

Contact Lenses: Core Skills

Fitting and Aftercare

Example Patient Cases

We have taken the clinical information of three patient cases and suggested some contact lenses that may be suitable for them. These will help to illustrate interpretation of prescriptions and corneal parameters. Further information on lens materials and designs (including toric) will be covered in future programmes.

General Guidance

- 0.05 mm difference between K-readings is equivalent to 0.25DC of corneal astigmatism
- Residual astigmatism = ocular astigmatism – corneal astigmatism
- Changing the fit of an RGP lens
 - For each increase in BZOD of 0.50mm increase BCOR/BOZR by 0.05mm to keep equivalent fit
 - When steepening fit by 0.05mm (i.e. decreasing BZOR) change power by 0.25D to keep equivalent power

Patient Case 1

Mary Duct

Age 36 years

New to contact lenses, wearing times may vary.
 Mary is a pathologist and wants to wear contact lenses for work, she is often on call.
 She suffers from mild hay fever.



Rx

R: +5.25/ -0.50 x 120 6/5 N5

L: +6.25/ -0.25 x 180 6/5 N5 BVD 10mm

Keratometry readings

R: 7.65 @ 110 7.65 @ 20

L: 7.70 @ 90 7.80 @ 180

Corneal astigmatism

R: Spherical

L: 0.50 DC with the rule

Lenticular astigmatism

R: 0.50 x 120

L: 0.25DC against the rule

HVID:

10.5 mm

Vertical palpebral aperture:

6mm

Pupil size:

max 5mm, min 2mm

Possible lens choices

Soft - daily silicone hydrogel

- Daily disposable due to lifestyle, hayfever and chemicals used at work
- Silicone hydrogel as high plus Rx will affect Dk/t and may require long WT

R: BC: 8.60 TD: 14.00 Power: +5.25

(Power - best vision sphere (+5.00DS) then BVD adjustment)

L: BC: 8.60 TD: 14.00 Power: +6.50

(Power - BVD adjustment)

RGP - fluorosilicone acrylate

R: BOZR: 7.65 TD: 9.00 Power: +5.25

L: BOZR: 7.80 TD: 9.00 Power: +6.50

Patient Case 2

Himali Shah

Age 39 years

Previous RGP wearer stopped wearing RGPs three years ago. She is a script writer, enjoys dancing and wants to wear contact lenses socially.



Rx

R: -4.75 / -3.00 x180 6/6 N5

L: -6.25 / -1.25 x 175 6/6 N5 BVD 12mm

Keratometry readings

R: 7.75 @ 90 8.25 @ 180

L: 7.70 @ 85 7.95 @ 175

Corneal astigmatism

R: 2.50 DC with the rule

L: 1.25 DC with the rule

Lenticular astigmatism

R: 0.50DC with the rule

L: spherical

HVID:

11.5mm

Vertical palpebral aperture:

8mm

Pupil size:

max 6mm, min 3mm

Possible lens choices

Soft - Monthly hydrogel toric lens

- Budget an issue and happy cleaning lenses
- Not working in a dirty or dusty environment
- Part time/social wear which is unlikely to be >12 hours

R: BC: 8.70 TD: 14.50 Power: -4.50/ -2.50 x 180

(Spec power – transposes to -4.75 x 90/ -7.75 x 180 BVD 12mm, BVD correction on eye is -4.50 x90/ -7.00 x 180)

L: BC: 8.70 TD: 14.50 Power: - 5.75/ - 1.25 x 175

(Spec power – transposes to -6.25 x 85/ -7.50 x 175 BVD 12mm, BVD correction on eye is -5.75 x 85/ -7.00 x 175)

RGP - Fluorosilicone acrylate (may not be comfortable if only occasional wearing times)

R: BOZR: 8.25 TD: 9.30 Power: -4.50

(Power takes BVD into account and astigmatism corrected by the tear lens under spherical RGP. Due to over 2.00D of corneal astigmatism a back surface toric lens may fit better and then the power would be adjusted accordingly – see later module).

L: BOZR: 7.95 TD: 9.30 Power: -5.75

(Power takes into account BVD and astigmatism corrected by the tear lens under spherical RGP. Fit and VA should be good with this amount of corneal astigmatism that matches the ocular astigmatism).

Patient Case 3

Jack Right

Age 26 years

New to contact lenses.

Jack is a student and likes rock climbing. His wearing times may vary, but he wants to wear contact lenses most of time as he dislikes specs because they feel heavy.



Rx

R: -9.00 6/5 N5
L: -8.25/ -2.00 x 90 6/5 N5 BVD 12mm

Keratometry readings

R: 8.00 @ 90 7.70 @ 180
L: 8.10 @ 90 7.90 @ 180

Corneal astigmatism

R: 1.50DC against the rule
L: 1.00DC against the rule

Lenticular astigmatism

R: 1.50 DC with the rule
L: 1.00DC against the rule

HVID: 12.5mm
Vertical palpebral aperture: 8mm
Pupil size: max 7mm, min 4mm

Possible lens choices

Soft - Daily silicone hydrogel

- daily disposable due to hygiene benefits
- silicone hydrogel due to possible wearing times and high minus power will reduce Dk/t peripherally
- Spherical lens in RE and toric lens in LE

R: BC: 8.70 TD: 14.20 Power: - 8.00

(Power - BVD adjustment)

L: BC: 8.60 TD: 14.50 Power: - 7.50/-1.50 x 90

(Spec power transposes to - 8.25 x 180/ - 10.25 x 90 BVD 12mm, BVD correction on eye is - 7.50 x90/ - 9.00 x 90)

RGP

R: not recommended, as:

- Spherical RGP lens will correct corneal astigmatism and result in residual astigmatism of approximately 1.50DC
- You could fit a Front Surface Toric RGP lens but stabilization may be tricky – see more in a later module

L: not ideal as corneal astigmatism does not match the ocular astigmatism:

- There would be 1.00DC residual astigmatism with a spherical RGP
- You could fit a bitoric RGP lens – see more in a later module

He may also get dust and grit in eye when rock climbing.