

## REVIEW ARTICLE OF ORTHOKERATOLOGY

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## ABSTRACT

**Purpose:** Review the published evidence to evaluate the ability of orthokeratology treatment for reduce myopia progression in children's and adolescents compared with the use of spectacles or contact lenses.

## INTRODUCTION

Orthokeratology is a non invasive technique specially designed ortho- k lenses. The ortho – k lens design three zones. The central zone or base curve of the lenses is fitted flatter than the central corneal curvature and comprise a spheric curve. The peripheral alignment curve zone bears the weight of the lens and aids in the lens centration. Many articles searches of the PubMed database, American academy of ophthalmology and other journals. **Conclusion:** Orthokeratology is the best option for myopia progression of children's and adolescents and reduce the risk of keratitis from contact lens wearers.

## Orthokeratology

This is a non surgical procedure that eliminates the need for glasses or day time contact lens. It improves vision by gently reshaping your eyes while you sleep using specially designed therapeutic contact lenses you just put the specially fitted lenses in at bed time and when you awake, this safe and effective treatment can corrected near sightedness, farsightedness, astigmatism and presbyopia. It is great alternative to LASIK for those who don't want the risk or are not ready for surgery.

## Advantages of Orthokeratology

- Clear day time vision without the need for glasses or contact lenses.
- No surgical procedure needed.
- Reversible process.
- No hazy vision of similar post-laser-surgery conditions.
- Modifiable as your eye conditions change.
- Pain free.
- Child safe.
- Safe and well understood technology

## How does ortho –K work

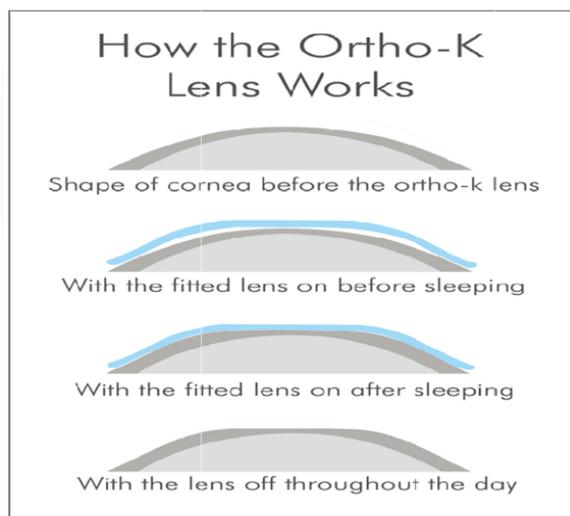
Ortho-K works by using firm contact lenses to reshape

the eye, allowing 20/20 vision without the need for glasses. While rigid lenses are generally considered to be not as comfortable as soft lenses overnight. Ortho-K is generally very well accepted since the main cause of rigid lens discomfort during working hours is the feeling of the eyelids moving over the lens edges while blinking.

Since ortho-K lenses are worn when you are asleep, there is no blinking and therefore generally no residual feeling of the lens after the adaptation period. 60% of our eyes focusing power comes from the cornea. The cornea is extremely sensitive to very small changes.

**For example** 6um flattening of corneal thickness results in 1 diopter of changed vision in myopia. So especially Shaped lens can be used to lightly press the cornea causing it gradually to be reshaped to the correct shape for focused vision.





### Ortho-K lens

It is manufactured using high speed computer assisted lathes and made from an advanced highly oxygen permeable material which allows our eye to breathe overnight and maintain excellent health.

### Effect of Ortho-K

The effect of ortho-K lasts for around 72 hours. Once patients have acclimatised themselves to ortho-K they commonly experience noticeable improvements within a few hours of use. With regular use of ortho-K you can expect to experience 20/20 daytime vision after a week. Ortho-K can be used for a lifetime.

### It is safe

Ortho-K is a very safe and reversible procedure. It was approved by FDA in 2002 however, as with any contact lens wear, there is a small risk. Most typically, a minor infection is easily addressed by antibiotic drops. The risk is greatly minimized by adopting a regime of very careful cleaning and disinfecting by wearing the lenses as prescribed.

### What is the cost?

Ortho-K costs an average Rs. 15,000 to Rs. 20,000 in India and can be used for a year (which is roughly half the cost of LASIK).

### Ortho-K for children

It is an easy and convenient way to correct children's vision, overnight vision correction, removing the need for glasses or conventional lenses. It improves children's confidence to play without the fear of losing a lens or breaking their glasses. Myopia can lead to a shopping list of eye problems in later life. Short-sighted eyes are more susceptible to retinal tears or detachments because of the stretching of the eye. Thankfully, ortho-K allows children to slow the advancement of degenerative eye problems using firm 'retainer-like' contact lenses.

Ortho-K slows the advance of these conditions at an early age without the need for surgery or spectacles.

Ortho-K lenses are worn at night; there is no discomfort experienced while blinking. When the child is asleep, the lenses apply pressure to the cornea, gently reshaping the eye to allow improved vision in the morning that lasts all day.

### Ideal patients for Ortho-K (Orthokeratology)

- Do not want to wear contact lenses during the day
- Are children that are beginning to be nearsighted
- Are too young for Lasik
- Are active in sports and water activities
- Want a less expensive alternative to Lasik
- Want a non-surgical and non-invasive alternative to surgery

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