

PRECISION OF ORTHOKERATOLOGY

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Author's contributions

This work was carried out in collaboration between both authors. Author PHC had wrote the Introduction and Conclusion part of this article. Author BHS had managed the abstract and literature review along with the formatting of the article. Both authors had read and approved the final manuscript.

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ABSTRACT:

This article describes about the introduction, fitting guidelines, patient selection and contraindications of ortho keratology.

INTRODUCTION:

DEFINITION:

It is a study where reduction, modification or elimination of the visual defect by the application of contact lenses.

Here, reverse geometry lens is being applied.

REVERSE GEOMETRY:

The meaning of reverse geometry lens centrally flatter and peripherally steeper [1]

ORTHOKERATOLOGY:

The meaning of ortho keratology is

29 Ortho = straight

30 Kerat = cornea

31 Ology = knowledge

32 Orthokeratology is being used for myopia reduction. The effectivity of
33 orthokeratology is “ it significantly changes the corneal curvature and corneal
34 thickness and it can be showed by corneal topography. Before orthokeratology
35 lenses, Rigid Gas Permeable lenses were used for this purpose. RGP lens flattens
36 the cornea and decreases the myopic refractive error.[1,11]

37 It is difficult to achieve the correct orthokeratology lens, so trial and error
38 method is applicable over here. By the trial and error method, when we get the
39 final perfect lens, then this lens is called “RETAINER LENS”. Exmples are
40 Fargo series, BE Retainer etc.[1]

41 **FITTING OF ORTHO KERATOLOGY LENSES:**

42 Corneal Topography, extensive knowledge of RGP lenses and Large set of trial
43 lenses are required. Eccentricity should be measured always. The meaning of
44 eccentricity is “how much central part of the cornea is decentered from its
45 normal position”. Fitting should be done on the trial and error basis. After
46 fitting, patient should be seated for 5-10 minutes for adaptation and the fit
47 should be checked with white light and then with fluorescein with blue filter
48 light. In low illumination pupil diameter should be assessed also. Ideal fitting
49 pattern should be 3-4.5mm central bearing, wide – deep tear reservoir around
50 central bearing zone, minimal movement with blink which depends on total
51 diameter and good lateral centration with pupil coverage[1,2,4,]

52 **PATIENT SELECTION:**

53 Ortho Keratology is indicated in patients having:

54 Myopia should be between -0.5Dsph to -4.00Dsph, Less than -1.50Dcyl of
55 corneal astigmatism, Central K reading should be greater than 42.00D, High
56 motivation is required.[2,5,7]

57 **AGE CRITERIA :**

58 Children of age 8 to 12 with progressive myopia and Adolescents and adults
59 under the age of 40 years.[3,8,9]

CONTRAINDICATIONS OF ORTHO KERATOLOGY LENSES:

Ortho K lenses is contraindicated in following:

Previously failure of RGP Contact Lenses, Corneal disease and inflammation of Anterior chamber, Systemic disease which affects the eye, Keratoconus, Unrealistic patient's expectation, Against the rule Astigmatism $> \pm 0.75$ Dcyl, Very steep and flat K value, When the cornea is spherical, means eccentricity is zero, Very loose and flaccid lids.

COMPLICATIONS:

Complications of Ortho K lenses include infections/ adverse reactions, induced astigmatism and aberration related issues.[10]

CONCLUSION:

In ortho keratology lenses, reverse geometry lens is being applied. Before prescribing this lens, one must have extensive knowledge on RGP. In cases of RGP failure, it is contraindicated. It is useful for myopic patients with the range of -0.5 Dsph to -4.00 Dsph with the cylinder of ± 1.5 Dcyl. By changing the corneal curvature for a transient period, orthokeratology lens is able to correct the refractive error.[1,6]

Consent Disclaimer:

As per international standard or university standard, patient's written consent has been collected and preserved by the authors.

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