

Orthokeratology Information

What is Orthokeratology?

The goal of Orthokeratology, OrthoK or corneal refractive therapy is to use a rigid gas permeable contact lens to reshape the cornea and provides correction for refractive errors. Orthokeratology is a non-surgical procedure that eliminates the need for glasses or contact lenses during the day. With OrthoK you wear specially designed lenses at night while sleeping. These lenses gently change the shape of your eye so that you can see clearly, with your natural vision, during the day. This safe and effective technique is mainly used to correct short-sightedness (myopia), long-sightedness (hyperopia), astigmatism and presbyopia (blurred near vision). It is an alternative to LASIK for those who don't want surgery. One of the benefits of the system is that if you decide to discontinue lens wear, your cornea returns to its normal shape.

How does it work?

When a person cannot see clearly it may be because the eye is too long, too short or the surface of the eye is out of shape so that images do not focus on the back of the eye (the retina). Normally we fix this by refocussing images with spectacles or contact lenses. With OrthoK we refocus images by changing the shape of the front surface of the eye. To make an OrthoK lens we first map the surface of your eye, using a high tech instrument known as a topographer. Your eye care practitioner uses this information along with your prescription to design a customised lens for YOUR eye and its unique vision problems. OrthoK lenses are manufactured on a high-speed computer assisted lathe. They are made of materials that have high oxygen permeability that allow your eyes to 'breathe' overnight while you sleep, maintaining eye health. The back surface of the lens has a number of specialised curves that move the tear film under your lens and reshape the front surface of your eye while you sleep. The result after waking and removing your lenses is clear, sharp vision.

Is it safe?

OrthoK is a safe and reversible procedure. It was approved by the United States of America Food and Drug Administration in 2002. The Australian Therapeutics Goods Administration includes OrthoK lenses. All contact lens wear has a small risk of serious eye infections and so does OrthoK lens wear. Typically, infections can be treated by your eye care practitioner. The risk of infection can be greatly reduced by following your cleaning and lens care instructions meticulously, only wearing the OrthoK lenses as prescribed by your optometrist and attending the necessary follow up visits. Research suggests that the likelihood of developing an eye infection with orthokeratology is similar to those patients who wear soft monthly disposable lenses.

Who is it for?

The following is a list of good candidates for OrthoK:

- Those unable to wear contact lenses due to allergies and dry eye
- Active people who do not want the inconvenience of glasses.
- People concerned with progressive myopia (distance script getting worse)
- Contact lenses wearers who perform plenty of near work (screen based activities)

Myopia Control

The number of children who are becoming myopic has grown rapidly over the last 25 years. The Centre For Disease Control in the United States has estimated, that by the year 2020 50% of the world's population will have myopia. The results of recent scientific studies point to OrthoK as one of the best options for controlling myopia progression. Although, OrthoK has been shown to slow myopia progression in the groups studied, the same results cannot be guaranteed in individual cases. Why is Myopia Control important? Myopia can lead to sight threatening conditions such as retinal detachment or glaucoma later in life. Trying to slow down the progression of myopia is important as there is a higher risk of developing these sight threatening diseases when you are more myopic. The younger a child is when they first exhibit myopia the more likely that they will progress to high levels of myopia. Further information regarding myopia control can be found at: [Myopia Prevention](#)

Can OrthoK be used by Children?

Children make great OrthoK lens wearers. Practitioners note that children are very motivated and follow their instructions. Children also learn how to handle and care for OrthoK lenses very quickly. The OrthoK lenses are inserted just before going to bed and taken out in the morning. This means that children will not need to handle their lenses during the day or at school. When lenses are inserted there may be some mild discomfort however, the lens sensation disappears when they close their eyes and go to bed.

Eyecare Eyewear's Orthokeratology Fitting Procedure

- First Appointment: Initial consultation and corneal topography.
- Second Appointment: Contact fitting and instruction visit where you will learn how to insert, remove and look after your new orthokeratology lenses.
- Third Appointment: Contact lens aftercare review is usually scheduled for 2 weeks after collection where the optometrist will check the fit of the lenses and ensure that the patient has mastered the insertion, removal, care and maintenance of your orthokeratology lenses.
- Additional review appointments may be required if:
 - a. The lenses need to be reordered due to sub optimal fit
 - b. The patient requires additional assistance with insertion removal
 - c. The patient is having some other problems with the system like ocular irritation.
- Standard 6 monthly or 12 monthly reviews.

Fees and Warranties

An account for orthokeratology is split into two components:

- Orthokeratology Consultation Fitting Fee
- Orthokeratology Lenses

The Orthokeratology consultation fee is usually quoted after the initial consultation and topography visit. It covers all future visits, and the use of all equipment, within the first 12 months of account generation. This fee is non-refundable.

The Orthokeratology lenses are charged at different rates according to the following parameters:

- Complex or simple design (complex = corneal astigmatism requiring toric or quadrant specific lenses)
- Ordered with or with a warranty (Per lens = without warranty and Per case = with warranty)

The following warranty applies to all new OrthoK lens purchases that have been ordered with in conjunction with OrthoK consultation and with warranty (per case). Within 6 months patients may utilise the We Care Warranty for their OrthoK lenses.

- 1x lens replacement for each eye if the lens is damaged or lost
- 1 x lens replacement for each eye if the parameters of the lenses need to change
- Full refund of the price of the OrthoK lenses if the patient is not happy with the outcome (this does not include the consultation fee)

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Care and Maintenance

OrthoK lenses need to be kept in a sterile lens case and solution when not being worn and cleaned regularly.

We recommend either the Menicare Plus by Menicon or AO Sept Plus with Hydroglyde by Alcon for lens care and maintenance. Regular protein removal is important for your orthoK lenses. For this we recommend Progent by Menicon.

Tap water should never be used with any of the storage or cleaning of orthokeratology lenses.

We recommend the replacement of retainer lenses every 2 years. Replacement lenses can be ordered at the per lens rate provided if no parameter changes are requested.

Lens Insertion

- Wash hands thoroughly with soap and dry. Remove lens from case and insert directly into eye or rinse with sterile saline before lens insertion.
- Discard neutralised solution. If not wearing lenses immediately, they can be stored in neutralised solution in the case for 14 days, after which they must be disinfected again before wearing.
- Rinse case with solution and air dry case and lens holders separately on a tissue.

Lens Removal

- Wash hands thoroughly with soap and dry.
- Remove lenses by gently pinching off the lens from the eye with thumb and forefinger or use a rigid contact lens remover.

AO Sept Plus Disinfection Procedure

- Place each lens into the designated basket and rinse with solution.
- Fill the case with AO Sept Plus to the fill-line and screw on the lens basket tightly.
- Sit upright, do not shake and soak for a minimum of 6 hours, or overnight.

Case Hygiene

- Rinse the case and basket daily with sterile saline.
- Air dry case.
- Every three months, any unused solution and the lens case should be discarded and replaced.
- New bottles of solution come with new cases.
- AO Sept Plus is available in: Value pack: 2 x 360mL bottles, 1 x 90mL bottle and three lens cases.

Menicon Disinfection Procedure

- Fill the storage case with fresh solution and make sure the lenses are covered.
- Tighten the caps and leave overnight (during the day for OrthoK lenses) or for a minimum of 6 hours.
- For longer periods of un-wear or storage, replace solution weekly.

Case Hygiene

- Once per week, the case should be given a thorough clean with hot soapy water and air dried or dried with a tissue.
- A cotton tip can be used to clean inside the lens holders and caps.

Intensive Cleaning

- Once per month, use Menicon Progent to intensively clean and remove protein deposits from lenses.
- Place the lenses in the lens holders of the Progent cleaning case, combine a single unit dose of solution A and B in the case, close and shake gently to mix.
- Soak for 30 minutes.
- Soaking for longer may discolour the lenses.
- Remove the solution from the case, rinse lenses and case thoroughly with Menicare Plus prior to insertion or disinfection.
- **DO NOT PUT STRAIGHT IN EYE.**
- Menicon products available: Menicare Plus: 1 x 250mL bottle, one lens case. Progent: 7 A&B treatments. Progent cleaning case.

Wear Schedule and Aftercare Appointments

Only your optometrist can detect signs of inflammation and infection related to contact lens wear. This can signal intolerance to wear or contraindication of wear. For this reason, it is important you attend aftercare appointments so we can monitor for any complications to prevent any serious infections or inflammatory events. Keeping to the recommended wear schedule is also important to minimise the risk of infection or inflammation.

Other Orthokeratology Tips

- NEVER use water to clean, rinse or store lenses.
- NEVER put un-neutralised solution directly into the eye.
- A warm, moist room is a great environment for bacterial growth, so keeping your lenses in a room other than the bathroom is recommended, especially if you have an ensuite or bathroom where a toilet is present and airborne bacteria can easily make their way into cases and solutions.
- Use a contact lens tracker app or smartphone reminder app to remind you monthly or fortnightly to replace your lenses.
- Set a reminder 3-monthly for solution and case replacement.
- Write the date on the solution when it was opened so you know when to replace it.
- Risks of infection increase with non-compliance with these instructions. While wearing your lenses, if you notice that your vision worsens, your eyes feel irritated or look red, remove your lenses immediately. If the problem does not resolve within 6 hours, call our office to book an emergency appointment.