### **What are the Treatment Options?**

The aim in treating myopia is to adjust the focus precisely onto the retina. Corrective lenses change the refraction of the image by augmenting the focussing mechanism of the eye. Refractive surgery can be used to reshape the surface of the eye. Wearing spectacles or contact lenses will not cause eyes to become 'weaker', although people often feel they need them more as they become used to the sharper focus and more comfortable vision the lenses provide. For some young children wearing spectacles is very important if vision is to develop normally.



**Spectacles:** Prescription glasses shift the point of focus so that it falls exactly on the back of the eye giving clear vision. You may need a different degree of correction in either eye and your optometrist will be able to discuss this with you as part of evaluating treatment options best suited to your myopia.

**Contact Lenses:** A wide range of lens technologies is available in both hard (rigid gas permeable) and soft (usually disposable) materials, and including options for extended wear and multifocal prescriptions. Ask your optometrist which ones will be best for you.

**Ortho-K:** With treatment using orthokeratology (Ortho-K) you will wear rigid contact lenses for several hours each day to 'reshape' the curvature of your eye. Lenses need to be worn slightly less frequently in the maintenance phase and if you stop wearing the lenses your eye will revert to its original shape. Your optometrist will be able to advise on whether this treatment is suitable for you.

**Refractive Surgery:** Refractive surgery can permanently reshape the surface of your eye using methods such as LASIK, PRK, and LASEK. Ask your optometrist for more information; he or she will be able to assist with an assessment and referral if appropriate.

### **Regular Eye Exams**

The NZ Association of Optometrists recommends a regular eye examination every 2 – 5 years for healthy adults. After age 65 more frequent exams are a wise precaution to ensure early diagnosis and treatment of sight threatening conditions such as glaucoma and age-related macular degeneration (ARMD).