

**OPTOMETRISTS  
CONTACT LENS PRACTITIONERS  
BEHAVIOURAL OPTOMETRY  
CHILDREN'S VISION**



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## Orthokeratology (Ortho-K)

**Ortho-K** is the process of reshaping the front surface of the cornea by the wearing of hard RGP (Rigid Gas Permeable) contact lenses whilst sleeping overnight to temporarily reduce refractive error, so that when the contact lenses are removed in the morning, vision is clear, eliminating the need to wear glasses or contact lenses during waking hours.

In some ways Ortho-K is similar to the use of dental braces to straighten crooked teeth. The main difference is that if a tooth is corrected for some months it will stay in the new position, but the cornea is highly elastic, and will gradually return to its original shape when the contact lenses are removed.

Thus the overnight reshaping of the cornea is carefully calculated to give clear comfortable vision lasting all day long. The contact lenses are then reinserted at night and the cycle continues.

It is important that Ortho-K lenses are worn every night to maintain the ideal corneal shape, but the contact lens wear can be discontinued at any stage and after a few days vision will return to the pre-treatment status.

### Who is suited for Ortho-K?

Ortho-K may be an appealing option for all people desiring freedom from glasses or contact lenses during the day, especially for sports persons (eg. swimmers, footballers), those who work in dusty or dirty environments, or contact lens wearers who suffer from intolerance due to air-conditioning, allergies, dry eyes etc.

However, at present the procedure is only suitable for people with low to moderate myopic (short-sighted) refractive errors up to about -5.00 dioptres, low levels of astigmatism up to -1.50, or low levels of hyperopia (long-sightedness).

The procedure does not work as effectively on very steep or very flat corneas. In addition, there are several unknown factors for each individual – the complexity of the corneal shape, the rigidity of the cornea itself and the degree of interaction of the eyelids. Thus the speed and extent of corneal reshaping will vary from one individual to the next.

### Does Ortho-K have advantages over Refractive Laser Surgery?

Yes. Apart from being far less costly than laser surgery, Ortho-K is non-invasive. There is no loss of corneal tissue, no surgical risks, and above all the procedure is reversible (laser surgery is not).

### Myopia Control and Ortho-K

Studies have shown that when Ortho-K is used in young myopes there can be a reduction of up to 50 to 60% in the rate of progression of the myopia. This varies from patient to patient but compares favourably with other treatment options for slowing myopic progression such as atropine eye drops, daily wear multifocal soft contact lenses and multifocal spectacle wear.

### Process

At an initial visit you are assessed for suitability for Ortho-K. This will involve a thorough examination of your eyes and detailed measurements of the shape of your corneas. At a subsequent visit you will be fitted with a trial pair of contact lenses, taught how to insert, remove and care for the contact lenses. You will then commence wearing these lenses every night and your progress will be monitored with frequent reviews over the following days and months to ensure we achieve the desired outcome for your vision.

### How long does it take

Changes occur fairly rapidly over the first few days and weeks. Hence frequent examinations, multiple lens changes and assessments may be required. Stabilisation tends to occur after a few months and at that stage a final pair of retainer lenses will be prescribed for ongoing use.

Review examinations will then be required on an ongoing 6-12 monthly basis.