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No Conflict of interest

Most important inventions...



Bread...so ubiquitous...
we take for granted...had to be invented



So do contact lenses.....
an amazing invention



Amazing medical device has to be fit properly!!



Lens fitting can be accomplished in **Mi** mins

One-fit lenses ... achieve a high percentage of acceptable fits,

Sub-optimal fit or inappropriate lens selection



discomfort
potential physiological impact,
contact lens drop outs
complications....

Understanding how to assess and optimise lens fit remains key.....

Contact lens fitting assessment

Is the patient a good candidate??

Consider the likelihood that they would follow the rules...

- Do not fit cl:
 - Poor hygiene
 - History of abusing contact lens use
 - Lack of proper follow-up
 - External disease or infection

Personal habits (can he/she follow the contact lens usage rules? take a look at fingernails..) ...

Ask about medications (antihistamines, antipsychotics, acne medication, anticholinergic)? ...

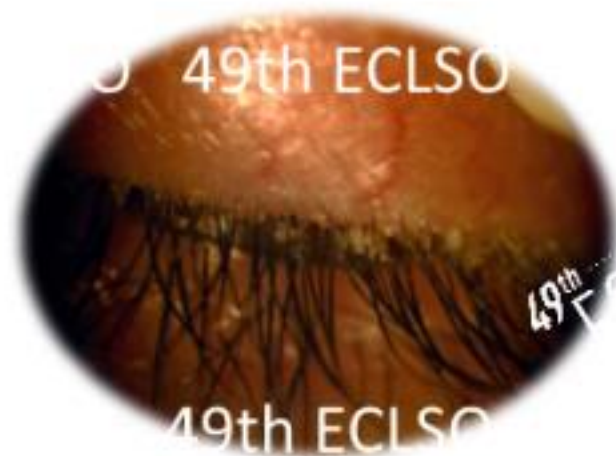
Activities: sports, outdoors, special events, shift workers

Allergy, systemic disease, Prosthopia

To protect your patient for **health issues...**
To protect yourself from **legal issues....**

th ECLSO
s 'Does

Routine Ophthalmic Examination



- ✓ Refraction
- ✓ Dry eyes: BUT, Ocular surface staining, Meibography..
- ✓ Blepharitis...Meibomitis...
- ✓ Allergies: Papillary reaction
- ✓ Corneal pathologies: Any corneal pathology..scar,neovascularisation ...must be recorded
- ✓ Topography.. ..both for the ocular surface and tear evaluation

Two types of fitting

αἰθέροβασιλεύς
ἠθάδα δὲ γῆρας

Horizontal visible iris
diameter (HVID)

Ks

Spectacle Px

Vertex Distance

ἑσθὺς ἀλλοθὺς ἰσοθὺς

***Everyone- every cornea unique**

*Patient experience **comfort** of the
lens and **pleasure of good vision**

*Assesments of each lens-
prevents logging longer time later due to
inappropriate fitting and complications

As manufacturers provide many samples, you can do a trial lens fitting

- ✓ no cost.
- ✓ many lenses on hand you can quickly convert to alternatives without losing time.....(busy clinic!!!)

Choosing the first trial lens



First trial lens

- **Diopter.....** as close to patients refraction

-immediate clear vision- motivation

-quick idea about fitting ..unstable vision: flat fit

-evaluate fitting characteristics..optimal fit

More than 400 Lst-vertex table

Power	0.25	0.50	0.75	1.00	1.25	1.50	1.75	2.00	2.25	2.50	2.75	3.00	3.25	3.50	3.75	4.00
0.00	-3.75	+4.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.25	-4.00	+4.50	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
0.50	-4.25	+4.75	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
0.75	-4.50	+5.00	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
1.00	-4.75	+5.25	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
1.25	-5.00	+5.50	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
1.50	-5.25	+5.75	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
1.75	-5.50	+6.00	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75
2.00	-5.75	+6.25	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
2.25	-6.00	+6.50	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25
2.50	-6.25	+6.75	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50
2.75	-6.50	+7.00	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.75
3.00	-6.75	+7.25	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
3.25	-7.00	+7.50	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25
3.50	-7.25	+7.75	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
3.75	-7.50	+8.00	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75
4.00	-7.75	+8.25	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00



- 4 diopters = 1/4 diopter
- 6 diopters = 1/2 diopter
- 8 diopters = 3/4 diopter
- 10 diopters = 1 diopter

- **Diameter** cover the cornea and 2-2.5mm larger than the corneal diameter
... in extend 1mm past the corneal circumference

Material

Patients needs and medical history .

First time user..
high modulus / more
formed
easier to handle

Intermittant user...
Daily disposable



Allergies
Daily disposable
Solution

Dry eyes:
Low water content
Silicon hydrogel
Surface wettable
Daily disposable
Solution

Artificial eye drops with
preservative

New materials & Technologies being developed
addressing many ocular surface problems...

Air Optix
Acuvue Vision Ultra
Precision 1 Moist

Base Curve (BC):

A critical component of choosing the right contact lens may be the most intimidating parameter to select for beginners...



BC Selection:

- 0.8mm to flattest K
- 1mm to average of Ks
- 4D flatter than average K
- Select lens nearest Base Curve from trial set or manufacturer's recommendation

K readings
are not the best predictor
for ideal BC selection...

BC + Lens Design

This reinforces that doing a trial lens fitting makes for a more efficient cl fitting.....

Cl manufacturers carried out extensive research to produce a 'best fit manufacturers guide'
Its quicker to use it

IF this first trial lens is not suitable

SELECT ANOTHER BC

OR

CONVERT TO ANOTHER MANUFACTURER

(even it has the same BC, edge design, can create different fit !!!)

OCT & Lens Stabilisation

Optometry
Journal of Opticology
Volume 2017, Article ID 201712, 12 pages
http://dx.doi.org/10.1080/00000000000000000



Research Article

Characterization of Soft Contact Lens Fitting Using Ultra-Long Scan Depth Optical Coherence Tomography

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Objective: To evaluate the variation and movement of soft contact lenses (SCLs) with the stability of the repeated measurements of the lens position and movement using ultra-long scan depth optical coherence tomography (UL-OCT).
Methods: A 1-day Biocompat[®] Contact[®] lens was tested on both eyes of 18 subjects (10 females) between 18 and 30 years of age. The position and micro-lens movement of the contact lens were measured at 5 min and 30 min after insertion. The measurement was repeated once at each checkpoint. Results: Good repeatability was found in the lens position and movement between the two repeated measurements at either checkpoint. The position of the lens movement was 0.097 ± 0.158 mm and 0.402 ± 0.225 mm at 5 min and decreased to 0.797 ± 0.385 mm and 0.203 ± 0.118 mm at 30 min after insertion for the right and left eyes, respectively ($P < 0.05$, *Wilcoxon*). The custom-built UL-OCT presented good repeatability of ocular axial and movement in 2-D lens lenses at 5 min and 30 min after insertion. Most of the lenses were centered temporal and inferior to the visual axis during the 5- and 30-min wearing period. The repeated measurements of the lens movement between 5 and 30 min and between 5 and 30 min were 0.001 mm and 0.001 mm, respectively.

- Although centration and lens movement is better after 30 mins there is only slight difference between measurements at 5 mins and 30 mins...

- Exemption may be first time user , 30 min or more walk around period..

provide opportunity to experience more real world beyond the consultation room...

Evaluation of the fit

Patient Subjective Response

- **Comfort**

Feeling the lens each time
they blink



flat fit

Feeling comfortable at first
gets uncomfortable with time



steep fit

- **Vision....**

Ultimate goal....

Fluctuating vision



flat fitting

Overcorrection if needed...

keep in mind the vertex table

Sph	Min	Max	Vertex	Sph	Sph
4.00	-3.75	+4.25	7.75	-7.00	11.5
4.25	-4.00	+4.50	8.00	-7.00	11.7
4.50	-4.25	+4.75	8.25	-7.50	12.0
4.75	-4.50	+5.00	8.50	-7.50	12.2

Biomicroscopy: JUDGE + RECORD

- ✓ Diameter of the lens -1mm larger than the circumference of the cornea—
- ✓ Centred on eye

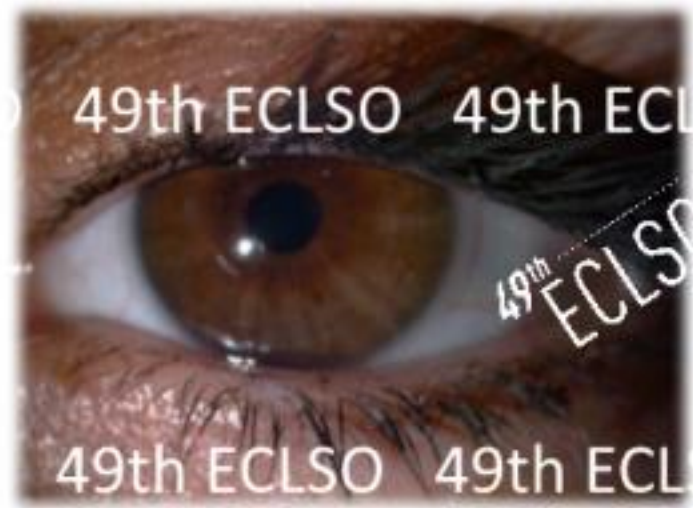
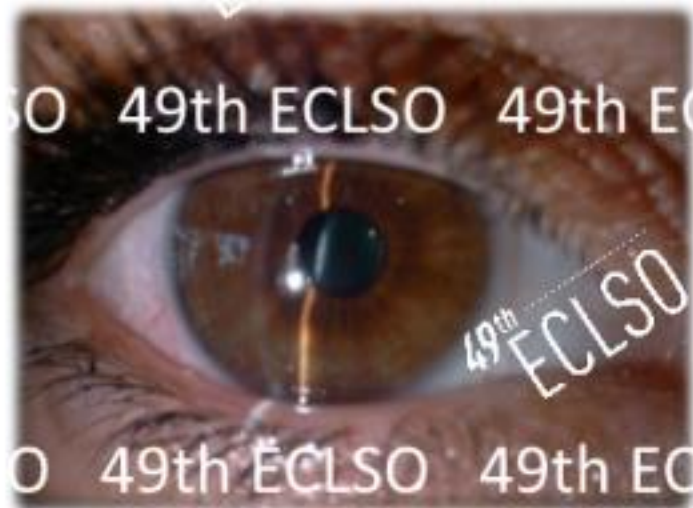


Lens edge lies nearly 1mm from the limbus

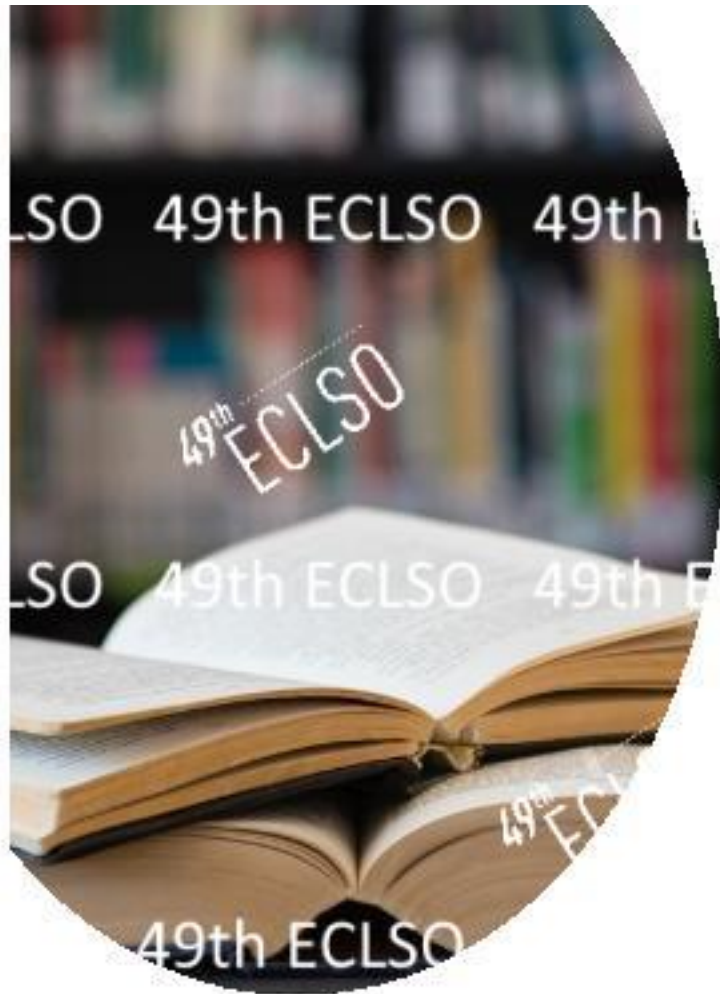


Lens lies on the inferior limbus
!!Lens induces mechanical trauma ..!!

- ✓ Full corneal coverage in all positions of the gaze
- ✓ Centralisation
- ✓ Movement ...primary gaze post blink & primary gaze after looking up & looking up
- ✓ Sufficient movement: Ideally lens should move between 0.2*- 0.4 mms.



Lens edge lies nearly 1mm from the limbus...if the lens moves halfway up to the limbus it means the movement is around 0.5mm.

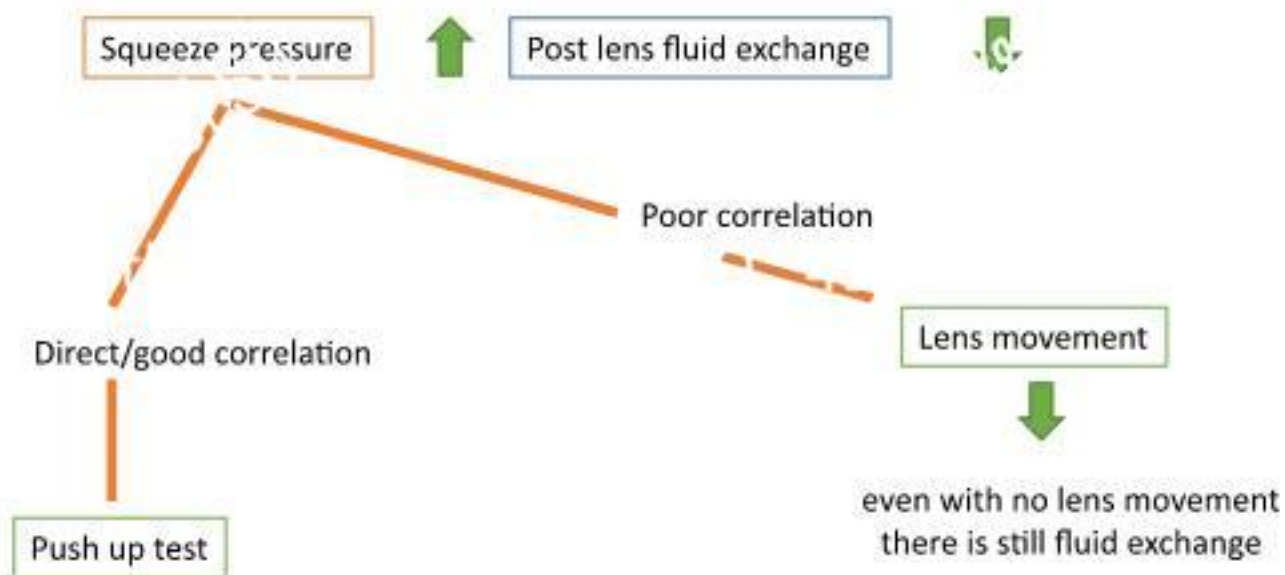


- 1mm of movement is recommended.
- To allow tear exchange for oxygenation and clearing debris under the lens in the tears.
- New tech lenses oxygenation ✓
- Peripheral designs of the lenses eases tear exchange allowing for less movement and clearing the debris.....

- Even you come across this information we must bare in mind that we do not need as much movement anymore.....



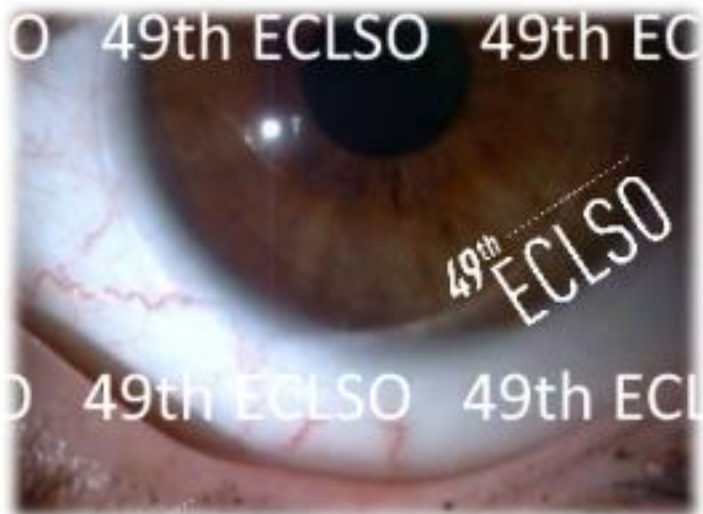
Postlens tear exchange O_2 - Debris -- Molecules, Cytokines....



Push up test may be a better way to evaluate tear exchange as well as lens movement.

Push-up Test

- ✓ Use the lower lid to push the cl edge up.
- ✓ Return smoothly and easily to its original position
- ✓ The lens moves too fast & even drops below the original position ...a flat fit
- ✓ The lens moves very little or no movement is seena steep fit

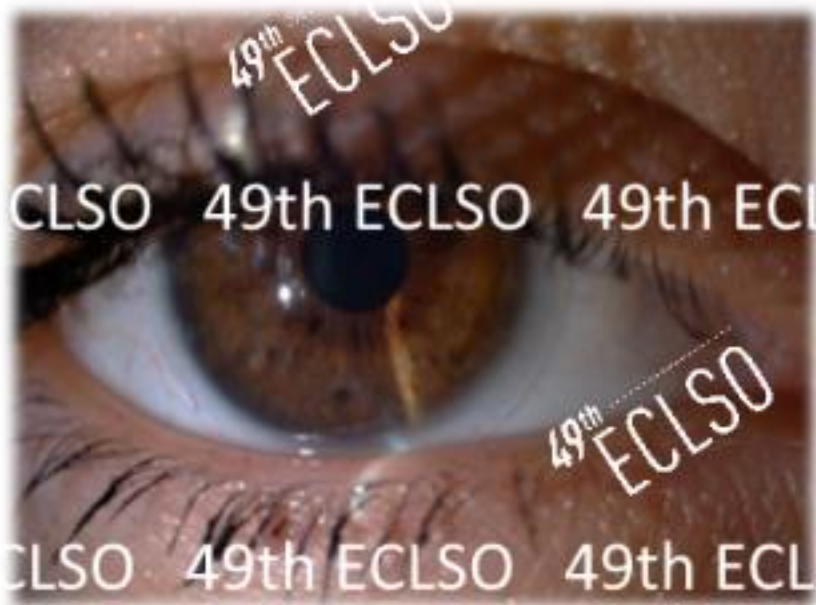




Movement is A LITTLE TOO MUCH !
Lens sags inferiorly with up-gaze



Lens moves too fast and even further
than the original place



Steep fit
(slightly)

Push-up steep

No Lens Movement Even With
The Push Up Test



Steep Fit
Try Another Lens

No Lens Movement Except in The Push Up Test
And Every Other Parameter is Good ...



Prescribe This Lens...

**THIS IS EXACTLY WHY WE INCLUDE THE PUSH UP TEST
IN OUR EVALUATION...**



Fitting Characteristics



Flat/loose
fit

- Excessive movement
- Poor centration and inferior lag
- Buckling of the lens edge
- Lens awareness
- Variable vision- more immediately post-blink

Optimum fit

- Well centered
- 0.2-0.4mm movement ,
smooth-easy push up test
- Comfort and vision stable

Steep/tight
fit

- No movement
- Conjunctival indentation and redness
- Low grade inflammation
- Comfortable at the beginning..but gets
uncomfortable later
- Vision improves immediately post-blink

Change BC, Design...

Johnson & Johnson	Acuvue Oasys 1 Day	Senofilcon A (silikon hidrojel)	8.5, 9.00 mm	14.3 mm	999.9	-0.50 -6.00 / -6.50 -12.00
Johnson & Johnson	Acuvue Oasys 1 Day	Senofilcon A (silikon hidrojel)	8.5, 9.00 mm	14.3 mm	999.9	+0.50 +6.00 / +6.50 +8.00
Johnson & Johnson	Acuvue Moist 1 Day	Etofilcon A (Hidrojel)	8.5, 9.00 mm	14.2 mm	999.9	-0.50 -6.00 / -6.50 -12.00
Johnson & Johnson	Acuvue Moist 1 Day	Etofilcon A (Hidrojel)	8.5, 9.00 mm	14.2 mm	999.9	+0.50 +6.00
Johnson & Johnson	Acuvue Oasys 1 Day for Astigmatism with Hydralux	Senofilcon A (silikon hidrojel)	8.5 mm	14.3 mm	999.9	0.00 -6.00 / -6.50 -12.00 Silindirik Güç: -0.75, -1.25, -1.75
Johnson & Johnson	Acuvue Oasys 1 Day for Astigmatism (with Hydralux)	Senofilcon A (silikon hidrojel)	8.5 mm	14.2 mm	999.9	+0.25 +4.00 Silindirik Güç: (-2.25)
Johnson & Johnson	Acuvue Oasys 1 Day for Astigmatism	Etofilcon A (Hidrojel)	8.5 mm	14.5 mm	999.99	0.00 -6.00 / -6.50 -8.00 Silindirik güç: (-0.75, -1.25, -1.75)
Johnson & Johnson	Acuvue Oasys 1 Day for Astigmatism	Etofilcon A (Hidrojel)	8.5 mm	14.5 mm	999.9	+0.25 +4.00 Silindirik Güç: (-2.25)
Johnson & Johnson	Acuvue Oasys	Senofilcon A (silikon hidrojel)	8.4 mm	14.0 mm	999.9	-0.50 -6.00 / -6.50 -12.00
Johnson & Johnson	Acuvue Oasys	Senofilcon A (silikon hidrojel)	8.4 mm	14.0 mm	999.9	+0.50 +6.00 / +6.50 +8.00
Johnson & Johnson	Acuvue Oasys with Transitions	Senofilcon A (silikon hidrojel)	8.4 mm	14.0 mm	100%	-0.25 -6.00 / -6.50 -12.00
Johnson & Johnson	Acuvue Oasys with Transitions	Senofilcon A (silikon hidrojel)	8.4 mm	14.0 mm	100%	+0.25 +6.00 / +6.00 +8.00
Johnson & Johnson	Acuvue Oasys for Astigmatism	Senofilcon A (silikon hidrojel)	8.5 mm	14.5 mm	999.9	0.00 -6.00 / -6.50 -12.00 Silindirik Güç: (-0.75, -1.25, -1.75)
Johnson & Johnson	Acuvue Oasys for Astigmatism	Senofilcon A (silikon hidrojel)	8.6 mm	14.5 mm	999.9	+0.25 +4.00 Silindirik Güç: (-2.25)
Alcon	Air Optix HydraGlyde	Lotrafilcon B	8.6 mm	14.2 mm	999.9	-0.50 -6.00 / -6.50 -12.00
Alcon	Air Optix HydraGlyde	Lotrafilcon B	8.6 mm	14.2 mm	999.9	+0.50 +6.00 / +6.50 +8.00
Alcon	Air Optix Plus HydraGlyde	Lotrafilcon B	8.6 mm	14.2 mm	999.9	-0.50 -6.00 / -6.50 -12.00 (0.25D aralıklarla), -6.50'den -10.000'ye (0.50D aralıklarla)
Alcon	Air Optix Plus HydraGlyde	Lotrafilcon B	8.6 mm	14.2 mm	999.9	+0.50 +6.00 / +6.50 +8.00 (0.25D aralıklarla), +6.00'den +8.000'ye (0.50D aralıklarla)
Alcon	Air Optix Plus HydraGlyde	Lotrafilcon B	8.6 mm	14.2 mm	999.9	Tonik Değerler: 4 Silindirik Değer (-0.75, -1.25, -1.75, -2.25)
Alcon	Air Optix Plus HydraGlyde	Lotrafilcon B	8.6 mm	14.2 mm	999.9	+6.00'den -6.000'ye (0.25D aralıklarla), -6.00'den -8.000'ye (0.50D aralıklarla)
Alcon	Air Optix Plus HydraGlyde	Lotrafilcon B	8.6 mm	14.2 mm	999.9	-0.50'den -6.000'ye (0.25D aralıklarla), -6.00'den -12.000'ye (0.50D aralıklarla)
Alcon	Air Optix Plus HydraGlyde	Verofilcon A	8.3 mm	14.2 mm	999.9	+0.50'den +6.000'ye (0.25D aralıklarla), +6.00'den +8.000'ye (0.50D aralıklarla)
Alcon	Air Optix Plus HydraGlyde	Verofilcon A	8.3 mm	14.2 mm	999.9	-0.50'den -6.000'ye (0.25D aralıklarla), -6.00'den +8.000'ye (0.50D aralıklarla)
Alcon	Dailies Aqua Comfort Plus	Nelfilcon A	8.7 mm	14.0 mm	999.9	-0.50'den -6.000'ye (0.25D aralıklarla), -6.50'den -15.000'ye (0.50D aralıklarla)
Alcon	Dailies Aqua Comfort Plus	Nelfilcon A	8.7 mm	14.0 mm	999.9	+15.000 ile -20.00 arası (+/- 6.000 düzeyinden sonra 0.500'lik basamaklarla)
Cooper Vision Biofinity Sphere	Comfilcon A	8.6 mm	14.5 mm	999.9	-10.000'den -10.700'ye (+/- 6.000 düzeyinden sonra 0.500'lik basamaklarla)	
Cooper Vision Biofinity Toric	Comfilcon A	8.7 mm	14.2 mm	999.9	-1.25 -6.000 (0.25D aralıklarla), -6.50 -12.000 (0.50D aralıklarla)	
Cooper Vision Biofinity Toric	Comfilcon A	8.7 mm	14.2 mm	999.9	+0.50 +6.000 (0.25D aralıklarla), +5.50 +8.000 (0.50D aralıklarla)	
Cooper Vision Biofinity Toric	Comfilcon A	8.7 mm	14.2 mm	999.9	-1.25 -6.000 (0.25D aralıklarla), -6.50 -12.000 (0.50D aralıklarla)	
Cooper Vision Biofinity Toric	Comfilcon A	8.7 mm	14.2 mm	999.9	+0.50 +6.000 (0.25D aralıklarla), +5.50 +8.000 (0.50D aralıklarla)	

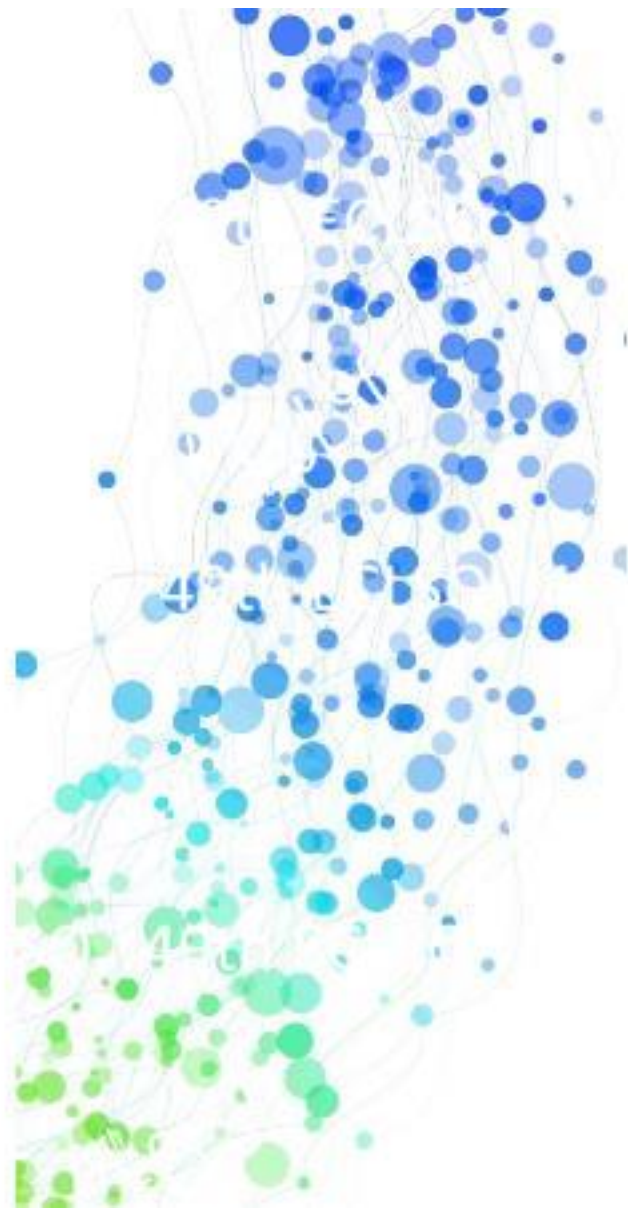
We Have Many Options For Lens Parameters, Materials And Designs.....

Technological Judging lens fit

All you need is.....

A trial lens, a chart and
a biomicroscopy....





✓ Comfort OK

✓ Vision OK

✓ Centration OK

✓ Movement- Push Up test OK

Prescription

KONTAKT LENS RECEPT

Ocular Health History:
 Distance Rx:
 History of Eye Disease:
 Age:
 Notes:

Pupils Size:
 Pupils Size Diff:
 Patient ID No:

645.000 601.002

Serial Eye (DC)		
Ten Day (DR)		
SPERKODDER		
TORIKODDER	Cyl:	Axis:
Notes: <input type="checkbox"/>		
Dr. No: 04/11/2018		
Per: Richard D		
Address: 24 Any Street, Phone, Sydney		

EYE	BASE CURVE	DIA	SPH	CYL	ADD	ADD
Right	14.0	8.4	+2.50	-0.25	145	+1.0
Left	14.0	8.4	+1.50	-0.25	145	+1.0

ID: 66 Expiry: 04/11/2018

- Expiry datemaintain the patients health and manage the schedule of your busy clinic
- No expiry date for your prescription the patient may continue to buy the same lenses indefinitely.
- Opportunity to detect and treat small changes, infiltrations, allergies and may be dry eyes before they get worse

Follow up can prevent dropouts

Training: Maintaining Healthy Lens Usage

- إذا كنت تشعر بالألم، احمرار العين، أو ضبابية في الرؤية، فإزالة العدسات فوراً والاتصال بطبيبك. اغسل العدسات والحقيبة بحلقتك الخاصة معك إلى موعدك.
- Video....access via **QR code-smart phones**
- Always wash your hands before handling
- Open the upper eyelid from the lashes to prevent ptosis
- Do not take shower, swim, go to sauna with your contacts on....
- Change contact lens solution do not topen...
- Wash your cl cases with cl solutions..do not use hot tap water.....

!! Warning !!
 if any redness, pain, blurring in vision immediately take off your contacts and get in contact with your doctor. take your contact lens and case, solution with you to your appointment.

49th ECLSO 49th ECLSO



TOA-CL+ J&J



Many problem solving guides.....

Procedure	Ideal Result	Variations from the norm	Possible Cause	Remedy
Comfort	Comfortable lens >9/10 None or minimal lens awareness	Continual discomfort Discomfort worse on blinking	Foreign body(FB) Thick lens Loose lens Edge stand-off	Remove and replace lens Fit with thinner lens Modify to tighten fit Change design
Vision	Clisp, clear, stable vision Precise over-refraction	Blurred vision Variable vision, after blinking Variable over-refraction	Incorrect power Loose lens	Over-refract Modify to tighten fit
Centration	Full corneal coverage (1mm to 3mm overlap) Vertical in all positions of gaze	Greater than 2mm conjunctival overlap Optical axis off the Corneal exposure at extremities of gaze	Lens too large Too small lens Poor centration Lens lens Thin lens	Reduce total diameter Increase total diameter Modify to tighten fit Modify to tighten fit Increase total diameter Try thinner lens
Edge alignment	Regular alignment to conjunctiva	Edge stand-off or buckling Conjunctival indentation	Loose lens Peripheral lens design Tight lens Peripheral lens design	Modify to tighten fit Try different design Loosen Try different design
Primary gaze movement	0.25mm to 0.50mm movement	Less than 0.25mm More than 0.50mm	Tight lens Hypotonic tears Loose lens Excessive lacrimation	Loose lens Try different material Modify to tighten fit Check for FB Allow longer settling
Push up test	Smooth recovery from push-up	Resistance to movement Excessive movement and erratic recovery	Tighten lens Hypotonic tears Loose lens Excessive lacrimation	Loosen lens Try different material Modify to tighten fit Check for FB Allow longer settling

Take Home Message

- Always do trial

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 በሌሎች ላይ ጥሩ ጥራት ለማግኘት...

- Patient History

- Good n...

ግልጽ የሆነውን ማሻሻል ለማድረግ ጥሩ ጥራት ለማግኘት ገደብ ሊገኝ ይችላል...
 ... ማሻሻል ለማድረግ...

- Diamet

- Only 10

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- First le

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- Always repeat Do's and Don'ts ለማሻሻል ጥሩ ጥራት ለማግኘት ገደብ ሊገኝ ይችላል...

- Follow up is essential for healthy and long term contact lens use...



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EASY AND OPTIMAL FIT
HAPPY END

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