ALL ABOUT SOFT CONTACT LENSES – EASY TO UNDERSTAND

PARTHA HARADHAN CHOWDHURY[1]

BRINDA HAREN SHAH[2]

NRIPESH TIWARI[3]

[1]M.OPTOM, ASSOCIATE PROFESSOR, PRINCIPAL

Department of Optometry, Shree Satchandi Jankalyan Samiti Netra Prasikshan Sansthan Pauri, Affiliated to Uttarakhand State Medical Faculty, Dehradun, India

[2]M.OPTOM, Practitioner, Ahmedabad, Gujarat, India

[3]D.Optom, Chief Optometrist, District Hospital Pauri, Government of Uttarakhand

CORRESPONDING AUTHOR:

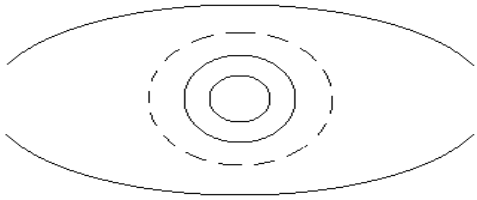
PARTHA HARADHAN CHOWDHURY, M.OPTOM, ASSOCIATE PROFESSOR, PRINCIPAL, Department of Optometry, Shree Satchandi Jankalyan Samiti Netra Prasikshan Sansthan Pauri, Affiliated to Uttarakhand State Medical Faculty, Dehradun India

ABSTRACT:

This paper describes about Soft Contact lenses, its classification and its evaluation.

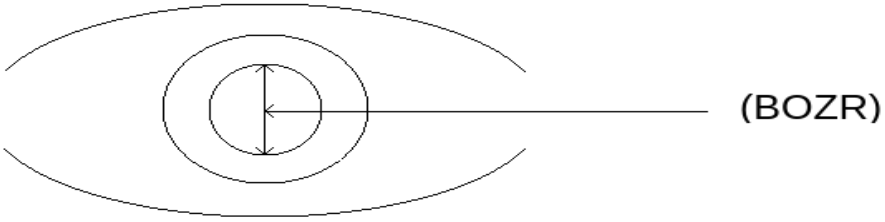
INTRODUCTION:

Soft Contact Lens is a device which is placed on the cornea. It is remembered that Soft Contact lens is bigger in size compared to cornea.

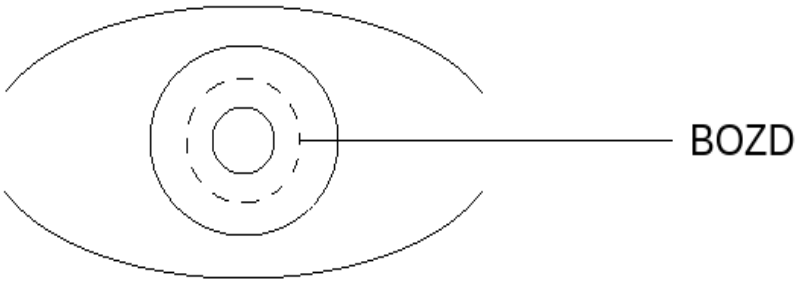


Regarding Soft Contact lens, following points should be remembered:

- After Soft Contact lens fitting, Na- Fluorescein dye is contradictory (means not use)
- On the cornea (Eye), Soft Contact lens movement is very less compared to Rigid gas permeable contact lens
- Hypoxia (lack of Oxygen) is more in Soft Contact lens as compared to RGP contact lens
- In case of High Astigmatism, always Rigid Gas Permeable contact lenses are prescribed, not Soft contact lens.
- 4:1 rule is applicable only for Soft contact lens fitting (It means up to +/- 4.00 DSPH & up to +/- 1.00 DCYL, spherical power will be prescribed)
- BOZR (Back Optic Zone Radius) is measured by Keratometer. BOZR is a pupillary Diameter.



- BOZD (Back Optic Zone Diameter) covers the Back Optic Zone Radius (BOZR). Normal range is 7.90 – 9.30 mm.



During Soft Contact Lens fitting, below of these tests are essential:

1. Refraction:

- R – Refraction
- R – Retinoscopy

After doing the Refraction, this formula should be used:

- $F_{CL} = \quad F_{sph} / 1 - [d * F_{sp}]$

  Where, d = vertex distance = 15 mm

  Always Vertex Distance should be converted into meter.

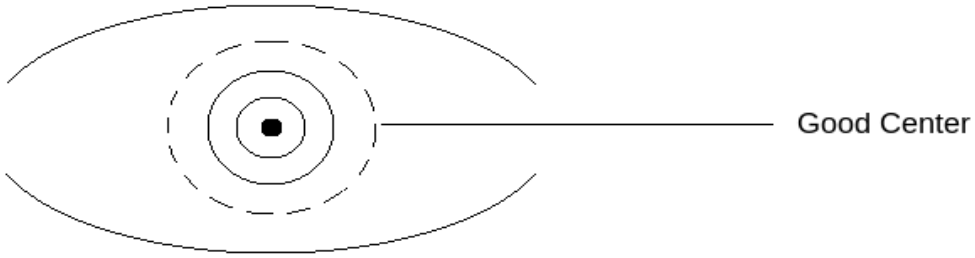
  This formula is used when Refractive Error is greater than +/- 4.00 D

2. Keratometry:
   - To measure the Base curve of the Contact lens
3. Horizontal Visible Iris Diameter (HVID):
   - In case of Soft Contact lens fitting, HVID will be (HVID + 2 mm)
4. Precise Slit lamp / Torch Light evaluation is needed.

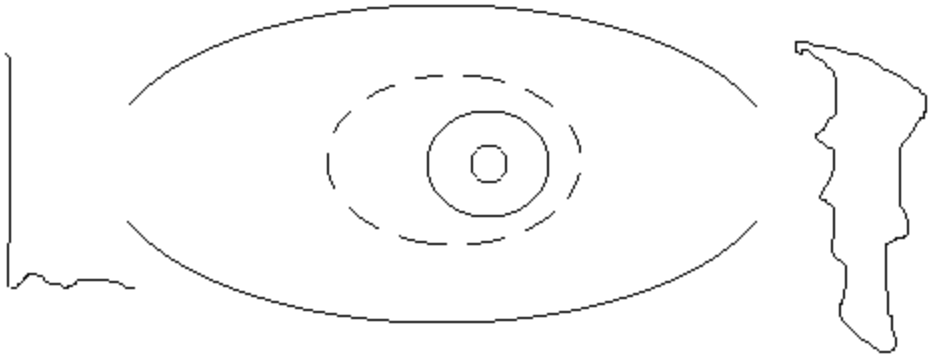
After fitting the Soft Contact lens below of the points are very essential:

A. Lens Centration:

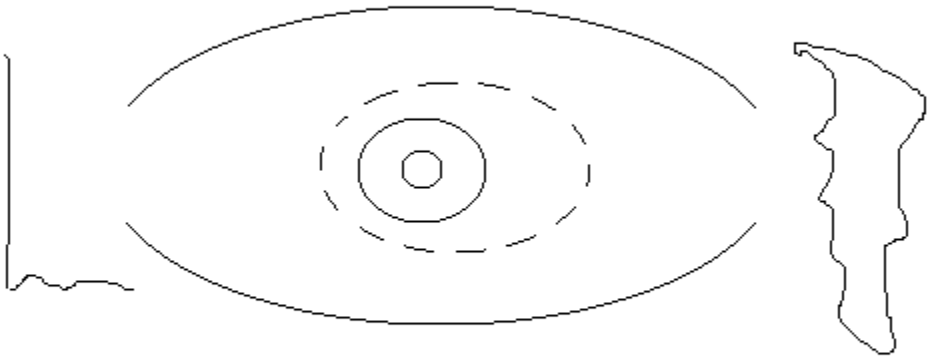
Properly it is placed on the cornea or not



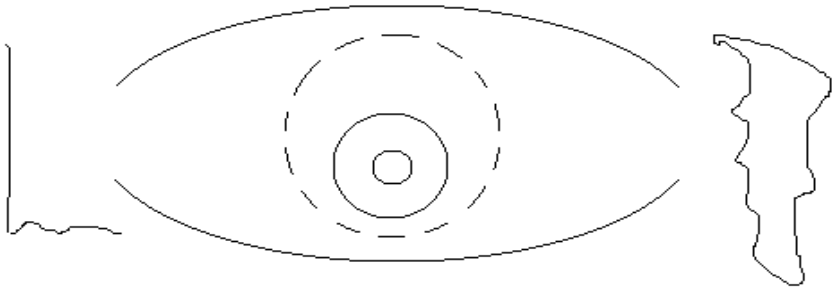
When it is decentered towards nose, then it is indicated as X $^{+}$



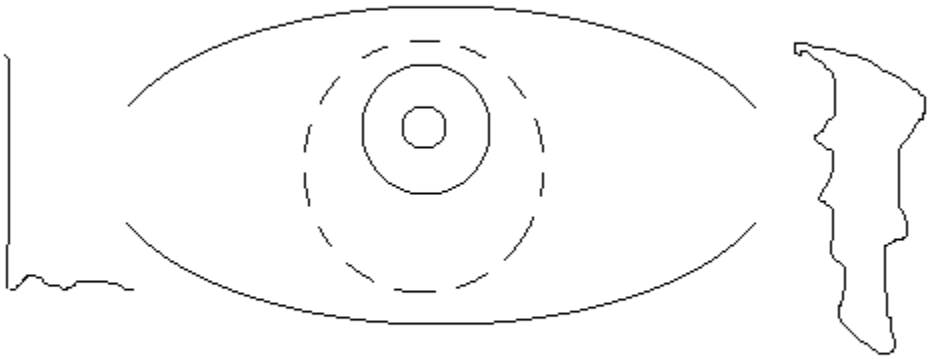
When it is decentered towards outside, then it is indicated as X^-



When it is decentered towards up side, then it is indicated as Y^+



When it is decentered towards down side, then it is indicated as Y^-



This [X^+, X^-, Y^+, Y^-] is a “CARTESIAN RULE”.

B. Complete corneal coverage

C. Adequate movement:

Generally, the normal movement is 0.2 mm – 1 mm

D. Comfort:

Patient is asked for comfort of Contact Lenses

E. Push Up Test:

This test is usually done to check flat fit/ tight fit / optimum fit.

In case of Soft Contact lens, if tight fit happens then, Back Optic Zone Radius is flat and Diameter will be unchanged. If loose fit happens then, Back Optic Zone Radius is steep and Diameter will be unchanged.

In case of high Back Vertex Power, bigger Horizontal Visible Iris Diameter is considered compared to normal range and Small Back Optic Zone Diameter is needed. The meaning of Back Vertex power is [Distance power + Near power]. Water content is a very essential parameter. When Water content increases, then Oxygen Permeability increases. When Water content increases, then Contact lens fragility is increased. When Water content increases, then Contact lens movement decreases.

In case of Dry Eye, Low water content Contact lens should be prescribed.

FDA CLASSIFICATION OF CONTACT LENS:

TO RECAPTULATE= 'LH' THIS TERM IS IMPORTANT

Group 1

Low water content, Non-Ionic

Group 2

High Water content, Non-Ionic

Group 3

Low water content, Ionic

Group 4

High Water content, Ionic

Always it is remembered that,

During Minus power, contact lens power will be less compared to spectacle power. During Plus power, contact lens power will be more compared to spectacle power.

In equal high Refractive power, the image size is different between Spectacle power and Contact lens power.

So, in that case, contact lens should be prescribed by following formula:

$F_{Cl} = (1- d X F_{sph})$

Where, d is Vertex distance

$F_{sph\ is}$ spectacle power.

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3. Mark J Mannis, Karla Zadnik, Cleusa Coral-Ghanem, Newton Kara-José (2006) Contact Lenses in Ophthalmic Practice.