EUROPEAN CONTACT LENS SOCIETY
OF OPHTHALMOLOGISTS (ECLSO)

# 51st ECLSO Congress

*Delegate program*

***The European Society of Contact Lenses and Ocular Surface***

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## *April 24th & 25th 2026*

Anantara Palais Hotel Conference Centre
Vienna, Austria

20 26

VIENNA

www.eclso2026.com

# WELCOME

### Registration Desk: Open 07:30 - 18:00

Louise Richards and the team will be available if you have any questions about the congress.

### WIFI access

Network = **ECLSO** Password = **ECLSO2026**

### Attendance Certificates

ECLSO awards **16** self-accredited points. An e-copy of your attendance certificate will be emailed to you shortly after the meeting.

### Meeting evaluation

Your feedback about the meeting is invaluable to ECLSO and the speakers presenting. Please complete your evaluation survey throughout the day @ www.eclso2026.com/evaluation.

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**View the program, e-posters and video posters online:** Scan the QR code or visit:

www.eclso2026.com

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## ECLSO 2026 Praesidium

EUROPEAN CONTACT LENS SOCIETY OF OPHTHALMOLOGISTS (ECLSO)

**President**

**Omur Ucakhan-Gunduz**, Ankara, Turkey

**Past President**

**Carina Koppen**, Antwerp, Belgium

**Vice-Presidents**

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**Katarina Jankovic Terzic**, Belgrade, Serbia

**Treasurer**

**Ursula Vogt**, London, UK

**Secretary General**

**Andrena McElvanney**, London, UK

**Honorary President**

**Réne Mély**, Valmont, France

**Vorstand**

**Cornelius Berzas**, Frankfurt, Germany

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SPONSORS

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## FRIDAY 24 APRIL 2026

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|---|---|
| *From 07:30* | *Registration* |
| 08:45 – 09:00 | President's welcome |
| 09:00 – 10:00 | ASTIGMATISM – FROM A-Z |
| 10:00 - 10:25 | Free paper session 1 |
| 10:25 - 10:30 | Sponsored video - CooperVision |
| 10:30 - 11:00 | Refreshment break and exhibition |
| 11:00 - 12:00 | A COMPREHENSIVE APPROACH TO KERATOCONUS |
| 12:00 – 12:30 | Free paper session 2 |
| 12:30 - 12:40 | FICK-KALT-MÜLLER Award |
| 12:40 – 13:00 | Sponsored Symposium - Hoya |
| 13:00 - 14:00 | Lunch and exhibition |
| 14:00 - 15:00 | CURRENT STATE-OF-THE-ART IN MYOPIA MANAGEMENT |
| 15:00 – 15:40 | Free paper session 3 |
| 15:40 - 16:10 | Refreshment break and exhibition |
| 16:10 - 16:55 | Free paper session 4 |

## SATURDAY 25 APRIL 2026

| | |
|---|---|
| *From 07:30* | *Registration* |
| 08:30 - 09:00 | ECLSO General Assembly<br>Open to all ECLSO members |
| 09:00 - 10:25 | HIGHLIGHTS FROM TFOS DEWS III |
| 10:25 – 10:45 | Sponsored Symposium – Johnson & Johnson |
| 10:45 - 11:15 | Refreshment break and exhibition |
| 11:15 - 12:40 | CONTROVERSIES IN CONTACT LENS PRACTICE<br>Association of Contact Lens Fitting Ophthalmologists |
| 12:40 – 13:00 | Sponsored Symposium - Alcon |
| 13:00 – 14:00 | Lunch and exhibition |
| 14:00 - 15:15 | INVITED YOUNG OPHTHALMOLOGISTS SESSION |
| 15:15 – 15:35 | KERSLEY LECTURE |
| 15:35 – 16:00 | Refreshment break and exhibition |
| 16:00 - 17:00 | NEW INSIGHTS IN SOFT CONTACT LENS TECHNOLOGY |
| 17:00 - 17:10 | Best free paper, free poster award |
| 17:10 – 17:15 | President's round-up and announcement of future meetings |

| FRIDAY 24 APRIL 2026 | | | |
|---|---|---|---|
| **08:45 – 09:00** | President's welcome | **Omur Ucakhan-Gunduz** | Ankara, Turkey |

## 09:00 – 10:00

### ASTIGMATISM – FROM A-Z

Moderators: **Cornelius Berzas**, Offenbach, Germany, **Gebtraud Schild-Burggasser**, Vienna, Austria

| | | |
|---|---|---|
| Rigid contact lenses for the correction of astigmatism | **Virginie Madariaga** | Toulouse, France |
| Soft contact lens for the correction of astigmatism | **Thomas Heinzle** | Innsbruck, Austria |
| Surgical correction of astigmatism | **Altan Ozcan** | Ankara, Turkey |
| *Panel Discussion* | *All session participants* | |

| **10:00 - 10:25** | **Free paper session 1** | | |
|---|---|---|---|
| | Moderators: **Cornelius Berzas**, Offenbach, Germany, **Gebtraud Schild-Burggasser**, Vienna, Austria | | |
| 10:00 – 10:01 | Introduction | | |
| 10:01 – 10:08 | **1:** Determinants of Optimal Contact Lens Modality in Astigmatism: A Structured Diagnostic-to-Fitting Algorithm | **Valentina Dimitrijevic Milovanovic** | Belgrade, Serbia |
| 10:08 – 10:15 | **2:** Awareness and Compliance with Contact Lens and Care Guidelines Among Soft Contact Lens Wearers | **Tuna Celik Buyuktepe** | Ankara, Turkey |
| 10:15 – 10:22 | **4:** Effects of Multifocal Contact Lenses on Anterior and Posterior Segment OCT Parameters | **Basak Turun Bozkurt** | Izmir, Turkey |
| 10:22 – 10:25 | Summary | | |

**Sponsored Video** **CooperVision** **10:25 – 10:30**

**10:30 - 11:00** Refreshment break and exhibition



MENU

## 11:00 – 12:00

### A COMPREHENSIVE APPROACH TO KERATOCONUS

Moderators: **Ursula Vogt**, London, UK, **Dean Saric**, Zagreb, Croatia, **Thomas Heinzle**, Innsbruck, Austria

| | | |
|---|---|---|
| Inflammation and dry eye in keratoconus | **Sihem Lazreg** | Blida, Algeria |
| Surgical approaches in keratoconus management | **David Touboul** | Bordeaux, France |
| Scleral lens correction for keratoconus | **Deborah Jacobs** | Cambridge, USA |
| *Panel Discussion* | *All session participants* | |

| **12:00 - 12:30** | **Free paper session 2** | | |
|---|---|---|---|
| | Moderators: **Ursula Vogt**, London, UK, **Dean Saric**, Zagreb, Croatia, **Thomas Heinzle**, Innsbruck, Austria | | |
| 12:00 – 12:02 | Introduction | | |
| 12:02 – 12:10 | **5:** How Do Scleral Contact Lenses Influence OCT Parameters in Keratoconus? | **Atilim Armagan Demirtas** | Izmir, Turkey |
| 12:10 – 12:17 | **6:** Evaluation of Visual Improvement with Scleral Lenses in Patients with Keratoconus: The Impact of Corneal Aberrations and Disease Severity on Visual Outcomes | **Mustafa Aksoy** | Bursa, Turkey |
| 12:17 – 12:24 | **15:** The Impact of Advanced Surface Moisturizing Technologies on Contact Lens Comfort in Digital Platform Users | **Tuna Celik Buyuktepe** | Ankara, Turkey |
| 12:24 – 12:30 | Summary | | |

## 12:30 – 12:40

**FICK-KALT-MÜLLER AWARD**
*Presented by the ECLSO President, Omur Ucakhan-Gunduz*

**Deborah Jacobs**
Cambridge, USA

**Sponsored Symposium** **HOYA**
**Raising the Bar in Myopia Control with MiYOSMART iQ**
Elevating the standard of care for pediatric patients

## 12:40 – 13:00

**13:00 - 14:00** Lunch break and exhibition

## 14:00 – 15:00

### CURRENT STATE-OF-THE-ART IN MYOPIA MANAGEMENT

Moderators: **Katarina Jankovic Terzic**, Belgrade, Serbia, **James S.W. Wolffsohn**, Birmingham, UK, **Thomas Heinzle**, Innsbruck, Austria

| | | |
|---|---|---|
| Update on Myopia Management | **James S.W. Wolffsohn** | Birmingham, UK |
| Soft contact lenses for myopia control | **Xu Cheng** | Jacksonville, USA |
| What to do when a myopic child steps through the door | **Omur Ucakhan-Gunduz** | Ankara, Turkey |
| *Panel Discussion* | *All session participants* | |

| **15:00 - 15:40** | **Free paper session 3** | | |
|---|---|---|---|
| | Moderators: **Katarina Jankovic Terzic**, Belgrade, Serbia, **James S.W. Wolffsohn**, Birmingham, UK, **Thomas Heinzle**, Innsbruck, Austria | | |
| 15:00 – 15:01 | Introduction | | |
| 15:01 – 15:08 | Invited. Acuvue Abiliti 1 Day Contact Lenses for Myopia Management | **Xu Cheng** | Jacksonville, USA |
| 15:08 – 15:15 | **9:** Short-Term Effects of Myopia Control Contact Lenses on Binocular Contrast Sensitivity and Pupillary Responses | **Merve Cetin** | Izmir, Turkey |
| 15:15 – 15:22 | **10:** The Effect of DIMS Lens Wear Duration on Myopia Progression in Children Engaged in Regular Sports: A 12-Month Observational Study | **Sevil Karaman Erdur** | Istanbul, Turkey |
| 15:22 – 15:29 | **11:** Functional Impact of a Non-Coaxial Ring-Focus Myopia Control Contact Lens on Macular Sensitivity | **Sevil Karaman Erdur** | Istanbul, Turkey |
| 15:29 – 15:36 | **12:** Comparison of Corneal Epithelial Thickness in Contact Lens Wearers and Non-Wearers | **Yahya Anil Atay** | Izmir, Turkey |
| 15:36 – 15:40 | Summary | | |

**15:40 - 16:10** Refreshment break and exhibition

| 16:10 - 16:55 | **Free paper session 4** | | |
|---|---|---|---|
| | Moderators: **Adriana Stănilă**, Sibiu, Romania, **Valentina Dimitrijevic Milovanovic**, Belgrade, Serbia, **Rets Skrickis**, Riga, Latvia | | |
| 16:10 – 16:11 | Introduction | | |
| 16:11 – 16:18 | **13:** Diurnal Changes in Tear Meniscus Parameters, Conjunctival Redness, and Subjective Discomfort in Young Adult Soft Contact Lens Wearers | **Emine Betül Akbaş Özyürek** | Istanbul, Turkey |
| 16:18 – 16:25 | **14:** Effects of Long-Term Contact Lens Use on Ocular Surface Morphology and Meibomian Gland Function | **Gizem Aygün** | Istanbul, Turkey |
| 16:25 – 16:32 | **16:** Corneal Confocal Microscopy Findings in Dry Eye Patients with Primary Sjögren's Syndrome | **Gamze Ozkan** | Istanbul, Turkey |
| 16:32 – 16:39 | **17:** Understanding Dry Eye Disease from the Patient Perspective: A Cross-National Evaluation of Burden, Care Pathways, and Unmet Needs | **Piotr A. Wozniak** | Warsaw, Poland |
| 16:39 – 16:46 | **18:** Effect of Contact Lens Wear and Screen Exposure on Meibomian Gland Integrity and Dry Eye Symptoms in Healthcare Workers | **Simge Baysa Sarıboyacı** | Zonguldak, Turkey |
| 16:46 – 16:53 | **19:** Comparison of Tear Break-Up Time in Patients Using Monthly Contact Lenses with Plasma Surface Coating and Water Gradient Technologies | **Saime Nur Solak** | Ankara, Turkey |
| 16:53 – 16:55 | Summary | | |

| | | | |
|---|---|---|---|
| **16:55 – 17:00** | Round up of the day | **Omur Ucakhan-Gunduz** | Ankara, Turkey |

EUROPEAN CONTACT LENS SOCIETY OF OPHTHALMOLOGISTS (ECLSO)

*See you tomorrow!*

## SATURDAY 25 APRIL 2026

| | | |
|---|---|---|
| **08:30 – 09:00** | General Assembly | **Open to all Members** |

## 09:00 – 10:25

### HIGHLIGHTS FROM TFOS DEWS III

Moderators: **Omur Ucakhan-Gunduz**, Ankara, Turkey & **Murat Dogru**, Tokyo, Japan

| | | |
|---|---|---|
| Definition, Classification & Diagnosis Of Dry Eye Disease | **James S.W. Wolffsohn** | Birmingham, UK |
| Nutrition & Dry Eye Disease | **Marc Labetoulle** | Paris, France |
| Digest | **Jelle Vehof** | London, UK |
| Management and Therapy of DE | **Murat Dogru** | Tokyo, Japan |
| *Panel Discussion* | *All session participants* | |

**Sponsored Symposium**
**An Integrated Innovation Platform in Contact Lens Technologies**
**JOHNSON & JOHNSON**

## 10:25 – 10:45

**10:45 - 11:15** Refreshment break and exhibition

## 11:15 – 12:40

### CONTROVERSIES IN CONTACT LENS PRACTICE
### Association of Contact Lens Fitting Ophthalmologists

Moderators: **Carina Koppen**, Antwerp, Belgium, **Zeynep Ozbek**, Izmir, Turkey, **Bernhard Hahsler**, Amstetten, Austria

11:15 - 11:35
**Contact Lenses are Better than Atropin in Myopia Control**

| **FOR:** | **AGAINST:** |
|---|---|
| **Gabriela Seher**<br>Vienna, Austria | **Gebtraud Schild-Burggasser**<br>Vienna, Austria |

11:35 - 11:55
**Contact Lens Wear in Young Children**

| **FOR:** | **AGAINST:** |
|---|---|
| **Daniel Schartmüller**<br>Vienna, Austria | **Bernhard Hahsler**<br>Amstetten, Austria |

11:55 - 12:15
**Early Optical Intervention (Scleral/ Specialty Contact Lenses) is Better than Cross-Linking (CXL) in Progressive Keratoconus**

| **FOR:** | **AGAINST:** |
|---|---|
| **Thomas Heinzle** | **Roman Lischke**<br>Innsbruck, Austria |

| **12:15 - 12:39** | **Case Reports from Austria** | | |
|---|---|---|---|
| 12:15 – 12:21 | Acanthamoeba keratitis in adolescents wearing or-thokeratology lenses | Gabriela Seher | Vienna, Austria |
| 12:21 – 12:27 | Corneal Tissue Addition Keratoplasty | Roman Lischke | Innsbruck, Austria |
| 12:27 - 12:33 | A Case with scleral contact lenses | Simon Jäkel | Kelheim, Germany |
| 12:33 – 12:39 | Unusual course of contact lens-associated keratitis – The fungus in the eye | Daniel Schartmüller | Vienna, Austria |

**Sponsored Symposium** — **ALCON** — **12:40 – 13:00**

**13:00 - 14:00** Lunch break and exhibition

## 14:00 – 15:15

### INVITED YOUNG OPHTHALMOLOGISTS SESSION

Moderators and Expert Panel: **Andrena McElvanney**, London, UK, **Katarina Jankovic Terzic**, Belgrade, Serbia, **Omur Ucakhan-Gunduz**, Ankara, Turkey

| | | |
|---|---|---|
| **Case 1:** An Alternative Treatment Modality for Persistent Epithelial Defect After Alkali Chemical Injury: Case Report | Gizem Atalay | Antwerp, Belgium |
| **Case 2:** A Challenging Case of Bilateral Acanthamoeba Keratitis | Ivan Pavlović | Zagreb, Croatia |
| **Case 3:** Corneal Manifestations in a Rare Skeletal Dysplasia: Case Series of Four Related Children | Tuna Celik-Buyuktepe | Ankara, Turkey |
| **Case 4:** A Case of Unilateral Recurrent Amyloid Depositions | Sayo Maeno | Osaka, Japan |
| **Case 5:** Severe Bilateral Mooren Ulcer | Vedrana Pejin presenting on behalf of Ana Dimitrijević | Belgrade, Serbia |

## 15:15 – 15:35

**KERSLEY LECTURE**

**From Clinical Intuition to Algorithmic Precision: The AI Revolution in Custom-Designed Rigid Lens Fitting**

**Juliette Knoeri**
Paris, France

*Introduced by the ECLSO General Secretary, Andrena McElvanney*

**15:35 - 16:00** Lunch break and exhibition

## 16:00 – 17:00

### NEW INSIGHTS IN SOFT CONTACT LENS TECHNOLOGY

Moderators: **Réne Mély**, Valmont, France, **Eef van der Worp**, Utrecht, The Netherlands, **Parwez Hossain**, Southampton, UK

| | | |
|---|---|---|
| Soft contact lenses - The 'Tipping Point' | **Eef van der Worp** | Utrecht, The Netherlands |
| Presbyopia management with contact lenses: the current situation | **Philip Morgan** | Manchester, UK |
| The contact lens–tear interface | **Erika Ponzini** | Milan, Italy |
| *Panel Discussion* | *All session participants* | |

## 17:00 – 17:10

**Best free paper, free poster award**
ECLSO Praesidium

| | | | |
|---|---|---|---|
| **17:10 – 17:15** | President's round-up and announcement of future meetings | **Omur Ucakhan-Gunduz** | Ankara, Turkey |



MENU

| No. | Abstract Title | First Name | Last Name | Location | Country |
|---|---|---|---|---|---|
| | **Free Papers** | | | | |
| **FP1** | Determinants of Optimal Contact Lens Modality in Astigmatism: A Structured Diagnostic-to-Fitting Algorithm | Valentina | Dimitrijevic Milovanovic | Belgrade | Serbia |
| **FP2** | Awareness and Compliance with Contact Lens and Care Guidelines Among Soft Contact Lens Wearers | Tuna | Celik Buyuktepe | Ankara | Turkey |
| **FP3** | Withdrawn | | | | |
| **FP4** | Effects of Multifocal Contact Lenses on Anterior and Posterior Segment OCT Parameters | Basak | Turun Bozkurt | Izmir | Turkey |
| **FP5** | How Do Scleral Contact Lenses Influence OCT Parameters in Keratoconus? | Demirtas | Atilim Armagan | Izmir | Turkey |
| **FP6** | Evaluation of Visual Improvement with Scleral Lenses in Patients with Keratoconus: The Impact of Corneal Aberrations and Disease Severity on Visual Outcomes | Aksoy | Mustafa | Bursa | Turkey |
| **FP7** | Outcomes of Contact/Scleral Lenses in Keratoconus: A Retrospective Cohort Study—Poster only | Zemfira | Mehraliyeva | Ankara | Turkey |
| **FP8** | Withdrawn | | | | |
| **FP9** | Short-Term Effects of Myopia Control Contact Lenses on Binocular Contrast Sensitivity and Pupillary Responses | Merve | Cetin | Izmir | Turkey |
| **FP10** | The Effect of DIMS Lens Wear Duration on Myopia Progression in Children Engaged in Regular Sports: A 12-Month Observational Study | Sevil | Karaman Erdur | Istanbul | Turkey |
| **FP11** | Functional Impact of a Non-Coaxial Ring-Focus Myopia Control Contact Lens on Macular Sensitivity | Sevil | Karaman Erdur | Istanbul | Turkey |
| **FP12** | Comparison of Corneal Epithelial Thickness in Contact Lens Wearers and Non-Wearers | Yahya Anil | Atay | Izmir | Turkey |
| **FP13** | Diurnal Changes in Tear Meniscus Parameters, Conjunctival Redness, and Subjective Discomfort in Young Adult Soft Contact Lens Wearers | Emine Betül | Akbaş Özyürek | Istanbul | Turkey |
| **FP14** | Effects of Long-Term Contact Lens Use on Ocular Surface Morphology and Meibomian Gland Function | Gizem | Aygün | Istanbul | Turkey |
| **FP15** | The Impact of Advanced Surface Moisturizing Technologies on Contact Lens Comfort in Digital Platform Users | Tuna | Celik Buyuktepe | Trabzon | Turkey |
| **FP16** | Corneal Confocal Microscopy Findings in Dry Eye Patients with Primary Sjögren's Syndrome | Gamze | Ozkan | Istanbul | Turkey |
| **FP17** | Understanding Dry Eye Disease from the Patient Perspective: A Cross-National Evaluation of Burden, Care Pathways, and Unmet Needs | Piotr A. | Wozniak | Warsaw | Poland |
| **FP18** | Effect of Contact Lens Wear and Screen Exposure on Meibomian Gland Integrity and Dry Eye Symptoms in Healthcare Workers | Simge | Baysa Sarıboyacı | Zonguldak | Turkey |
| **FP19** | Comparison of Tear Break-Up Time in Patients Using Monthly Contact Lenses with Plasma Surface Coating and Water Gradient Technologies | Saime | Nur Solak | Ankara | Turkey |

| No. | Abstract Title | First Name | Last Name | Location | Country |
|---|---|---|---|---|---|
| | **e-POSTERS** | | | | |
| 1 | Withdrawn | | | | |
| 2 | Withdrawn | | | | |
| 3 | Withdrawn | | | | |
| 4 | How can we Protect the Ocular Surface? | Adriana | Stanila | Sibiu | Romania |
| 5 | A Rare Case of Pseudoexfoliative Material Deposition on a Modern Trifocal Intraocular Lens | Ahmed | Alahmad | Luton | UK |
| 6 | Anterior Segment Biometric and Corneal Endothelial Alterations in Keratoconus: A Comparative Study | Ali Suha | Uyanik | Rize | Turkey |
| 7 | Transferring Optical Designs Across Lens Materials: A Randomized, Double-Masked, Two-Way Crossover Clinical Comparison of Samfilcon A and Kalifilcon A Multifocal Contact Lenses | Ömür | Uçakhan | Ankara | Turkey |
| 8 | Presbyopia as a Dropout Risk: Clinical Strategies to Sustain Contact Lens Wear | Ana | Aleksic | Belgrade | Serbia |
| 9 | Visual Rehabilitation Aimed Scleral Contact Lenses: Clinical Experience in a Tertiary-Eye Center | Anil | Kaplan | Izmir | Turkey |
| 10 | Management of Acanthamoeba Keratitis During Pregnancy: A Case Report | Anil | Kaplan | Izmir | Turkey |
| 11 | Scleral Contact Lens Application in a Pseudophakic Patient with Traumatic Corneal Scar and Visual Impairment | Atilim Armagan | Demirtas | Izmir | Turkey |
| 12 | Short-Term Effects of Swimming Goggle Use on Corneal Tomographic Parameters in Patients with Keratoconus | Atilim Armagan | Demirtas | Izmir | Turkey |
| 13 | Non-Surgical Visual Rehabilitation Using Mini Scleral Contact Lenses in Corneal Scarring Secondary to Trauma or Infection | Atilim Armagan | Demirtas | Izmir | Turkey |
| 14 | Differentiating Contact Lens Peripheral Ulcer from Microbial Keratitis: Clinical Criteria and Management in Three Cases | Bunyamin | Can | Rize | Turkey |
| 15 | The Importance of Daily Disposable soft Contact Lenses in Piggyback lens use in Keratoconus | Basak | Saracoglu Yilmaz | Istanbul | Turkey |
| 16 | Severe Ocular Surface Toxicity Following Prolonged Povidone-Iodine Exposure During Complicated Cataract Surgery | Bunyamin | Can | Rize | Rize |
| 17 | NSAID-Induced Corneal Melting Following Uncomplicated Cataract Surgery in a Diabetic Patient: A Case Report | Bunyamin | Can | Rize | Rize |
| 18 | Unilateral Hypermetropic Amblyopia in Triplets: A Rare Case of Genetic Lateralization | Bunyamin | Can | Rize | Rize |
| 19 | Withdrawn | | | | |
| 20 | Ocular Surface Changes After Repeated Intravitreal Anti-VEGF Injections in nAMD | Burcu | Cengiz | Zonguldak | Turkey |
| 21 | Withdrawn | | | | |
| 22 | A Dramatic Consequence of Improper Contact Lens Wear: Ocular Hypoxia | Cevher Furkan | Solak | Ankara | Turkey |
| 23 | Comparison of two Different Blue Light-Filtering Contact Lenses' Effects on Color Discrimination and Contrast Sensitivity | Ceylin | Etiz | Ankara | Turkey |
| 24 | HydraGlyde™ Peroxide System for Orthokeratology Lens Care: Our Experience | Daryna | Kozeruk | Vinnytsya | Ukraine |

| No. | Abstract Title | First Name | Last Name | Location | Country |
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| | **e-POSTERS** | | | | |
| 25 | Long-Term Efficacy of Standard Versus Accelerated Corneal Cross-Linking | Dean | Saric | Zagreb | Croatia |
| 26 | Withdrawn | | | | |
| 27 | Visual Rehabilitation Options According to Disease Stage in Patients with Keratoconus and Comparison of Clinical Parameters | Ezgi | Yavuz Onal | Izmir | Turkey |
| 28 | Withdrawn | | | | |
| 29 | Withdrawn | | | | |
| 30 | Withdrawn | | | | |
| 31 | Tear MMP-9 Changes After Corneal Cross-Linking in Patients with Keratoconus | Gamze | Ozkan | Istanbul | Turkey |
| 32 | Visual Function and Optical Quality During Scleral Lens Wear in Eyes with Keratoconus | Gamze | Ozkan | Istanbul | Turkey |
| 33 | Clinical Outcomes of Sub400 Protocol and Contact Lens–Assisted Corneal Cross-Linking in Keratoconus with Thin Corneas | Gamze | Ozkan | Istanbul | Turkey |
| 34 | Meibomian Gland Alterations in Keratoconus Patients After Corneal Cross-Linking | Gamze | Ozkan | Istanbul | Turkey |
| 35 | Ocular Surface's Oriented Management of Persistent Epithelial Defect After Penetrating Keratoplasty in Steven's Johnson Syndrome | Gizem | Atalay Tulumen | Antwerp | Belgium |
| 36 | Impact of TNF inhibitors and Biologic Therapy on Mortality rate in Patients with Rheumatoid-Arthritis-Associated Corneal Ulceration (RACU) | Humza | Hossain | Southampton | UK |
| 37 | Withdrawn | | | | |
| 38 | Withdrawn | | | | |
| 39 | Withdrawn | | | | |
| 40 | Ocular Surface Disease Incidence in Diabetic and Glaucoma Patients as Potential Contact Lens Users | Marija | Radenkovic | Nis | Serbia |
| 41 | Withdrawn | | | | |
| 42 | Withdrawn | | | | |
| 43 | Levels of Inflammatory Proteins in the Tear Film in Patients with Keratoconus and Dry Eye | Mihaela Monica | Constantin | Bucharest | Romania |
| 44 | Efficacy of Scleral Contact Lenses in Keratoconus: Clinical Parameters and Visual Outcomes | Miray | Karataş Seven | Izmir | Turkey |

| No. | Abstract Title | First Name | Last Name | Location | Country |
|---|---|---|---|---|---|
| | **e-POSTERS** | | | | |
| 45 | Exceptional Outcome with Scleral Lenses in a Challenging Refractive Keratotomy Case | Mukaddes Damla | Ciftci | Ankara | Turkey |
| 46 | Novel anti-glaucoma eye drops improving ocular surface in a mouse model | Murat | Degru | Ichikawa | Japan |
| 47 | Therapeutic Scleral Lens for Severe Neurotrophic Keratopathy and Persistent Dry Eye Following Complicated Cataract Surgery | Nurullah | Coskuner | Rize | Turkey |
| 48 | Beyond Traditional Methods: Solving Soft Contact Lens Intolerance in a Demanding Patient through Orthokeratology and Precision Maintenance | Atilim Armagan | Demirtaş Armağan | Izmir | Turkey |
| 49 | Withdrawn | | | | |
| 50 | Withdrawn | | | | |
| 51 | Impact of Dry Eye Disease on Keratometric Measurements and Intraocular Lens Power Calculations | Pinar | Akkale | Ankara | Turkey |
| 52 | Early Corneal Healing Responses Following Corneal Collagen Crosslinking in Keratoconic Eyes with Comorbidities | Pinar | Akkale | Ankara | Turkey |
| 53 | Effect Of Orthokeratology Lens On Myopia Control in Children With Anisometropia | Seung Hyuck | Lee | Seoul | Korea |
| 54 | Six-Month Safety and Clinical Performance of Abiliti Myopia Control Soft Contact Lenses in Children: A Real-World Study | Sevil | Karaman Erdur | Istanbul | Turkey |
| 55 | Acute Ocular Surface and Blink Behaviour Effects of a Non-Coaxial Ring-Focus Myopia Control Soft Contact Lens in Children | Simla | Şahin | Istanbul | Turkey |
| 56 | Withdrawn | | | | |
| 57 | Withdrawn | | | | |
| 58 | Experiences with two Different Scleral Contact Lenses | Sinem | Kaya | Sanliurfa | Turkey |
| 59 | Comparative Evaluation of Corneal Stromal Demarcation Line Following Accelerated Corneal Collagen Crosslinking Protocols Using Different Riboflavin Formulations and Soaking Durations | Tuna | Celik Buyuktepe | Ankara | Turkey |
| 60 | Resistant Pseudomonas Aeruginosa Keratitis in a Contact Lens Wearer: A Case Report | Vedrana | Pejin | Belgrade | Serbia |
| 61 | Primary Mucinous Carcinoma Of The Eyelid Mimicking Recurrent Chalazion: A Diagnostic Challenge | Yaren | Guven | Rize | Turkey |
| 62 | Endocrine Mucin-Producing Sweat Gland Carcinoma of the Eyelid with Progression to Invasive Mucinous Adenocarcinoma: A Rare Entity with Breast Carcinoma Analogy | Yaren | Guven | Rize | Turkey |
| 63 | Microbial Keratitis in Contact Lens Wearers: Three Different Etiologies and Strategies for Safe Return to Lens Wear | Yaren | Guven | Rize | Turkey |
| 64 | Predictors of Postoperative Dry Eye Disease in Refractive Surgery Patients | Zeynep | Kirisci | Ankara | Turkey |
| 65 | Contact Lens Practice in Adolescents | Zeynep | Ozbek | Izmir | Turkey |

## FP1 Determinants of Optimal Contact Lens Modality in Astigmatism: A Structured Diagnostic-to-Fitting Algorithm

**Valentina Dimitrijevic Milovanovic**

Aleksic A.

*Clinic for Eye Diseases, University Clinical Centre of Serbia, Belgrade, Serbia.*

**Summary:** Astigmatism correction requires precise assessment of refractive and corneal toricity to optimize lens selection and achieve stable visual outcomes. Variability in the interaction between corneal and internal astigmatic components significantly affects optical quality and lens performance. In this model, a structured diagnostic approach incorporating autorefractive cylinder vectors, keratometry, and Scheimpflug-based tomography was applied to stratify astigmatism by magnitude, origin, axis, and regularity, and to refine thresholds guiding clinical decisions.

Spherical equivalent correction was acceptable only for low-magnitude, regular, with-the-rule astigmatism with reproducible axis and preserved visual acuity. Clinically significant astigmatism required targeted correction: spherical RGP lenses effectively neutralized corneal toricity below 2.50 D through tear lens compensation, while higher corneal toricity benefited from front- or back-toric RGP geometries to improve alignment, reduce residual astigmatism, and enhance rotational stability. Internal astigmatism exceeding 1.00 D combined with corneal toricity favored bitoric RGP lenses due to optimized power distribution. Mild mixed or predominantly internal astigmatism often tolerated soft toric lenses, though prism ballast, dynamic, or hybrid stabilization systems required careful adjustment to maintain axis stability. Overall, a diagnostic- to-fitting algorithm integrating corneal morphology, vector analysis, and refractive thresholds provides a structured framework for selecting spherical equivalents, soft toric, or RGP lenses.

When soft toric lenses demonstrate rotational instability, toric or bitoric RGP designs should be prioritized to ensure consistent optical quality and reliable visual performance across a range of astigmatic profiles.

## FP2 Awareness and Compliance with Contact Lens and Care Guidelines Among Soft Contact Lens Wearers

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**Summary:** This study aimed to evaluate awareness and compliance with lens care guidelines among soft contact lens (CL) wearers using an online survey. One hundred forty-four wearers responded. The mean age of participants was 21.2±5.4 (range, 14–49) years. Most participants (81.0%) had been wearing CLs for more than a year, and almost all CLs (89.6%) were prescribed by ophthalmologists.

Forty-four percent wore their lenses for more than 10 hours daily. Seventy-five percent wore monthly-replacement CLs, 5% wore biweekly-replacement CLs, and 19% wore daily-disposable CLs. Eighty-nine percent followed the recommended replacement schedule, whereas 11% did not. Risky behaviours were common: 21% swam with lenses, 27% showered with them, and 15% slept in them. Multipurpose solutions were used by 91% of users to clean their lenses and by 72% to clean their lens cases, while 10% reported applying CL solution directly to their eyes. Adults more often used multipurpose solutions for lens and case cleaning and demonstrated better hand hygiene. Compared with adults (≥18 years), swimming and showering on CLs were more frequent among adolescents (<18 years). Notably, non-hygienic habits were observed in 40% of wearers who considered themselves “well” or “very well”-informed about CL care (90% of adolescents, 89% of adults),

These findings suggest that ophthalmologists need to repeatedly emphasize the importance of lens hygiene and replacement routines to all patients, regardless of how experienced or informed those patients think they are. Particular attention is required in adolescent wearers to minimize preventable complications and enhance long-term ocular health.

**FP3** Withdrawn

**FP4** **Effects of Multifocal Contact Lenses on Anterior and Posterior Segment OCT Parameters**

**Basak Turun Bozkurt**

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**Purpose:** This study aimed to evaluate the influence of multifocal contact lens (MFCL) wear on optical coherence tomography (OCT) parameters, including central corneal thickness (CCT), ganglion cell–inner plexiform layer (GCIPL) thickness, peripapillary retinal nerve fiber layer (RNFL) thickness, and scan quality index (QI).

**Methods:** A cross-sectional analysis was conducted on 80 eyes of 40 female presbyopic participants (mean age 52.4±6.1 years), all fitted with Acuvue Oasys Multifocal lenses. OCT imaging of the anterior segment, ganglion cell complex, and optic disc was performed with and without MFCLs. Evaluated parameters included CCT, average and minimum GCIPL thickness, average RNFL thickness, and scan QI, with only scans meeting a QI ≥4 included. Associations between OCT parameters, clinical variables (age, spherical equivalent, keratometry), and MFCL characteristics (spherical power and addition) were analyzed using linear mixed models and correlation analyses.

**Results:** MFCL wear was associated with a small but significant increase in CCT (+1.9 µm, $p<0.001$), while anterior segment scan quality remained unchanged. In contrast, posterior segment scan quality significantly decreased in both ganglion and disc scans, accompanied by a reduction in average RNFL thickness (–3.19 µm, $p<0.001$). GCIPL thickness showed significant correlations with spherical equivalent and MFCL spherical power, whereas addition levels were not associated with any OCT parameters.

**Conclusion:** These findings suggest that MFCL wear can adversely affect posterior segment OCT image quality and RNFL measurements, while anterior segment metrics remain stable. OCT assessments in presbyopic patients, particularly for glaucoma evaluation, should therefore be interpreted cautiously, and baseline measurements without contact lenses may be preferable.

## FP5 How Do Scleral Contact Lenses Influence OCT Parameters in Keratoconus?

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**Background:** This study aimed to evaluate the influence of scleral contact lens (SCL) wear on optical coherence tomography (OCT) scan quality and structural measurements in patients with keratoconus (KC).

**Methods:** This retrospective observational study included 28 eyes of 28 KC patients. All participants underwent a comprehensive ophthalmologic evaluation, including corneal topography and spectral-domain OCT (Optopol REVO 60). Two OCT measurement sessions were performed on the same day: one without SCLs and one after a 30–75 min adaptation period with Mini Misa® SCLs. Recorded parameters included corneal and epithelial thicknesses, ganglion cell–inner plexiform layer (GCIPL) thickness, retinal nerve fiber layer (RNFL) thickness, and device-reported quality index (QI). Correlation analyses between topographic values, age, and OCT parameters were also conducted.

**Results:** The mean age of participants was 32.96±13.72 years. SCL wear significantly decreased anterior segment QI (6.76±1.73 vs. 5.57±2.34, p=0.019) but improved posterior segment QI in both the ganglion (2.52±1.03 vs. 5.76±2.17, p<0.001) and disc (2.82±0.94 vs. 4.39±1.87, p<0.001) modules. Central corneal thickness remained stable, while central epithelial thickness decreased slightly (50.53±6.66 µm vs. 47.59±7.20 µm, p=0.007). RNFL and GCIPL thicknesses showed no significant changes, except for minor sectoral variations. Steeper keratometry values correlated with lower QI in both conditions.

**Conclusions:** SCLs enhanced posterior OCT scan quality while reducing anterior segment image clarity. These findings suggest that SCLs not only provide visual rehabilitation but also facilitate more reliable posterior segment imaging in KC patients, despite mild interference with anterior segment OCT metrics. Further prospective studies are warranted to validate these results.

## FP6 Evaluation of Visual Improvement with Scleral Lenses in Patients with Keratoconus: The Impact of Corneal Aberrations and Disease Severity on Visual Outcomes

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**Purpose:** To evaluate the relationship between the improvement in visual acuity (VA) after scleral lens (SL) fitting in patients with keratoconus (KC) and KC stage, higher-order aberrations (HOAs), keratometric values, thinnest corneal thickness (TCT), and scleral lens fitting parameters.

**Methods:** A total of 37 eyes of 25 patients diagnosed with KC were included. Best-corrected visual acuity (BCVA), keratometric values obtained by corneal topography, TCT, KC stage, and HOAs were recorded before and after SL fitting. Scleral lenses were individually customized, and fitting parameters were evaluated; landing zone adjustments were performed when necessary. Patient comfort was assessed after fitting.

**Results:** The mean age of the participants was 25±10.25 years. Mean BCVA significantly improved after SL fitting compared to baseline (pre-fitting: 0.82±0.44 logMAR; post-fitting: 0.16±0.09 logMAR; p<0.001), with a mean VA improvement of −0.66±0.37 logMAR. A positive correlation was observed between pre- and post-fitting BCVA (r=0.541; p<0.001). A negative correlation was found between TCT and BCVA with SL (r=−0.216; p<0.001). Kmax showed a negative correlation with VA improvement (r=−0.537; p<0.001). KC stage was positively correlated with BCVA achieved with SL (r=0.427; p<0.001). Coma and trefoil aberrations measured within the 3-mm optical zone demonstrated significant negative correlations with VA improvement (r=−0.491 and r=−0.446, respectively; p<0.001).

**Conclusion:** Scleral lenses significantly improve visual acuity and visual quality in patients with keratoconus, primarily through the reduction of higher-order aberrations. Corneal structural parameters and disease stage are important determinants of scleral lens success. SLs represent a powerful visual rehabilitation option, particularly in advanced KC, with the potential to delay surgical intervention.

## FP7 Outcomes of Contact/Scleral Lenses in Keratoconus: A Retrospective Cohort Study (poster-only)

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**Summary:** This retrospective study evaluated files of 506 patients (913 eyes) with keratoconus who were fitted with contact/scleral lenses between 2010 and 2025. Uncorrected distance visual acuity (UDVA), corrected distance visual acuity (CDVA), and lens–corrected visual acuity (LCVA) were evaluated at baseline and follow-up examinations. Keratoconus stage and clinical findings were recorded.4.7% of eyes were classified as stage 1, 24.9% as stage 2, 14.8% as stage 3, and 55.6% as stage 4 disease. The mean number of trial lenses used at initial fit was 1.6±0.8 and increased significantly with advancing keratoconus stage (p=0.0016). 389 (42.6%) eyes were fit with rigid gas-permeable (RGP), 377 (41.2% ) with soft (SCL), 90 (9.8%) with hybrid (HCL), and 57 (6.2%) with scleral lenses (SL). Trial lens type differed significantly by keratoconus stage (p<0.001). At baseline, UDVA and CDVA were significantly higher in eyes fitted with SCL and lower in eyes fitted with SL (p<0.001). LCVA remained stable during the follow-up (p=0.174) and was superior to CDVA at all follow-up examinations (p<0.001). No significant changes were observed in keratometric findings during the follow-up period (p=0.261). During the follow-up, lens parameters were modified in 8.3% of eyes, lens type was changed in 10.3% of eyes, and 8.7% of patients discontinued contact lens use. Contact/scleral lenses significantly improve visual acuity in keratoconus eyes, irrespective of the stage. Appropriate lens selection, patient compliance, and regular follow-up are essential for safety and sustained visual outcomes.

## FP8 Withdrawn

## FP9 Short-Term Effects of Myopia Control Contact Lenses on Binocular Contrast Sensitivity and Pupillary Responses

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**Introduction:** To compare the short-term effects of a myopia control contact lens (Abiliti) and a daily single-vision contact lens (Acuvue Oasys 1-Day) on contrast sensitivity in myopic individuals aged 18–20 years, and to evaluate pupillary responses and their relationship with contrast sensitivity.

**Methods:** In this prospective repeated-measures study, 40 eyes of 20 myopic participants were evaluated using the Metrovision MonPack system. Binocular static and dynamic contrast sensitivity were measured at spatial frequencies of 0.55, 1.2, 2.4, 3.6, 7.6, and 15.1 cycles per degree (cpd) under two contact lens conditions, while pupillometry was assessed separately under the same conditions, including pupil diameters under photopic, mesopic, and scotopic illumination, as well as dynamic pupillary response parameters. Correlation analyses were performed between contrast sensitivity and pupillometric measurements.

**Results:** Binocular static contrast sensitivity was lower with Abiliti contact lenses at higher spatial frequencies, with the most pronounced difference observed at 15.1 cpd ($p=0.004$). Binocular dynamic contrast sensitivity was significantly reduced with Abiliti contact lenses at all spatial frequencies of 1.2 cpd and above compared with daily single-vision contact lenses ($p<0.05$). No correlations were found between contrast sensitivity and pupil diameter parameters. In contrast, dynamic contrast sensitivity showed significant positive correlations with pupillary response velocity, particularly at higher spatial frequencies.

**Conclusion:** Abiliti contact lenses are associated with reduced binocular dynamic contrast sensitivity and decreased high-frequency static contrast sensitivity compared with daily single-vision contact lenses. Contrast performance appears to be independent of pupil size but related to pupillary response kinetics.

## FP10 The Effect of DIMS Lens Wear Duration on Myopia Progression in Children Engaged in Regular Sports: A 12-Month Observational Study

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**Purpose:** This study aimed to evaluate the relationship between daily wear duration of defocus incorporated multiple Ssgments (DIMS) spectacle lenses and myopia progression in children who regularly participate in sports activities.

**Methods:** This 12-month prospective-observational study included 56 children aged 8–14 years who were prescribed DIMS lenses for myopia control and participated in sports training at least three days per week. During sports sessions, children used senofilcon A daily disposable contact lenses instead of their DIMS lenses. Based on daily DIMS wear duration, participants were divided into three groups:

• Group A:High wear duration(≥10 hours/day) • Group B:Moderate wear duration(7–9 hours/day) • Group C:Low wear duration(≤6 hours/day) Cycloplegic spherical equivalent refraction (SE) and axial length (AL) were measured at baseline, 4 months, and 12 months.

**Results:** After 12 months, myopia progression was lowest in Group A (SE: –0.28±0.15 D; AL:+0.23±0.08 mm). In Group B, SE progression was –0.39±0.21 D and AL elongation was +0.33±0.10 mm, while in Group C, SE progression was –0.71±0.25 D and AL elongation was +0.51±0.12 mm. The differences among the groups were statistically significant ($p< 0.01$).

**Conclusion:** Daily wear duration of DIMS lenses significantly affects myopia control efficacy in children engaged in regular sports activities. During sports sessions, children used senofilcon A daily disposable contact lenses, which do not contribute to myopia control, thereby reducing total DIMS lens wear time. This reduction may limit treatment efficacy. In such cases, considering a switch to myopia-control daily contact lenses could help maintain treatment effectiveness and optimize overall myopia management.

## FP11 Functional Impact of a Non-Coaxial Ring-Focus Myopia Control Contact Lens on Macular Sensitivity

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**Purpose:** To evaluate the short-term effect of a non-coaxial ring-focus myopia control soft contact lens design on macular retinal sensitivity in young myopic adults using fundus-tracked microperimetry.

**Methods:** This prospective, within-subject study included 40 eyes of 20 myopic adults (mean age: 22.3±1.9 years; spherical equivalent −1.00 to −4.00 D). Retinal sensitivity was assessed using MP-3 microperimetry under three randomized optical conditions: no contact lens, non-coaxial ring-focus myopia control soft contact lens, and monofocal soft contact lens. A 37-point macular grid centered on the fovea was used. The primary outcome was mean retinal sensitivity across all loci, with secondary analysis of parafoveal sensitivity (2–5° eccentricity). Comparisons were performed using repeated-measures ANOVA with Bonferroni correction.

**Results:** Mean retinal sensitivity differed significantly among optical conditions ($p=0.006$). The non-coaxial ring-focus design demonstrated a modest reduction in mean sensitivity compared with both no-lens and monofocal lens conditions (both $p< 0.05$), while no difference was observed between no-lens and monofocal conditions ($p>0.05$). Sensitivity reduction with the ring-focus design was predominantly parafoveal, whereas foveal sensitivity and fixation stability remained unchanged. No subjective visual discomfort was reported.

**Conclusions:** Short-term wear of a non-coaxial ring-focus myopia control soft contact lens was associated with a mild, diffuse parafoveal reduction in retinal sensitivity, without affecting foveal function or fixation stability. This finding likely reflects optical light-modulation rather than functional impairment and supports the short-term visual tolerability of this lens design.

## FP12 Comparison of Corneal Epithelial Thickness in Contact Lens Wearers and Non-Wearers

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**Objective:** To compare corneal epithelial thickness (CET) in long-term soft contact lens wearers and age- and sex-matched controls using anterior segment optical coherence tomography (AS-OCT).

**Methods:** This study included 40 eyes of 20 soft contact lens wearers for ≥8 hours/day and ≥2 years and 40 eyes of 20 controls with no history of contact lens use. Analyses were performed using IBM SPSS Statistics for Windows, Version 27.0. The association between CET and duration of lens wear was assessed by correlation analysis.

**Results:** There was no significant difference in age between the contact lens group (27.05±1.34 years) and the control group (27.55±1.65 years) ($p=0.14$). Independent samples t-test concluded that mean central CET of control group (49.08±2.52 µm) was significantly higher than mean central CET of contact lens users (46.88±2.96 µm) ($p=0.0006$, Cohen's $d=0.80$). In the contact lens group, epithelial thickness measurements did not differ significantly among the 2-mm, 4-mm, 6-mm, and 7-mm zones (Friedman test, $p=0.18$). Pearson correlation analysis demonstrated a significant negative correlation between contact lens wear duration and mean epithelial thickness ($r=-0.34$, $p=0.035$).

**Conclusion:** Long-term contact lens wear is associated with reduced CET. Moreover, a significant inverse correlation is found between contact lens wear duration and epithelial thickness. Epithelial remodelling secondary to chronic mechanical microtrauma and hypoxic stress associated with contact lens wear may become clinically significant with prolonged use.

## FP13 Diurnal Changes in Tear Meniscus Parameters, Conjunctival Redness, and Subjective Discomfort in Young Adult Soft Contact Lens Wearers

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**Objective:** To evaluate diurnal changes in tear meniscus parameters, conjunctival redness, and subjective discomfort in contact lens wearers under real-life conditions.

**Background:** Objective ocular surface assessment may provide insight into end-of-day discomfort related to contact lens wear.

**Methods:** Anterior segment optical coherence tomography was performed in the morning (08:00) and at the end of the day (17:00) to measure tear meniscus height (TMH). Standardized anterior segment photographs were obtained, and conjunctival redness was quantified across quadrants using digital image analysis with ImageJ (NIH, USA). Subjective discomfort was assessed using a visual analog scale (VAS) and the Contact Lens Dry Eye Questionnaire-8 (CLDEQ-8).

**Results:** Fifteen participants (30 eyes; 13 females, 2 males; mean age 27±1.19 years) were enrolled. Mean contact lens use was 6.63±3.15 years, with a daily wear time of 10.8±4.14 hours. Subjective discomfort significantly increased at the end of the day (VAS, p=0.003). End-of-day TMH values were significantly lower than morning values, indicating reduced tear volume (p=0.017). Changes in subjective discomfort were significantly associated with conjunctival redness (temporal: Spearman's ρ=−0.679, p=0.005; nasal: ρ=−0.615, p= .015; overall: ρ=−0.646, p=0.009), whereas tear meniscus changes showed no association.

**Discussion:** Daily contact lens wear increases discomfort, reduces tear volume. Despite the expected role of tear volume, symptoms were unrelated to tear meniscus changes but associated with conjunctival redness, supporting symptom–sign discordance and a

## FP14 Effects of Long-Term Contact Lens Use on Ocular Surface Morphology and Meibomian Gland Function

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**Purpose:** To evaluate the effects of long-term silicone hydrogel contact lens (CL) wear on the ocular surface, meibomian gland function, tear film characteristics, corneal topography, and endothelial morphology, and to assess their association with CL wear duration.

**Methods:** A total of 380 eyes from 190 patients were prospectively evaluated. Participants were categorized into four groups based on CL wear duration: controls (never used CLs), 1–5 years, 5–10 years, and ≥10 years. All subjects completed OSDI and CLDEQ-8 questionnaires and underwent biomicroscopic examination, non-invasive tear break-up time (NIBUT) measurement, corneal topography, meibography, wavefront analysis, and specular microscopy. All examinations were performed at least one week after contact lens discontinuation using standardized protocols and identical devices.

**Results:** Subjective dry eye symptoms increased significantly with longer CL wear duration, reflected by higher OSDI and CLDEQ-8 scores. Increased conjunctival and corneal staining, together with reduced TBUT and NIBUT values, were also observed. The severity of meibomian gland dysfunction and meibography scores were significantly higher in patients wearing CLs for five years or longer, particularly involving the lower eyelid. Although some statistically significant differences were detected in corneal topography parameters, these changes were not clinically relevant and showed no consistent association with wear duration. Wavefront aberrations and endothelial cell density and morphology remained comparable across all groups.

**Conclusion:** Long-term contact lens wear is associated with increased subjective dry eye symptoms, ocular surface staining, and meibomian gland dysfunction. In contrast, corneal topography, wavefront aberrations, and endothelial cell parameters show no clinically meaningful changes across varying durations of lens wear, indicating preserved corneal structure and optical quality.

## FP15 The Impact of Advanced Surface Moisturizing Technologies on Contact Lens Comfort in Digital Platform Users

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**Summary:** This study aimed to compare the on-eye performance and subjective comfort of two lotrafilcon B silicone hydrogel contact lenses (CLs), each manufactured using different surface moisturizing technologies in digital device users.

Twenty-nine asymptomatic habitual CL wearers who used digital platforms for more than three hours daily were enrolled in a randomized, double-masked, crossover study. Participants wore either Air Optix Aqua or Air Optix Plus HydraGlyde CLs for one month and then crossed over to the alternate lens for an additional month. At baseline and at the end of each month, Contact Lens Dry Eye Questionnaire-8 (CLDEQ-8) scores, biomicroscopic findings, tear function tests, and blink rates were evaluated. Subjective assessments of vision and comfort were obtained using a Likert-type questionnaire, along with first-impression ratings of visual clarity, comfort, and dryness. The mean age of the participants was 25.5±7.2 (range, 16-45) years. Air Optix Plus HydraGlyde lenses demonstrated significantly lower tarsal papillary grading and longer tear-film break-up time compared with Air Optix Aqua lenses ($p<0.05$).

No significant differences were observed between the two lens types regarding slit-lamp findings, Schirmer test results, blink rate, or CLDEQ-8 scores ($p>0.05$). Subjective evaluations showed that Air Optix Plus HydraGlyde lenses provided superior end-of-day comfort and were associated with less blurred vision, reduced dryness, and decreased ocular tiredness ($p<0.05$).

In conclusion, Air Optix Plus HydraGlyde lenses offered improved comfort and visual performance compared with Air Optix Aqua lenses. Advances in surface moisturizing technologies may enhance CL comfort in individuals with moderate daily digital device exposure.

## FP16 Corneal Confocal Microscopy Findings in Dry Eye Patients with Primary Sjögren's Syndrome

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**Objective:** To investigate ocular surface parameters and corneal subbasal nerve plexus (SBNP) morphology in patients with primary Sjögren's syndrome dry eye (SSDE) compared with healthy controls.

**Methods:** Twenty-seven eyes of 27 SSDE patients and 30 eyes of healthy controls were included. Only the right eye of each participant was analyzed. Schirmer test, non-invasive tear breakup time (NI-TBUT), Oxford staining grade, and Ocular Surface Disease Index (OSDI) score were recorded. SBNP imaging was performed using corneal confocal microscopy (HRT III/RCM). ACCMetrics (University of Manchester, UK) quantified corneal nerve fiber density (CNFD), corneal nerve fiber length (CNFL), corneal nerve fiber branching density (CNBD), and corneal nerve fiber total branch density (CTBD).

**Results:** Mean age in the SSDE group was 50.46±13.09 years; 26 patients were female (96.3%) and 1 was male (3.7%). Mean Schirmer score was 2.21±1.31 mm, NI-TBUT was 4.35±1.54 sec, Oxford grade was 1.57±0.75, and OSDI score was 44.83±14.36. Compared with controls, SSDE eyes had significantly reduced SBNP metrics, with lower CNFD (15.61±9.45 vs 25.72±5.34; $p<0.001$), CNBD (20.57±18.20 vs 36.38±13.27; $p<0.001$), CNFL (11.52±4.71 vs 16.03±2.61; $p<0.001$), and CTBD (34.03±24.67 vs 52.50±21.24; $p=0.003$). OSDI score correlated negatively with CNFD ($r=-0.738$, $p=0.004$), CNBD ($r=-0.600$, $p=0.030$), and CNFL ($r=-0.637$, $p=0.019$).

**Conclusion:** CCM showed significant SBNP alterations in SSDE eyes compared with controls. Lower nerve metrics were associated with higher symptom scores, suggesting that CCM-derived parameters may help characterize disease severity.

## FP17 Understanding Dry Eye Disease from the Patient Perspective: A Cross-National Evaluation of Burden, Care Pathways, and Unmet Needs

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**Purpose:** Dry eye disease (DED) is common and burdensome, yet patient experiences and care pathways remain insufficiently understood. The NESTS study evaluated symptom burden, patient journeys, and unmet needs among adults reporting DED symptoms across five countries.

**Methods:** A two-phase, online, mixed-methods survey was conducted in early 2025 among adults aged ≥18 years in the United Kingdom, France, Germany, Poland, and Saudi Arabia. Phase I (n=2,580) assessed the prevalence of self-reported dry eye symptoms in the general population. Phase II (n=2,572) focused on symptomatic individuals, examining symptom severity, perceived triggers, self-care practices, healthcare utilization, and satisfaction with treatment. Data were weighted by age, sex, and region to ensure national representativeness.

**Results:** Approximately 25% of adults reported regular dry eye symptoms, with nearly half experiencing symptoms daily. Ocular dryness and eye fatigue were the most frequently reported and were commonly rated as moderately to severely bothersome. Symptoms were often attributed to digital device use, environmental conditions, or aging. Despite persistent symptoms—frequently lasting more than five years—fewer than half of respondents had consulted an eye care professional. Annual consultation rates ranged from 40% in France to 72% in Saudi Arabia, while professional diagnosis rates remained low overall. About one-third of participants reported worsening symptoms over the past year. Common sources of dissatisfaction included short-lasting symptom relief and uncertainty regarding long-term management.

**Conclusions:** DED substantially affects daily functioning and emotional wellbeing, yet remains under-recognized and inadequately managed. Earlier identification, improved communication, and structured follow-up may enable more effective, individualized long-term care.

## FP18 Effect of Contact Lens Wear and Screen Exposure on Meibomian Gland Integrity and Dry Eye Symptoms in Healthcare Workers

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**Purpose:** To evaluate the impact of contact lens wear and screen exposure on meibomian gland (MG) integrity and dry eye symptoms in young healthcare professionals.

**Methods:** In this cross-sectional study, healthcare workers younger than 45 years were enrolled. All participants completed the Standardized Patient Evaluation of Eye Dryness II (SPEED II) questionnaire. Upper eyelid MG loss was assessed using noncontact meibography. Contact lens wear status, daily duration of wear (<5, 5–10, 10–15, >15 hours), lens replacement frequency (daily, biweekly, monthly), and cumulative daily screen time were recorded. Associations between behavioral factors, symptom severity, and MG loss were analyzed statistically.

**Results:** A total of 124 eyes from 124 participants were analyzed; 49 were contact lens users. MG loss was not significantly associated with contact lens wear (p=0.195). No significant correlation was observed between MG loss and SPEED II scores (p=0.723). Daily screen exposure was not associated with MG loss or symptom severity (p=0.741 and p=0.135, respectively). Daily wear duration was not significantly related to symptoms (p=0.093), whereas lens replacement frequency demonstrated a significant association; median symptom scores were higher among monthly replacement users (9.5 [0–28]) compared with daily users (2 [0–5]) (p=0.006).

**Conclusions:** In this young healthcare cohort, contact lens wear and screen exposure were not associated with structural MG loss. The absence of correlation between symptoms and meibographic findings supports the recognized sign–symptom discordance in ocular surface disease. However, the association between symptom severity and replacement frequency highlights the clinical importance of appropriate contact lens replacement practices.

## FP19 Comparison of Tear Break-Up Time in Patients Using Monthly Contact Lenses with Plasma Surface Coating and Water Gradient Technologies

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**Objective:** To investigate non-invasive tear break-up time( NITBUT) measurements obtained before and after contact lens

(CL) trial in patients who were fitted with monthly contact lenses, featuring water-gradient (Alcon Total30), and plasma surface coating technology (Alcon Air Optix Hydraglyde).

**Methods:** Sixty eyes of 30 patients were included in the study; the right eyes were fitted with Total 30 lenses (Group 1), and the left eyes were fitted with Air Optix lenses (Group 2). Corneal topographic data obtained with the Sirius scheimpflug camera, and the first NITBUT values obtained before CL fitting and at 30 minutes after CL wear were compared.

**Results:** The mean age of the patients was 21.26±2.55 (18-28) years, and the female-to-male ratio was 21/9. The HVID, K1, K2, Kmax, central corneal thickness(CCT), and Q value for Groups 1 and 2 were 12.087 and 12.089 (p=0.97), 43.102 and 43.088 (p=0.96), 43.863 and 43.864 (p=0.99), 45.48 and 45.29 (p=0.70), 547.12 and 547.13 (p=0.99), and −0.26 and −0.27 (p=0.85), respectively. No significant differences were observed between the two groups in terms of topographic parameters. NITBUT values were analyzed using repeated-measures ANOVA with time and lens type as within-subject factors. In Groups 1 and 2, NITBUT values before CL wear was 10.58±4.33 and 12.16±4.14, respectively, and decreased to 5.82±4.57 and 5.79±4.12 at 30 minutes after CL wear. A statistically significant reduction in NITBUT values was observed in both groups following CL fitting ($p<0.001$), whereas repeated measures ANOVA test revealed that there was no statistically significant interaction or difference in NITBUT changes over time between the two groups ($F=2.57, p=0.11$).

**Conclusion:** Despite the limitations associated with comparing precorneal and prelens NITBUT measurements, present study indicated that lenses exhibited similar NITBUT changes over time.

# ABSTRACTS: e-posters

1– Withdrawn 2– Withdrawn 3 Withdrawn

## 4 How can we Protect the Ocular Surface?

**Adriana Stanila**

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**Introduction:** The ocular surface is the only structure exposed to contact with the external environment. A healthy ocular surface is a vital component of a well-functioning eye. Cornea and conjunctiva, lids, exocrine glands and their innervation form an integrated entity, which regulates the production of tear fluid. Stable tear fluid plays an essential role in nourishing and protecting the ocular surface from external threats, such as pollution, desiccation, injuries, allergens and pathogens. Ocular surgeries, ocular surface diseases, topical treatments, differences in age, sex, ethnicity, systemic diseases and their medication as well as lifestyle and environmental factors. The aim of the study is to show the management of ocular surface protection.

**Material and Method:** Management was medical: lubrification and topic therapy preservative-free, autologous serum, regenerative therapy, liposome therapy, and related with etiology anti-inflammatory and antibiotics agents sometimes also systemic therapy. Therapeutic bandage soft contact lens (TCL) like a protective therapy. The surgical management in refractory cases was with dry amniotic membrane grafting, platelet rich fibrin (PRF) and tarsorrhaphy. In mechanical desorders secondary facial nerve paralysis we performed weight implantation in the upper lid with or without correction of the ectropion.

**Results:** Combining this treatment algorithm the results were good in ocular surface protection.

**Conclusions:** The protection of the ocular surface is multifactorial. Combining it with different therapies related to etiology can lead to good results. Artificial tears without preservatives are welcome, autologous serum is very effective. Tarsorrhaphy in refractory cases remains the gold standard, and the weighted implant is chosen in persistent epithelial defect related to facial nerve palsy. The therapeutic contact lens is a great benefit in the treatment of persistent epithelial defect, accelerated healing and improvement of quality of life and quality of vision.

## 5 A Rare Case of Pseudoexfoliative Material Deposition on a Modern Trifocal Intraocular Lens

**Ahmed Alahmad**

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**Objective:** To describe a rare case of spoke-like opacification on a modern trifocal intraocular lens (IOL) associated with pseudoexfoliation syndrome (PEX), seven years after uneventful cataract surgery.

**Background / Introduction:** Pseudoexfoliation syndrome is an age-related disorder characterised by the deposition of fibrillar material on anterior segment structures. Although typically observed on the crystalline lens in phakic eyes, pseudoexfoliative material has also been reported on IOL surfaces, most commonly in older PMMA or early acrylic lenses. Reports involving contemporary multifocal IOLs remain limited.

**Methods:** A 70-year-old woman presented with light sensitivity and a temporal shadow in the right eye, seven years after implantation of a Zeiss AT LISA trifocal IOL. Clinical examination, slit-lamp biomicroscopy, and fundus assessment were performed, and the patient was reviewed following a trial of topical corticosteroid therapy.

**Results:** Slit-lamp examination revealed fine, dust-like deposits in a circumferential spoke-like pattern on the IOL surface, sparing the central visual axis. Visual acuity remained excellent, the retina was normal, and the fellow eye showed no abnormalities. The appearance was consistent with unilateral pseudoexfoliation-related IOL deposition. The pattern and distribution suggested accumulation in regions influenced by aqueous flow and mechanical interaction rather than material-specific lens changes.

**Conclusion / Discussion:** This case demonstrates that pseudoexfoliative deposition can occur on modern trifocal IOLs, reinforcing that the process is driven by the intraocular environment rather than IOL material or optical design. Recognition of the characteristic spoke-like pattern is important to avoid misdiagnosis with alternative causes of IOL opacification and to ensure appropriate monitoring for associated risks such as glaucoma and zonular weakness.

## 6 Anterior Segment Biometric and Corneal Endothelial Alterations in Keratoconus: A Comparative Study

**Ali Süha Uyanık**

Sümer F.

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**Purpose:** To evaluate anterior segment biometric parameters and corneal endothelial characteristics in keratoconus patients compared to healthy controls.

**Methods:** This prospective study included 60 keratoconus patients (right eyes) and 60 age-matched healthy controls. Sirius corneal topography (Scheimpflug-Placido technology) measured corneal curvature, maximum keratometry (Kmax), and central corneal thickness (CCT). Lenstar LS 900 assessed axial length, anterior chamber depth (ACD), and lens thickness (LT). Tomey EM-4000 specular microscopy evaluated endothelial cell density (ECD), coefficient of variation (CV), hexagonal cell percentage (6A), and average cell area. Statistical analysis used independent t-tests and Pearson correlation ($p<0.05$).

**Results:** Keratoconus patients demonstrated significantly deeper ACD (3.48±0.31 vs 3.12±0.24 mm, $p<0.001$) and reduced LT (3.61±0.28 vs 3.78±0.22 mm, $p<0.001$). CCT was markedly thinner (468±42 vs 542±28 µm, $p<0.001$) with elevated Kmax (52.4±4.8 vs 43.2±1.4 D, $p<0.001$). ECD showed no significant difference (2687±312 vs 2756±284 cells/mm$^2$, $p=0.186$). Endothelial morphology was significantly altered with increased polymegathism (CV: 34.2±6.8 vs 28.4±4.2%, $p<0.001$) and reduced hexagonality (6A: 54.3±8.6 vs 62.8±6.4%, $p<0.001$). Strong correlations existed between Kmax and ACD ($r=0.68$, $p<0.001$).

**Conclusions:** Keratoconus is associated with significant anterior segment biometric alterations. Despite preserved ECD, marked morphological changes indicate cellular stress, which may have implications for disease monitoring and surgical planning.

## 7 Transferring Optical Designs Across Lens Materials: A Randomized, Double-Masked, Two-Way Crossover Clinical Comparison of Samfilcon A and Kalifilcon A Multifocal Contact Lenses

**Ömür Uçakhan[1]**

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**Summary:** The ULTRA® One Day kalifilcon A multifocal contact lens (MFCL) incorporates the same 3-zone progressive optics as the older ULTRA for Presbyopia samfilcon A MFCL. As transferring optical designs between materials can be challenging, this study assessed the clinical performance of both kalifilcon A and samfilcon A MFCLs to evaluate the success of the design transfer.

This randomized, double-masked, two-way crossover study was conducted in participants (≥40 years) who wore kalifilcon A MFCLs and samfilcon A MFCLs for 1 week each (in randomized order) on a daily disposable basis. Binocular high-contrast, high-illumination logMAR visual acuity (VA) was measured at 6 m (distance) and 40 cm (near) following 7 (±3) days of (≥8 hours) wear of each MFCL. Non-inferiority was established using a margin of 0.06 logMAR. Secondary assessments included visual quality and comfort (0–100 subjective rating scales), centration, movement, redness, staining, CL deposits, wettability, and adverse events. Twenty-nine participants completed the study.

The mean difference between the CLs in binocular logMAR VA was –0.017 (distance) and –0.003 (near), both meeting non-inferiority criteria ($p<0.001$). Visual quality scores were similarly high (all means >80, “very good”). Comfort ratings were higher for kalifilcon A at follow-up (mean 93.4 vs. 84.5, $p=0.002$), with no clinically meaningful differences in fit, movement, or ocular findings. All CLs exhibited excellent wettability and minimal deposition. No adverse events or device deficiencies were reported. Kalifilcon A MFCLs demonstrated visual performance equivalent to samfilcon A MFCLs with greater overall comfort.

These results confirm successful design transfer between materials.

## 8 Presbyopia as a Dropout Risk: Clinical Strategies to Sustain Contact Lens Wear

**Ana Aleksic**

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**Summary:** Presbyopia represents a clinically significant transition period during which a substantial proportion of long-term contact lens wearers consider discontinuation. Current evidence indicates that 20–40% of patients reduce or cease wear upon onset of presbyopia, primarily due to diminished near visual performance, decreased comfort, and age-related ocular surface changes. Additional factors include suboptimal counselling, inappropriate initial lens selection, and insufficient opportunities for adaptation with alternative presbyopic correction modalities. Recent studies demonstrate that structured clinical protocols - incorporating systematic multifocal lens refitting, early management of evaporative dry eye, and scheduled follow-up during the adaptation phase can improve patient satisfaction and reduce discontinuation rates.

To illustrate the clinical relevance of these findings, we describe a presbyopic patient who initially expressed intent to discontinue contact lens wear but successfully maintained use following individualized lens selection and targeted follow-up interventions. This observation is consistent with published data indicating that the majority of presbyopia-related dropout factors are modifiable through comprehensive clinical management. Key elements include establishing realistic visual expectations, evidence-based selection of optical designs (e.g., center-near aspheric multifocals, monovision, modified monovision, or rigid multifocal systems), and proactive treatment of ocular surface instability. Early and structured follow-up - typically within 72 hours and again at one week-facilitates timely troubleshooting and supports successful adaptation.

In conclusion, although presbyopia remains a common point of contact lens discontinuation, targeted clinical strategies can substantially mitigate dropout. Implementing a systematic, evidence-based approach may enhance visual outcomes and promote continued contact lens wear among presbyopic patients.

## 9 9 – Visual Rehabilitation Aimed Scleral Contact Lenses: Clinical Experience in a Tertiary-Eye Center

**Anil Kaplan**

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**Objective:** To evaluate the use of visual rehabilitation aimed scleral contact lens (SCL) use in a tertiary-eye center.

**Introduction:** SCLs are large-diameter gas permeable contact lenses that vault over the entire cornea and rest on the sclera, creating a fluid interface alleviating symptoms of corneal irregularities and protects the ocular surface.

**Methods:** Medical records of adult patients fitted with SCL at Ege University from January 2024 through December 2025 were retrospectively reviewed.

**Results:** A total of 38 eyes of 25 patients were included in the study. M:F ratio was 11:14. Indications for SCL use were keratoconus (n=28 , %74), pellucid marginal degeneration (n=3, 8%), post-keratoplasty ectasia (n=3, 8%), post-refractive surgery ectasia (n=3, 8%), and history of penetrating injury (n=1, 2%). Mean age of the patients was 37.28±14.76 (18-65) years. LogMAR BCVA values were significantly lower after SCL wear compared to no wear. (0.86±0.46 LogMAR - 0.16±0.11 LogMAR, p< 0.001) The mean maximal keratometry reading in patients with keratoconus was 57.63±9.64 diopters. Astigmatism is often presented as "with-the-rule". The mean follow-up period was 14.8±6.5 (1-23) months. No SCL-related complication necessitating discontinuation was observed.

**Conclusion:** The primary clinical objectives of SCL fitting are visual rehabilitation, preservation of corneal integrity, and restoration of ocular surface homeostasis. SCLs also provide excellent visual outcomes with relatively good side effects and safety profile. Thus, the popularity of SCL is increasing worldwide.

## 10 Management of Acanthamoeba Keratitis During Pregnancy: A Case Report

**Anil Kaplan**[1]

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**Objective:** To report a clinical case of Acanthamoeba keratitis in a pregnant patient.

**Introduction:** Acanthamoeba keratitis (AK) is a severe, sight-threatening infection, most commonly associated with contact lens wear. AK during pregnancy presents a clinical challenge due to contraindication of systemic adjunctive therapies and safety concerns regarding fetal exposure.

**Methods:** Medical records of a 33-year-old pregnant patient at the 31st week of gestation presented with severe ocular pain, photophobia, and decreased vision in her right eye were evaluated. She had a history of contact lens wear for recurrent epithelial erosions. Ophthalmological examination and in vivo confocal microscopy were performed for diagnosis.

**Results:** The initial best corrected visual acuity (BCVA) was 1.30 LogMAR and an epithelial defect was identified. Confocal microscopy confirmed the presence of Acanthamoeba cysts. She was hospitalised and topical biguanide drops were administered with punctal occlusion every 2 hours. The clinical response was monitored closely. Complete resolution of the epithelial defect was achieved after a week, and the final BCVA became 0 LogMAR. She was discharged with biguanides 4 times a day. She used biguanides for 6 months and the total follow-up time was 2.5 years. No adverse systemic effect or pregnancy-related complication was reported.

**Conclusion:** The management of AK in pregnant patients requires a careful balance between aggressive ocular therapy and fetal safety. Early diagnosis and a strictly monitored topical treatment protocol can provide visual rehabilitation and preservation of ocular integrity without systemic complications and fetal teratogenicity.

## 11 Scleral Contact Lens Application in a Pseudophakic Patient with Traumatic Corneal Scar and Visual Impairment

**Atilim Armagan Demirtas**

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**Purpose:** To present the visual rehabilitation achieved with scleral contact lens (SCL) application in a pseudophakic patient with reduced visual acuity due to traumatic corneal scarring.

**Case report:** A 24-year-old male presented with decreased vision in the left eye. His history included traumatic corneal laceration repair and subsequent phacoemulsification with intraocular lens implantation. On examination, best-corrected visual acuity (BCVA) was 1.0 in the right eye and 0.2 in the left. Autorefraction could not be obtained in the left eye due to central corneal opacity. Slit-lamp examination revealed a linear corneal scar extending from 10 to 4 o'clock and a well-positioned intraocular lens. Fundus examination was unremarkable. Corneal tomography demonstrated localized steepening and irregular astigmatism in the left eye. Due to the patient's age, active lifestyle, and anticipated poor tolerance of rigid gas permeable contact lenses (RGPCLs), a SCL was trialled. The lens with the best fit and visual outcome had the following parameters: BC 7.5 mm, diameter 16.3 mm, vault 4600 µm, power -4.50 -1.00×10, stabilization axis 35°. With this SCL, BCVA improved from 0.2 to 0.8 in the affected eye.

**Conclusion:** Traumatic corneal scarring can significantly reduce visual acuity by affecting both the optical axis and inducing irregular astigmatism. SCLs provide a fluid reservoir that masks corneal irregularities and improve visual outcomes. They are a successful option in patients intolerant of RGPCLs, especially those with post-traumatic corneal irregularities.

## 12 Short-Term Effects of Swimming Goggle Use on Corneal Tomographic Parameters in Patients with Keratoconus

**Atilim Armagan Demirtas**

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**Purpose:** This study aimed to investigate the short-term impact of swimming goggle-induced periorbital pressure on anterior segment parameters in eyes affected by keratoconus.

**Methods:** Forty-four eyes from 44 patients (mean age: 26.1±5.1 years) with Stage 1–4 keratoconus, classified according to the Amsler–Krumeich system, were evaluated. Anterior segment measurements were obtained using a Pentacam® Scheimpflug imaging device immediately before and directly after 20 minutes of swimming goggle wear. The assessed parameters included keratometric values (K1, K2, Km, Kmax), central and thinnest corneal thicknesses, corneal volume within a 10 mm diameter (CV10), anterior chamber volume (ACV), anterior chamber depth (ACD), iridocorneal angle (ICA), and pupil diameter (PD).

**Results:** There were no significant differences observed in keratometry, central and thinnest corneal thickness, ACV, ACD, ICA, PD, or intraocular pressure following goggle use (all $p>0.05$). However, CV10 demonstrated a modest reduction ($\Delta$=–0.18 $mm^3$, equating to a 0.3% decrease), which reached statistical significance prior to multiple testing correction ($p = 0.008$), but did not remain significant after applying the false discovery rate adjustment (FDR-adjusted $p=0.10$).

**Conclusions:** Although short-term use of swimming goggles did not significantly alter most anterior segment parameters, a slight decrease in corneal volume (CV10) was observed. This finding may indicate a mild biomechanical response to transient external pressure in eyes with keratoconus. While the statistical significance diminished after correction, the physiological implication warrants further exploration. CV10 may have potential as an exploratory marker of corneal mechanical sensitivity in keratoconus and should be investigated in future studies with larger sample sizes.

## 13 Non-Surgical Visual Rehabilitation Using Mini Scleral Contact Lenses in Corneal Scarring Secondary to Trauma or Infection

**Atilim Armagan Demirtas**

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**Purpose:** To assess the effectiveness of mini-scleral contact lenses (mini-SCLs) as a non-surgical approach for visual rehabilitation in patients with corneal scarring and visual impairment secondary to ocular trauma or prior corneal infection.

**Methods:** This retrospective case series included six eyes of six patients (aged 24–76 years) with unilateral corneal scarring and reduced best-corrected visual acuity (BCVA). Etiologies included penetrating ocular trauma (n=2), corneal foreign body injury (n=3), and post-infectious keratitis (n=1). All patients had inadequate visual correction with spectacles and poor tolerance of rigid gas-permeable lenses. Clinical evaluation before and after mini-SCL fitting included BCVA, intraocular pressure, autorefractometry/keratometry, corneal tomography, and anterior/posterior segment OCT.

**Results:** All patients experienced meaningful improvements in BCVA following mini-SCL fitting. In eyes with foreign body–related scars, vision improved from 0.3 to 0.8. The post-keratitis case improved from 0.3 to 1.0. Among trauma cases, one eye improved from hand motion to 0.3, and the other from 0.4 to 1.0. The mini-SCLs provided an optically regular surface, effectively neutralizing irregular astigmatism and enhancing visual quality.

**Conclusions:** Mini-scleral contact lenses provide an effective non-surgical alternative for visual rehabilitation in patients with corneal scarring secondary to trauma or infection. They offer notable improvements in visual acuity by masking corneal irregularities and enhancing optical quality. This approach is particularly valuable for patients who are not suitable candidates for corneal surgery or prefer to postpone surgical intervention.

## 14 Differentiating Contact Lens Peripheral Ulcer from Microbial Keratitis: Clinical Criteria and Management in Three Cases

**Bunyamin Can**

Sumer F.

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**Objective:** To describe clinical differentiation criteria between contact lens peripheral ulcer (CLPU) and early microbial keratitis, and outline safe return to lens wear.

**Background:** CLPU is a sterile inflammatory condition that can mimic infectious keratitis, potentially leading to unnecessary intensive antimicrobial therapy and prolonged contact lens cessation. Establishing reliable clinical differentiation criteria is essential.

**Case Series:** Three patients (ages 22, 27, and 34) wearing monthly silicone hydrogel lenses with occasional overnight use presented with acute pain, redness, and small peripheral infiltrates (1.0–1.5 mm). Clinical features favoring CLPU over microbial keratitis included: peripheral location with intact epithelium or defect <2 mm, minimal anterior chamber reaction, absence of mucopurulent discharge, intact corneal sensation, and symptom onset within hours. Corneal cultures were negative in all cases. Management consisted of lens discontinuation, prophylactic-dose topical fluoroquinolone, and preservative-free artificial tears. Complete resolution occurred within 7–14 days with minimal residual scarring (<0.5 mm). All patients were transitioned to daily disposable lenses with strict daily-wear-only compliance at 4–6 weeks. No recurrence was observed at 6 months.

**Conclusion:** CLPU can be reliably differentiated from microbial keratitis using clinical criteria, avoiding unnecessary intensive treatment. Transitioning to daily disposable lenses with strict avoidance of overnight wear effectively prevents recurrence. We propose a practical clinical algorithm for corneal infiltrative events in contact lens wearers.

## 15 The Importance of Daily Disposable soft Contact Lenses in Piggyback lens use in Keratoconus

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**Purpose:** To compare the affects of myopic or hyperopic soft daily disposable contact lens (CL) use, in piggyback application for keratoconus, via visual acuity (VA) and rigid gas-permeable (RGP) lens power.

**Methods:** Twenty-eight eyes of 23 patients were included in the study. Piggyback CL fittings were combined with Senofilcon-A (Acuvue max daily disposable) soft CL of -3.00 D, +3.00 D and Rose K2 RGP CL. Corneal topography was taken on the naked eye and after piggyback application. Mean central keratometry, over-refraction, and VA were recorded and analyzed.

**Results:** The mean central keratometry was 6.61±0.3 in naked eye, 7.53±0.15 in -3 D CL, and 7.47±0.17 in +3 D CL. In comparison to the naked eye, the mean central keratometry flattened with both negative and positive lens powers ($p<0.01$ in all cases). There was a significant difference between groups in the mean RGP over-refraction ($p< 0.01$). Estimated RGP's final power increased significantly with positive in comparison with negative lens powers ($p<0.01$). The mean VA with -3 D CL was 0.70±0.16 (range: 0.40-0.90) and the mean VA with +3 D CL was 0.66±0.17 (range: 0.30-1.0). Visual acuity did not change significantly between the different soft lens powers assessed ($p=0.07$).

**Conclusion:** The use of negative-powered soft lenses in piggyback fitting reduces RGP lens power without impacting VA in keratoconus subjects.

## 16 Severe Ocular Surface Toxicity Following Prolonged Povidone-Iodine Exposure During Complicated Cataract Surgery

**Bunyamin Can**

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**Overview:** To report a case of severe chemical keratopathy and persistent ocular surface disease following prolonged povidone-iodine (PVP-I) exposure during complicated cataract surgery.

**Methods:** A 68-year-old male patient underwent phacoemulsification for dense brunescent cataract. Intraoperative posterior capsule rupture necessitated anterior vitrectomy via limbal approach, extending surgical duration to 75 minutes. Standard 5% PVP-I was applied preoperatively, with repeated dilute PVP-I irrigations performed throughout the procedure for endophthalmitis prophylaxis. Clinical findings, ocular surface parameters, and treatment outcomes were documented.

**Results:** On postoperative day one, the patient presented with severe pain and photophobia. Examination revealed diffuse punctate epithelial erosions, reduced Schirmer test values (4 mm, preoperative 12 mm), and decreased tear break-up time (3 seconds). Despite intensive preservative-free lubrication, a persistent epithelial defect measuring 3.2×2.8 mm developed by week one. Impression cytology demonstrated Grade 2 goblet cell loss with squamous metaplasia. Treatment with autologous serum 20% and therapeutic bandage contact lens achieved complete epithelialization by week four. At three-month follow-up, best-corrected visual acuity was 20/30 with residual stromal haze. Moderate dry eye symptoms persisted with an Ocular Surface Disease Index score of 32.

**Conclusions:** This case illustrates the cumulative toxic effects of repeated PVP-I exposure on the ocular surface, mediated through direct cytotoxicity and goblet cell destruction. Although PVP-I remains essential for infection prophylaxis, clinicians should minimize total contact time, ensure thorough irrigation, and consider lower concentrations for repeated intraoperative use, particularly during prolonged procedures.

## 17 NSAID-Induced Corneal Melting Following Uncomplicated Cataract Surgery in a Diabetic Patient: A Case Report

**Bunyamin Can**

Sumer F.

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**Purpose:** To report a case of severe corneal melting associated with topical nonsteroidal anti-inflammatory drug (NSAID) use following routine phacoemulsification in a diabetic patient.

**Methods:** A 72-year-old female with type 2 diabetes mellitus and mild meibomian gland dysfunction underwent uneventful phacoemulsification. Postoperative regimen included nepafenac 0.1% three times daily for cystoid macular edema prophylaxis. Clinical progression, management strategies, and outcomes were documented.

**Results:** At postoperative week three, the patient presented with pain and decreased vision (20/100). Examination revealed a central epithelial defect with stromal thinning of approximately 40% depth, progressing to 60% with early descemetocele formation within 48 hours. Cultures remained sterile. Immediate nepafenac discontinuation was followed by oral doxycycline, topical medroxyprogesterone, and preservative-free lubrication. Cyanoacrylate tissue adhesive was applied, and amniotic membrane transplantation was performed on day three. Complete re-epithelialization occurred by week two post-transplantation. At six-month follow-up, best-corrected visual acuity improved to 20/30 with rigid gas permeable contact lens, despite residual stromal scarring.

**Conclusions:** NSAID-induced corneal melt occurs through a two-stage mechanism involving epithelial breakdown secondary to prostaglandin E2 depletion, followed by stromal degradation mediated by matrix metalloproteinase upregulation. Diabetic patients with subclinical ocular surface disease and reduced corneal sensation represent a high-risk population. Comprehensive preoperative ocular surface evaluation, corneal sensation testing, and individualized risk-benefit assessment are essential before initiating postoperative NSAID therapy. Close monitoring with low threshold for discontinuation may prevent this potentially sight-threatening complication.

## 18 Unilateral Hypermetropic Amblyopia in Triplets: A Rare Case of Genetic Lateralization

**Bunyamin Can**

Sumer F.

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**Purpose:** To investigate the genetic and embryological basis of ipsilateral hypermetropic amblyopia development in triplets.

**Methods:** Seven-year-old triplets (two males, one female) presented for routine examination. The pregnancy was terminated at 38 weeks as a mature delivery. Comprehensive ophthalmological examination including cycloplegic refraction and corneal topography was performed. Family history was negative for ocular pathology.

**Results:** Cycloplegic refraction findings were: Triplet 1: OD +0.50 D (BCVA: 1.0), OS +6.50 D (BCVA: 0.3); Triplet 2: OD +0.25 D (BCVA: 1.0), OS +5.75 D (BCVA: 0.3); Triplet 3: OD +0.75 D (BCVA: 1.0), OS +6.00 D (BCVA: 0.4). Corneal topography revealed normal and symmetrical patterns bilaterally in all subjects, excluding corneal pathology as a contributing factor. No strabismus or fundus abnormality was detected. All three triplets demonstrated approximately 6 diopters of hypermetropia with secondary amblyopia exclusively in the left eye.

**Conclusions:** The development of identical lateralized hypermetropic amblyopia in all three siblings, despite full-term delivery and normal corneal topography, strongly supports a genetic lateralization hypothesis. Genes regulating lateral asymmetry during embryogenesis (Nodal, Lefty, Pitx2) may influence ocular development. The 26% prevalence of strabismus among first-degree relatives of hypermetropic accommodative esotropia patients indicates hereditary predisposition. This unique case demonstrates that hypermetropic amblyopia in triplets may exhibit genetic lateralization patterns, emphasizing the importance of systematic ophthalmological surveillance in multiple pregnancies.

19—Withdrawn

## 20 Ocular Surface Changes After Repeated Intravitreal Anti-VEGF Injections in nAMD

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**Objective:** To evaluate the effects of repeated intravitreal injections (IVI) on the ocular surface and meibomian glands in patients with neovascular age-related macular degeneration (nAMD).

**Setting:** A controlled observational study

**Methods:** Patients who underwent unilateral intravitreal anti-VEGF injections for nAMD were included. The untreated eye was used as the control group. All participants had applied a pre-IVI asepsis protocol with povidone-iodine. Non-invasive tear break-up time (NIBUT), the loss rate of meibomian glands, the Schirmer I test and the Ocular Surface Disease Index (OSDI) questionnaire were noted at a single visit at least four weeks after IVI.

**Results:** Forty-five patients with a mean age of 68.1± .9 years were included. The median number of IVI was 9 (6-33) and median OSDI score was 10.41 (0-71.4). No statistically significant differences were observed between treated and untreated eyes regarding medians of NIBUT (5.6 vs 4.1 sec, p=0.247), the loss rate of meibomian glands (48.7% vs 46.7%, p=0.067), the Schirmer I test (8 vs 9 mm, p=0.420).

**Conclusions:** Repeated anti-VEGF IVI with povidone-iodine preparation shows no significant harmful impact on the ocular surface or meibomian glands.

21 - Withdrawn

## 22 A Dramatic Consequence of Improper Contact Lens Wear: Ocular Hypoxia

**Cevher Furkan Solak**

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**Case report:** This case report documents severe corneal hypoxia and related complications—including limbal neovascularization, superior pannus, and papillary reaction—in a patient with degenerative myopia who used polymacon contact lenses long term, highlighting important considerations in contact lens practice. A 38-year-old male with over six years of contact lens wear presented with stinging, tearing, itching, ocular discomfort, and difficulty removing his lenses. He reported wearing annual replacement lenses for at least 16 hours daily and did not use spectacles. Best-corrected visual acuity was 0.2 in the right eye (−24.00 −0.75 ×70) and 0.3 in the left eye (−19.00 −1.25 ×110).Comprehensive ocular assessment included slit-lamp biomicroscopy, corneal topography, meibography, optical coherence tomography, tear film break-up time, fluorescein staining, and eyelid evaluation.

Findings revealed conjunctival hyperemia, punctate keratopathy, papillary reaction, 360-degree limbal neovascularization, and superior pannus. Severe dry eye disease (Oxford grade 4) and meibomian gland dysfunction (meiboscore 2) were noted. Corneal topography demonstrated a central corneal thickness of 542 µm, corneal warpage, and mild inferior steepening.These findings were attributed to chronic corneal hypoxia resulting from prolonged wear of low–Dk/t polymacon hydrogel lenses. Management included discontinuation of contact lens use, topical lubricants and loteprednol, and spectacle correction, with a planned transition to high–Dk/t silicone hydrogel lenses; however, the patient was lost to follow-up.

This case highlights the critical importance of oxygen transmissibility (Dk/t), appropriate lens selection, adherence to recommended wear schedules, regular follow-up, and the availability of spectacle backup. Despite advances in lens technologies, prolonged use of older-generation, low–Dk/t hydrogel lenses in highly myopic patients may cause serious, potentially irreversible hypoxia-related ocular surface complications.

## 23 Comparison of two Different Blue Light-Filtering Contact Lenses' Effects on Color Discrimination and Contrast Sensitivity

**Ceylin Etiz**[1]

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**Objective:** To compare the effects of two blue light–filtering contact lenses, senofilcon A (Acuvue Oasys Max 1-Day®, Johnson & Johnson) and lehfilcon A (Total30®, Alcon), on color discrimination and contrast sensitivity.

**Methods:** This comparative study included 27 myopic adults with best-corrected visual acuity of 0.0 logMAR in both eyes. Color discrimination was assessed binocularly using the Farnsworth–Munsell 100 Hue test, and blue–yellow axis, red–green axis, and total error scores were recorded. Contrast sensitivity was evaluated monocularly using the Spaeth–Richman Contrast Sensitivity (SPARCS) test, and central, peripheral, and total SPARCS scores were analyzed. A p value <0.05 was considered statistically significant.

**Results:** No statistically significant differences were found between senofilcon A and lehfilcon A blue light–filtering contact lenses in color discrimination parameters, including blue–yellow axis, red–green axis, and total error scores (all p>0.05). Likewise, no significant differences were observed between the two lenses in contrast sensitivity, including the total SPARCS score and the central and peripheral test areas (all p>0.05).

**Conclusion:** In healthy myopic adults, blue light–filtering senofilcon A and lehfilcon A contact lenses showed similar performance in both color discrimination and contrast sensitivity, suggesting no meaningful difference in visual quality between the two lenses.

## 24 HydraGlyde™ Peroxide System for Orthokeratology Lens Care: Our Experience

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**Summary:** Orthokeratology lenses are rigid gas-permeable lenses prone to surface deposits and mechanical damage during routine cleaning, which can affect lens integrity and wearing comfort. This study aimed to evaluate the AOSept™ Plus hydrogen peroxide system with HydraGlyde™ Moisture Matrix for cleaning efficacy, safety, and preservation of the physical and optical properties of Paragon orthokeratology lenses.

Twenty-four lens wearers (48 eyes) were surveyed regarding lens care routines, lens loss, and damage and were divided into two groups: a control group (20 eyes) using a conventional multipurpose solution with manual cleaning, and a study group (28 eyes) following the same regimen supplemented with weekly peroxide-based care. Lens defects, mechanical damage, and subjective comfort were assessed. Lens loss occurred in one control case and two study cases, while traumatic damage was observed once in each group. Microcracks were detected more frequently in the control group (4 eyes) than in the study group (1 eye). Patients using the peroxide system reported improved lens surface cleanliness and greater wearing comfort.

These results indicate that the peroxide-based system provides effective disinfection and deep cleaning, reduces the need for intensive mechanical manipulation, preserves lens integrity, and enhances comfort, supporting its use as part of routine care for rigid gas-permeable orthokeratology lenses.

## 25 Long-Term Efficacy of Standard Versus Accelerated Corneal Cross-Linking

**Dean Saric**

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**Objective:** This study aims to evaluate the long-term efficacy of standard versus accelerated corneal cross-linking (CXL) techniques in stabilizing keratoconus.

**Methods:** This retrospective study included 118 eyes from 59 patients aged 10 to 35 years with progressive keratoconus who underwent CXL from January 2009 to December 2015. The standard CXL group, consisting of 26 patients, received 3 mW/cm$^2$ for 30 minutes, while the accelerated CXL group, with 33 patients, received 9 mW/cm$^2$ for 10 minutes. Changes in keratometry, demarcation line depth, corneal thickness, and both uncorrected and corrected visual acuity were evaluated 10 years after the procedure.

**Results:** Ten years post-procedure, the standard CXL group showed superior results in minimal, maximal, and average keratometry, uncorrected distance visual acuity, and demarcation line depth. No differences were found in corrected distance visual acuity or central corneal thickness between the two groups.

**Conclusion:** Both standard and accelerated CXL provide successful results in strengthening corneal tissue and preventing keratoconus progression. The deeper demarcation line and greater changes in keratometric values observed in the standard CXL group may indicate higher treatment efficacy.

26 - Withdrawn

## 27 Visual Rehabilitation Options According to Disease Stage in Patients with Keratoconus and Comparison of Clinical Parameters

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**Purpose:** To stage keratoconic eyes using the Amsler–Krumeich classification, compare uncorrected visual acuity (UCVA), spectacle-CVA, and contact lens–CVA, and describe stage-specific correction and corneal cross-linking (CXL) patterns.

**Methods:** Retrospective review of 151 patients (289 eyes). VA was recorded in decimal Snellen. The current correction method (spectacles, soft toric, rigid gas-permeable [RGP], or scleral lenses) and prior CXL were documented. Eyes were staged using Amsler–Krumeich criteria and compared across stages.

**Results:** Stage distribution was: stage 1, 52.6% (152 eyes); stage 2, 29.1% (84); stage 3, 11.4%( 33); stage 4, 6.9% (20). VA declined with advancing stage: UCVA 0.61±0.33 to 0.14±0.18 ($p<0.001$); spectacles 0.85±0.21 to 0.21±0.20 ($p<0.001$); contact lenses 0.91±0.16 to 0.73±0.29 ($p=0.023$). Spectacle benefit was mainly in stages 1–2, whereas contact lenses provided higher VA than spectacles at all stages. Spectacle use was most common in stages 1 (45.4%) and 2 (48.8%); soft toric lenses were used only in stage 1 (4%). From stage 3 to stage 4, scleral lens use increased from 15.2% to 50%, and RGP lens use from 3% to 25%. CXL was performed in 32.9% (95/289) eyes, most commonly in stage 2 (44%) and stage 3 (45%), reaching 45.5% in stage 4 ($p=0.001$).

**Conclusion:** Stage-specific correction strategies are important for visual rehabilitation. Soft toric lenses may be adequate in early disease, whereas RGP and especially scleral lenses offer better correction of irregular astigmatism in advanced keratoconus; in our stage 4 cases, high VA achieved with scleral lenses allowed postponement of planned surgical intervention. CXL in progression-prone mid-stages may help slow disease course and support long-term visual outcomes.

28 - Withdrawn

29 - Withdrawn

30- Withdrawn

## 31 Tear MMP-9 Changes After Corneal Cross-Linking in Patients with Keratoconus

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**Objective:** To evaluate tear matrix metalloproteinase-9 (MMP-9) levels in keratoconus (KC) patients after accelerated corneal cross-linking (A-CXL).

**Methods:** This prospective study included 21 eyes of 21 KC patients who underwent epi-off A-CXL with 9 mW/cm$^2$ UVA irradiation. Tear samples were collected preoperatively and at postoperative months 3 and 6 using Schirmer strips. MMP-9 was quantified by ELISA. Corneal tomography parameters (K1, K2, Kmean, Kmax, and thinnest corneal thickness [TCT]) were recorded at each visit. Ocular surface assessment included the Ocular Surface Disease Index (OSDI) and noninvasive tear break-up time (NI-BUT).

**Results:** The mean age was 23.7±3.0 years; 7 patients were female (33.3%) and 14 were male (66.7%). KC stages were stage 1 in 4.8% (n=1) of eyes, stage 2 in 38.1% (n=8) of eyes, stage 3 in 9.5% (n=2) of eyes, and stage 4 in 47.6% (n=10) of eyes. The median tear MMP-9 levels were 21.84 ng/ml (IQR 11.95–68.91) preoperatively, 19.56 ng/ml (IQR 8.31–31.99) at month 3, and 14.52 ng/ml (IQR 3.39–27.04) at month 6. MMP-9 did not differ at month 3 compared with preoperative values (p=0.161) but was significantly lower at month 6 (p=0.010). K2, Kmean, and Kmax decreased at month 6 compared to baseline. TCT decreased at month 3 but was similar to preoperative values at month 6. OSDI scores and NI-BUT values improved after A-CXL.

**Conclusions:** Tear MMP-9, an inflammatory biomarker, was reduced at 6 months after A-CXL. Additionally, there was an improvement in ocular surface symptoms, increased tear film stability, and corneal flattening.

## 32 Visual Function and Optical Quality During Scleral Lens Wear in Eyes with Keratoconus

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Purpose: To evaluate the impact of scleral lenses (SLs) on higher-order aberrations (HOAs), corrected distance visual acuity (CDVA), and contrast sensitivity (CS) in eyes with keratoconus.

Methods: Twenty-six keratoconic eyes were fitted with SLs. Keratometric parameters were obtained using Scheimpflug tomography. CDVA (logMAR) and CS (Pelli–Robson) were measured prior to SL wear and after 30 minutes, 4 hours, and 8 hours of SL wear. HOAs (the root mean square [RMS] of HOAs, coma, trefoil, and spherical aberration) and point spread function (PSF) were recorded using Sirius corneal tomography with the SL on-eye at each time point. Fluid reservoir (FR) thickness was measured with anterior segment optical coherence tomography (AS-OCT) at each visit.

Results: The mean age was 23.0 ± 6.6 years. Mean keratometry values were: K1; 48.39± .01 D, K2; 53.20±4.83 D, Km; 50.59±3.97 D, and Kmax; 58.23±5.10 D. Baseline CDVA was 0.44±0.23 logMAR and baseline CS was 0.52±0.21. CDVA and CS improved, and remained stable at all post-wear time points. FR thickness decreased over time (30 min: 308.96±46.75 µm; 4 hours: 237.26±58.07 µm; 8 hours: 191.70±39.71 µm). At 30 min, total HOA-RMS, coma, and trefoil decreased compared with baseline, PSF improved, and spherical aberration did not change. HOAs and PSF measurements at 4 and 8 hours were comparable to the 30-min values.

Conclusion: SL wear improved visual performance in keratoconic eyes. Optical quality remained stable over 8 hours of SL wear, with reduced HOAs.

## 33 Clinical Outcomes of Sub400 Protocol and Contact Lens–Assisted Corneal Cross-Linking in Keratoconus with Thin Corneas

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**Objective:** To compare the clinical outcomes of the sub400 protocol and contact lens–assisted corneal cross-linking (CACXL) in keratoconus patients with thin corneas.

**Methods:** This retrospective study included keratoconus eyes with an intraoperative pachymetry <400µm; 18 eyes treated with CACXL and 23 eyes treated with the Sub400 protocol. In the Sub400 group, CXL was performed using an individualized fluence approach with UVA irradiation at 3 mW/cm$^2$. In the CACXL group, a riboflavin-soaked soft contact lens was applied to increase intraoperative pachymetry above 400 µm, followed by accelerated UVA irradiation at 9 mW/cm$^2$ for 10 minutes. Tomographic parameters (K1, K2, Kmean, Kmax, thinnest corneal thickness [TCT]) and best corrected visual acuity (BCVA) were recorded preoperatively and at the a 2-year follow-up. Progression was defined as a ≥1.0 D increase in Kmax; regression as a ≥1.0 D decrease; and changes <1.0 D indicated stability.

**Results:** The mean age was 19.8± .5 years in the CACXL group and 21.52±5.1 years in the Sub400 group (p=0.297). At 2 years, the Sub400 group showed significant reductions in K2, Kmean, and Kmax with a significant improvement in BCVA, while K1 and TCT did not change. In the CACXL group, K1, K2, Kmean, and Kmax decreased significantly at 2 years, whereas BCVA and TCT remained stable. The change in Kmax was similar between groups (2.60±3.43 D in Sub400 vs 2.29±3.43 D in CACXL; p=0.955). In the Sub400 group, 12 eyes (52.2%) showed regression and 11 eyes (47.8%) remained stable. In the CACXL group, 11 eyes (61.1%) showed regression, 6 eyes (33.3%) remained stable, and 1 eye (5.6%) progressed. No complications were observed in either group.

**Conclusion:** In keratoconus eyes with thin corneas, both the Sub400 protocol and CACXL achieved comparable stabilization at 2-year follow-up, with no observed complications.

## 34 Meibomian Gland Alterations in Keratoconus Patients After Corneal Cross-Linking

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**Objective:** To evaluate the changes in the meibomian glands (MGs) and ocular surface parameters after corneal cross-linking (CXL) in keratoconus patients.

**Methods:** Forty-eight eyes of 48 keratoconus patients that underwent epi-off CXL were included in this prospective study. Upper and lower lid MGs were assessed with non-contact meibography at preoperatively, 1st, 3rd, 6th, and 12th month after CXL. Uncorrected distance visual acuity (UCVA), corrected distance visual acuity (BCVA), spherical equivalent (SE), and corneal tomography findings (K1, K2, Kmean, and Kmax) were recorded at each visit. Ocular surface staining score (Oxford grade), ocular surface disease index (OSDI) questionnaire, and non-invasive tear break-up time (NI-TBUT) were evaluated at preoperatively and 12 months after CXL.

**Results:** K1, K2, Kmean, and Kmax were decreased at post-operative 12th month compared to baseline (p=0.004, p<0.001, p<0.001, and p<0.001, respectively). UCVA, BCVA, and SE did not change between preoperatively and post- operative 12 months (p=0.142, p=0.306, and p=1.000, respectively). NI-TBUT showed similarity between pre-operative and 12 months values (p=0.180), while OSDI scores significantly decreased (p<0.001). MG loss in the upper and lower lids did not show significant difference compared to pre-operative values at any of the follow-up visits (p=0.121 and p=0.117, respectively).

**Conclusion:** CXL treatment did not significantly affect the NI-TBUT and MGs morphology, while improving ocular symptoms.

## 35 Ocular Surface's Oriented Management of Persistent Epithelial Defect After Penetrating Keratoplasty in Steven's Johnson Syndrome

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**Aim:** To evaluate the role of intensive ocular surface–oriented management in achieving epithelial healing following penetrating keratoplasty (PK) in a patient with Stevens–Johnson syndrome (SJS) and chronic ocular surface disease.

**Methods:** A long-term case of indomethacin-induced SJS, followed since 2001, is presented. The patient experienced severe bilateral cicatricial keratoconjunctivitis, recurrent epithelial defects, corneal thinning, and neovascularization despite conservative therapy, including bandage and piggyback contact lenses. Due to progressive visual loss and cataract formation, combined Penetrating Keratoplasty (PK) and cataract extraction were performed. Postoperatively, a descemetocele with impending perforation required a repeat PK. Following the second PK, a persistent inferior epithelial defect developed, unresponsive to standard treatments, including amniotic membrane. A comprehensive management approach was initiated, involving cessation of corticosteroids, hourly autologous serum drops, soft contact lenses, tarsorrhaphy, and two botulinum toxin injections.

**Results:** Complete epithelial closure was achieved after the second botulinum toxin injection. Initial epithelial irregularity improved with gradual remodeling after cautious corticosteroid reintroduction. Visual rehabilitation with a mini-scleral lens resulted in best-corrected visual acuity of 0.8, and the ocular surface remained stable without further epithelial breakdown.

**Conclusion:** In SJS patients undergoing PK, epithelial healing is critical for surgical success. This case highlights that individualized, surface-oriented management can promote epithelial closure and visual rehabilitation, even in eyes at risk for keratoprosthesis.

## 36 Impact of TNF inhibitors and Biologic Therapy on Mortality rate in Patients with Rheumatoid-Arthritis-Associated Corneal Ulceration (RACU)

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**Introduction:** Rheumatoid arthritis (RA) is the most prevalent autoimmune disease associated with destructive corneal tissue damage. This condition often results in peripheral ulcerative keratitis (PUK), which may progress to corneal melting, perforation, and subsequent visual loss. Patients with RA-associated corneal complications experience a substantially increased mortality rate, with reports indicating up to 80% mortality within five years. The introduction of biological therapies for RA, including TNF-alpha inhibitors, has led to significant improvements in visual outcomes. However, the effect of these therapies on overall mortality remains uncertain.

**Methods:** A retrospective case note review was conducted for patients with rheumatoid arthritis–associated corneal ulceration treated with or without TNF inhibitors or other biologic therapies at Southampton General Hospital between 2005 and 2025. Data collected included demographic characteristics, RA disease features, visual outcomes before and after treatment, rates of ocular perforation and surgical interventions, duration of follow-up, and causes of mortality.

**Results:** The observed mortality rate will be compared with published outcomes, which have reported a 42% mortality rate over a five-year period. Kaplan-Meier survival analysis of mortality outcomes from the Southampton RACU cohort treated with biologic therapy will be presented and compared with existing data.

**Summary:** Visual outcomes in RACU have significantly improved with the use of biologic therapy for rheumatoid arthritis. This study will provide mortality and vision data for patients treated with biologic or TNF inhibitor therapy and compare these outcomes with those of patients receiving non-biologic therapy.

37 - Withdrawn

38 - Withdrawn

## 40 Ocular Surface Disease Incidence in Diabetic and Glaucoma Patients as Potential Contact Lens Users

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**Objective:** Ocular Surface Disease incidence analysis in diabetic and open angle glaucoma (OAG) patients on topical medical therapy as potential contact lens users.

**Introduction:** Ocular Surface Disease(OSD)(DEWS 2007) is multifactorial disease of tears and ocular surface that results in symptoms of discomfort, visual disturbances, tear film instability and damage, increased tear film osmolarity and inflammation.

**Classification:** Hyposecretory (Sy Sjögren's /non- Sjögren's) and evaporative form (extrinsic/intrinsic). Delphi panel grade classification in stages: I (TBUT>15s), II (IIa= 10-15s;IIb=5-10s), III grade (TBUT < 5s).OSD occurs due to multifactorial etiology (drugs, contact lenses, eye and systemic diseases, surgery, trauma). Antiglaucoma drops cause exacerbation/occurrence of dry eye symptoms due to main substances or preservatives(benzalkonium), dose/time dependent. Diabetes causes reduced tear production and tear film instability.

**Methods:** TBUT test of tear film stability and Delphi Panel grading scale in diabetic and glaucoma patients in health center and eye clinic were SPSS18 statistic analysed

**Results:**40 open angle glaucoma (OAG) eyes with preservatives drops (group1), 40 OAG eyes without preservatives drops (group2), 40 healthy eyes (group3), 547 diabetic eyes(group4) showed: Group1: grade I (TBUT>15s) in 34eyes (75%), gradeIIa in 4 eyes (10%). Group 2: 15 eyes (37,5%) in I and IIb grade, 10 eyes (25%) IIa (TBUT 10-15s). Group 3: 32 eyes(80%) I grade, 12,5%in IIb. Group 4: diabetic 164 (30%) in IIa, 301(55%) in IIb, 82 (15%) III grade. Instable tear film was in diabetic patients (55%) and glaucoma eyes on antiglaucoma preservative drops (37,5%). Grade I in healthy 80% and without preservatives 75%.

**Conclusion:** OSD impacts on contact lens fitting, visual acuity. To improve the quality of life (compliance) it is necessary to correct OSD parameters, apply artificial tears, ask them for diseases. Higher prevalence:glaucoma (37,5%) and diabetes (55%).

**41 , 42**– Withdrawn

## 43 Levels of Inflammatory Proteins in the Tear Film in Patients with Keratoconus and Dry Eye

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**Introduction:** Architectural and histopathological changes in the cornea of patients with keratoconus cause increased tear film instability, with more than half of these patients presenting symptoms of dry eye.

**Objectives:** To analyze proteins in the tear film and correlate their values with parameters characteristic of dry eye syndrome in patients with keratoconus.

**Material & Method:** The Ocular Surface Disease Index (OSDI), Schirmer test, tear film breakup time (BUT), and levels of total protein, serum albumin, lactoferrin, interleukins IL -10, 6, and tumor necrosis factor (TNF) α levels were evaluated in 18 patients with keratoconus and 18 normal subjects. Protein concentrations were determined using the ELISA or x Map method.

**Results:** Patients with keratoconus had a significantly higher OSDI score of 29.32±13.78 and a significantly lower BUT value (5.27±3.64s) compared to normal subjects, who had values of 15.77±9.99 and 11.46±2.36s, respectively. These parameters correlate with high albumin levels, which in cases with severe dry eye symptoms are twice as high (9.36 ± 5.9 µg/ml) compared to moderate or mild syndrome. Also, patients with keratoconus have low levels of lactoferrin and high levels of inflammatory cytokines in comparison with the control group.

**Conclusions:** Tear film analysis provides information about the health of the ocular surface. Protein levels may be a marker of the inflammatory status of the ocular surface in keratoconus. Albumin and lactoferrin concentrations in the tear film are correlated with those of cytokines. This study was carried out within the project PN-III-P2-2.1-PED-2016-0187, financed by CNCS-UEFISCDI Romania.

## 44 Efficacy of Scleral Contact Lenses in Keratoconus: Clinical Parameters and Visual Outcomes

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**Introduction and Objective:** The aim of this study is to analyze clinical parameters and visual outcomes of scleral contact lenses in patients with keratoconus.

**Methods:** Patients who were followed up at the Izmir City Hospital Contact Lens Unit and who applied scleral lenses between October 2023 and December 2024 were included. Cases with a history of ocular surgery other than CXL, cases with different brands of scleral lenses, and cases that would not benefit from scleral lenses were excluded. 53 eyes of 36 keratoconus patients were examined. Best-corrected visual acuity (BCVA), biomicroscopic examination, and corneal tomographic analysis were performed during the clinical evaluation. Misa scleral lens application was performed in all cases.

**Results:** 20 male and 16 female patients were evaluated in the study (mean age: 37.18 years; age range: 22-55). In visual acuity measurements, uncorrected visual acuities increased from 0.89±0.46 LogMAR to 0.1±0.1 LogMAR after scleral lens implantation ($p<0.001$). Optimal lens parameters were determined as follows: a base curve of 7.8 mm, diameters of 16.5 and 17.0 mm, and a vault range of 325-450 microns. Of the 36 patients included in the treatment program, 12 (15 eyes) were able to obtain scleral contact lenses.

**Conclusion:** Scleral contact lenses provide an effective treatment option for visual rehabilitation in keratoconus patients and may postpone the need for corneal transplantation in advanced cases. However, the high cost of these lenses is considered an important factor restricting access to treatment, especially in developing countries.

## 45 Exceptional Outcome with Scleral Lenses in a Challenging Refractive Keratotomy Case

**Mukaddes Damla Ciftci**

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**Objective:** To demonstrate successful visual rehabilitation using a scleral lens in a patient with history of refractive keratotomy.

**Methods:** Case Presentation.

**Case Presentation:** A 51-year-old male patient with a history of radial and arcuate keratotomy for high myopia and astigmatism, who subsequently developed corneal ectasia with associated irregular astigmatism, presented to our clinic for visual rehabilitation. Visual acuity was 0.1 in both eyes, and anterior segment evaluation revealed bilateral radial and arcuate keratotomy scars. Sirius corneal tomography of both eyes demonstrated paracentral steepening and irregular astigmatism. As satisfactory visual improvement could not be achieved with spectacles or other contact lens modalities, an ICD Flexfit scleral lens with a diameter of 16.3 mm, base curve radius of 8.05 mm, power of −0.75 diopters, and a sagittal vault of 4200 µm was fitted in the right eye. For the left eye, an ICD Flexfit scleral lens with a diameter of 16.3 mm, base curve radius of 8.05 mm, power of +1.50 −2.00 × 180° diopters, and a sagittal vault of 4200 µm was prescribed. Because of a nasal pinguecula in the right eye, a notch was created in the 10–340° quadrant of the lens to achieve optimal ocular surface alignment. The optimal vault heights were verified by using anterior segment optical coherence tomography (AS-OCT). After scleral lens application, best-corrected visual acuity increased to 0.9 in both eyes.

**Conclusion:** Scleral contact lenses represent an important option for visual rehabilitation for patients with irregular astigmatism. In this patient unresponsive to alternative modalities, scleral lenses provided significant visual rehabilitation and restored functional daily life. With adequate chair time, and individualized lens modifications, scleral lens fitting can yield successful outcomes.

## 46 Novel anti-glaucoma eye drops improving ocular surface in a mouse model

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**Purpose:** To investigate the effect of a novel 0.18% sodium hyaluronate(HA) +travoprost eye drop on tear functions and ocular surface status in a mouse dry eye model compared to commercial travoprost eye drops

**Methods:** 27 8-week-old C57BL/6 female mice were randomly divided into 4 groups as:

- Group 1(n=6): Wind exposure group'
- Group 2 (n=7): 0.18% HA+travoprost eye drop once a day '
- Group 3 (n=7): Control group ( no wind, no treatment) '
- Group 4 (n=7): Commercial Travoprost eye drop once a day.

Groups 1, 2 and 4 received 5 hrs of wind exposure for 5 days. Eye drops were instilled from day 0 for 2 weeks. Tear break up time, fluorescein staining and phenol red test were done at baseline and 2 weeks.

**Results:** Wind exposure produced a significant decline in tear stability and an increase in staining scores in Group 1 (p=0.0001). The new eye drop was associated with significantly better tear stability and better staining scores compared to commercial Travoprost (p=0.0001).

**Conclusion:** After two weeks of treatment, the new anti-glaucoma eye drop improved signs of dry eye disease (tear stability, corneal epithelium damage) in the current mouse model, when compared to commercial Travoprost.

## 47 Therapeutic Scleral Lens for Severe Neurotrophic Keratopathy and Persistent Dry Eye Following Complicated Cataract Surgery

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**Objective:** To report two cases of treatment-resistant neurotrophic keratopathy after complicated cataract surgery successfully managed with therapeutic scleral lenses.

**Background:** Complicated cataract surgery with prolonged ultrasound energy or multiple interventions can cause severe corneal nerve damage. When conventional treatments fail, scleral lenses provide continuous corneal hydration through a pre-corneal fluid reservoir, consistent with TFOS DEWS management recommendations.

**Case Series:**

- Case 1: A 69-year-old female developed persistent epithelial defect with neurotrophic keratopathy (Mackie stage 2) after prolonged phacoemulsification for brunescent nucleus. Despite 8 months of preservative-free tears, autologous serum 20%, bandage lens, and amniotic membrane transplantation, recurrent epithelial breakdown persisted (OSDI: 72, central corneal sensitivity: absent).
- Case 2: A 74-year-old diabetic male had Descemet membrane detachment requiring air injection during phacoemulsification. Chronic epithelial edema with bullous keratopathy developed (OSDI: 78, TBUT: <1 second), unresponsive to hypertonic saline, cyclosporine 0.1%, and therapeutic soft lens.

Both were fitted with mini-scleral lenses with preservative-free saline reservoir. At 3 months, complete epithelial healing was achieved. OSDI improved to 16 and 20; BCVA improved from 1.0 and 0.8 to 0.3 and 0.4 logMAR. No epithelial breakdown occurred over 9 months of wear.

**Conclusion:** Therapeutic scleral lenses effectively manage severe neurotrophic keratopathy after complicated cataract surgery, providing simultaneous corneal protection, hydration, and visual improvement when conventional therapies fail.

## 48 Beyond Traditional Methods: Solving Soft Contact Lens Intolerance in a Demanding Patient through Orthokeratology and Precision Maintenance

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**Purpose:** To demonstrate how a specialized maintenance protocol can overcome initial dissatisfaction and severe soft contact lens (SCL) intolerance in a highly demanding patient, providing a reliable non-surgical alternative.

**Methods:** A 28-year-old physician with an A-type personality sought a solution after failing with every available SCL material due to extreme discomfort and dryness. High dk/t (180) NightFlex lenses were prescribed. Despite early success, the patient initially experienced minor visual shadows and mild discomfort, threatening long-term use. To ensure success, a "Double-BSS Rinsing" protocol was implemented: 1) Ocular surface lubrication with preservative-free hyaluronate exactly one minute before insertion, 2) Rinsing the lens with a pressurized BSS cannula both immediately before insertion and immediately after removal. This pressurized technique eliminated the need for mechanical rubbing, protecting the lens surface and ensuring maximum oxygen flux.

**Results:** The minor visual disturbances resolved as the ocular surface stabilized. By the first month, the patient achieved complete comfort. At 7 months, uncorrected visual acuity reached 1.0 binocularly. NIBUT improved from 9 to 17 seconds. The pressurized BSS rinsing effectively prevented protein buildup and inflammatory triggers, satisfying the patient's high clinical expectations.

**Conclusions:** In patients where all SCL materials fail, Ortho-K is a psychological and physiological breakthrough. This case highlights that standardized maintenance—specifically pressurized BSS rinsing before and after use—is a vital topic for verbal discussion to bridge the gap between initial adaptation and total patient satisfaction.

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49 – withdrawn, 50 – withdrawn

## 51 Impact of Dry Eye Disease on Keratometric Measurements and Intraocular Lens Power Calculations

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**Aim:** To evaluate the impact of dry eye disease (DED) on intraocular lens (IOL) power and toric axis calculations based on biometric measurements in patients undergoing cataract surgery.

**Method:** This retrospective study included 37 patients (37 eyes) undergoing cataract surgery. All eyes underwent optical biometry using the IOLMaster 700 and comprehensive ocular surface evaluation, including tear break up time (TBUT), non-invasive tear break up time (NIBUT), Schirmer tear test, corneal staining, and OSDI. Patients diagnosed with DED received severity-based treatment. Measurements were repeated after treatment (17.4±13.9 days; range, 2–54 days) before final IOL selection. IOL power calculations were performed using the EVO, Kane, and Hoffer formulas on the European Society of Cataract and Refractive Surgeons (ESCRS) IOL Calculation platform.

**Results:** The mean OSDI scores (p=0.014) and corneal staining scores (p=0.046) were significantly improved after treatment. IOL power calculations remained largely stable; differences ≥0.50 D were observed in 35–46% of eyes, whereas larger deviations (≥1.00 D) were uncommon, occurring in only 2.7–5.4% of cases. In contrast, toric IOL axis measurements demonstrated substantial variability. Axis deviations ≥5° were observed in 59.5%, 54.1%, and 59.5% of eyes, and deviations ≥10° in 24.3%, 27.0%, and 40.5% for the Hoffer, Kane, and EVO formulas, respectively.

**Conclusion:** Dry eye disease seems to affect toric axis measurements primarily rather than the IOL power magnitude. In these patients optimization of the tear film and OS prior cataract surgery would improve accuracy of IOL power calculations and toric IOL axis alignment.

## 52 Early Corneal Healing Responses Following Corneal Collagen Crosslinking in Keratoconic Eyes with Comorbidities

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**Aim:** To evaluate the impact of preoperative ocular surface (OS) inflammatory comorbidities on postoperative epithelial healing responses following epithelium-off corneal collagen crosslinking (CXL) in eyes with progressive keratoconus.

**Method:** This retrospective study included 147 eyes of 104 patients undergoing epithelium-off CXL. Fifty-five eyes of 36 patients had OS inflammatory disease (allergic conjunctivitis, ocular rosacea, atopic conjunctivitis, or vernal keratoconjunctivitis), while 92 eyes of 68 patients with no OS comorbidities served as controls. Eyes with OS inflammatory disease received appropriate preoperative medical treatment to optimize the OS before CXL. After stabilization, preoperative OS assessments including break-up time (BUT), noninvasive break-up time (NIBUT), Schirmer tear test, corneal staining, OSDI scores, and meibography were recorded. Postoperative epithelial closure time and haze gradings were subsequently evaluated. Group comparisons were performed using nonparametric and chi-square tests.

**Results:** Preoperatively, all baseline OS parameters were comparable between groups, with no statistically significant differences. Postoperatively, haze gradings between the groups did not differ significantly whereas delayed epithelial closure (>3 days) was more frequent in eyes with OS inflammatory disease compared to controls (p = 0.011). Subgroup analysis revealed that this difference was primarily driven by the vernal keratoconjunctivitis subgroup (41.2% vs 9.8% in controls, p=0.021), whereas epithelial closure among remaining subgroups did not differ significantly.

**Conclusion:** Preoperative OS inflammation, particularly vernal keratoconjunctivitis, is associated with longer epithelial recovery after corneal collagen cross-linking despite optimization of OS before surgery. Careful assessment and management of the OS may improve postoperative outcomes following corneal CXL.

## 53 Effect Of Orthokeratology Lens On Myopia Control in Children With Anisometropia

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**Purpose:** To investigate the effect of orthokeratology (OK) lens on axial length (AL) elongation in unilateral myopia and bilateral myopia with anisometropia children.

**Methods:** Twenty-seven unilateral myopia (group 1) and 25 bilateral myopia with anisometropia children (group 2) were involved in this 1-year retrospective study. The eyes with higher spherical equivalent refractive error (SER) were assigned to the H eyes subgroup and the fellow eyes with lower SER to the L eyes subgroup in the two groups.

**Results:** The mean change in AL of H eyes and L eyes were 0.11±0.19 mm, 0.30±0.28 mm in group 1 (p=0.04) and 0.09±0.14 mm, 0.13±0.16 mm in group 2 (p=0.36), respectively. Multivariate regression analyses showed that significant difference of change in AL was found between H eyes and L eyes in group1 (β=0.25, p=0.03), but no difference in group 2 (β=0.09, p=0.12). The AL of H eyes in group 1 and group 2, H eyes in group 1 and L eyes in group 2 had the same increased rate (β= -0.04, p=0.43; β= 0.02, p=0.56).

**Conclusions:** Monocular OK lens is effective on suppression AL elongation of the myopic eyes and reduce anisometropia value in unilateral myopic children. The OK lens can control the AL elongation in both eyes at the same rate, but it cannot reduce anisometropia value in bilateral myopia with anisometropia children after 1-year follow-up.

## 54 Six-Month Safety and Clinical Performance of Abiliti Myopia Control Soft Contact Lenses in Children: A Real-World Study

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**Purpose:** To evaluate the 6-month safety and clinical performance of Abiliti myopia control soft contact lenses in children in a prospective, single-arm real-world study.

**Methods:** This prospective, single-center study was conducted at Medipol Mega Hospital and included 32 children aged 8–14 years fitted with Abiliti myopia control soft contact lenses. Participants were examined at baseline, 1 week, 1 month, and 6 months. Axial length (AL) was measured using the Myopia Master, and refractive error was assessed by cycloplegic autorefraction. Distance visual acuity (VA) was recorded in logMAR units. Ocular adverse events were monitored throughout follow-up. Changes from baseline at 6 months were summarized as mean ± standard deviation.

**Results:** At the 6-month follow-up, the mean (SD) change in axial length from baseline was 0.07 ± 0.12 mm, and the mean (SD) change in cycloplegic spherical equivalent refraction was –0.11 ± 0.25 D. Distance visual acuity remained stable over the study period. No serious or clinically significant ocular adverse events were observed.

**Conclusions:** In this 6-month real-world study of children aged 8–14 years, Abiliti myopia control soft contact lenses demonstrated good safety and stable visual performance, with low axial elongation and minimal refractive progression. These findings support the short-term clinical performance of Abiliti lenses for pediatric myopia control.

## 55 Acute Ocular Surface and Blink Behaviour Effects of a Non-Coaxial Ring-Focus Myopia Control Soft Contact Lens in Children

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**Purpose:** To evaluate the acute effects of a non-coaxial ring-focus design soft myopia control contact lens on blink behaviour, tear film stability, and ocular surface protection in myopic children using a non-invasive ocular surface analysis system.

**Methods:** This prospective, within-subject study included 28 myopic children aged 8–13 years. The right eye of each participant was analyzed. Blink behaviour and tear film parameters were assessed under lens-free conditions and after short-term wear of a non-coaxial ring-focus design soft contact lens using the MYAH device. Outcome measures included blink rate, mean blink duration, inter-blink interval, non-invasive tear break-up time (NI-TBUT), tear meniscus height (TMH), and ocular protection index (OPI).

**Results:** The mean age of participants was 10.5±1.5 years, and mean spherical equivalent refraction was −2.55±0.85 D. Blink rate, mean blink duration, and inter-blink interval did not differ significantly between lens-free and lens-on conditions (all $p>0.05$). Tear film stability, assessed by NI-TBUT, and TMH remained unchanged following short-term lens wear. Ocular surface protection, evaluated by OPI, showed no significant difference between conditions ($p=0.58$), with mean OPI values remaining above the threshold indicative of adequate ocular surface protection.

**Conclusions:** Short-term wear of a non-coaxial ring-focus design soft myopia control contact lens did not induce significant changes in blink dynamics, tear film stability, or ocular surface protection in myopic children. These findings suggest that acute use of this optical design is well tolerated from an ocular surface and blink behaviour perspective.

56- Withdrawn

57- Withdrawn

## 58 Comparative Evaluation of Corneal Stromal Demarcation Line Following Accelerated Corneal Collagen Crosslinking Protocols Using Different Riboflavin Formulations and Soaking Durations

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**Summary:** Although corneal crosslinking (CXL) is the only treatment in halting the progression of keratoconus, the optimal riboflavin formulation and soaking duration for accelerated CXL (ACXL) protocols remain unknown. This prospective study aimed to compare the effects of different riboflavin formulations and soaking durations on demarcation line depth (DLD) measured by anterior segment optical coherence tomography (AS-OCT) following ACXL in keratoconic eyes.

Patients were randomly assigned into four groups (n=26 for each group): Group 1 received hydroxypropyl methylcellulose (HPMC)-based riboflavin solution for 10 minutes, Group 2 received HPMC-based riboflavin solution for 20 minutes, Group 3 received 0.1% dextran-based riboflavin solution for 30 minutes, and Group 4 underwent standard protocol. In all ACXL groups, following soaking of the cornea using riboflavin, UVA irradiation was applied at 9 $mW/cm^2$ for 10 minutes. The DLD, visual, refractive, keratometric, tomographic, and aberrometric outcomes were evaluated at postoperative month-1 and -12. At month-1, the DLD was similar in Groups 1, 2, and 4, whereas Group 3 demonstrated a significantly shallower DLD ($p < 0.01$). Despite the presence of structural variations within crosslinked corneas, no significant differences were observed among the groups in terms of visual acuity, refractive, keratometric, tomographic, or aberrometric outcomes at month-12. Endothelial cell counts remained stable, and no sight-threatening adverse events were noted during the follow-up period.

Our findings suggest that clinical outcomes of ACXL using HPMC-based riboflavin solution for 10 or 20 minutes compare favorably to standard CXL.

## 59 Resistant Pseudomonas Aeruginosa Keratitis in a Contact Lens Wearer: A Case Report

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**Objective:** To present a case of keratitis caused by a multidrug-resistant strain of Pseudomonas aeruginosa in a contact lens wearer. **Introduction:** Keratitis is one of the most serious complications associated with contact lens use. Risk factors include prolonged lens wear, poor hygiene, exposure to water, sleeping with contact lenses, and unsupervised use of topical corticosteroids, which may worsen infection and delay appropriate treatment.

**Methods:** This is a case report of a 21-year-old female contact lens wearer who presented with acute keratitis. Clinical examination, corneal scraping, and microbiological analysis were performed. The patient was treated with intensive topical and systemic antimicrobial therapy, adjusted according to clinical response and microbiological results.

**Results:** The patient presented with eyelid edema, conjunctival hyperemia, and severe pain in the right eye. Best corrected visual acuity in the affected eye was 0.1 at presentation. Microbiological analysis revealed a resistant strain of Pseudomonas aeruginosa. Despite initial empirical therapy, clinical deterioration occurred, requiring multiple modifications of antimicrobial treatment. After several weeks of intensive topical and systemic antimicrobial therapy, topical corticosteroid treatment was initiated. The patient was hospitalized for seven weeks and discharged with improved visual acuity of 0.3, with continued scheduled follow-up visits.

**Conclusion:** Keratitis caused by multidrug-resistant Pseudomonas aeruginosa represents a major therapeutic challenge in contact lens wearers and may result in significant visual impairment. Strict adherence to contact lens hygiene and avoidance of unsupervised corticosteroid use are essential for prevention.

## 60 Primary Mucinous Carcinoma Of The Eyelid Mimicking Recurrent Chalazion: A Diagnostic Challenge

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**Introduction:** Primary mucinous carcinoma (PMC) of the eyelid is an exceptionally rare, low-grade malignancy arising from eccrine sweat glands, with fewer than 150 cases reported worldwide. Its indolent presentation frequently mimics benign lesions, leading to diagnostic delays. We report a case of PMC initially misdiagnosed as recurrent chalazion, highlighting the critical role of histopathological evaluation and immunohistochemical analysis in distinguishing primary from metastatic mucinous adenocarcinoma.

**Methods:** A 68-year-old female presented with a slowly progressive, painless, gelatinous nodule on the left lower eyelid persisting for 18 months. The patient had undergone two previous incision and curettage procedures for presumed chalazion, with recurrence within 3-6 months. Examination revealed a 12×8 mm, well-circumscribed, pinkish-tan nodule at the medial lower eyelid. Wide local excision with 5mm margins was performed, followed by histopathological examination with extensive immunohistochemistry panel and systemic workup including PET-CT and mammography.

**Results:** Histopathology revealed epithelial cell islands floating in abundant extracellular mucin pools. Immunohistochemistry demonstrated positivity for CK7, GCDFP-15, estrogen receptor, progesterone receptor, and p63, with negativity for CK20 and CDX2, supporting primary cutaneous origin. PET-CT and mammography excluded occult malignancy. Margins were clear. Reconstruction using Tenzel semicircular rotation flap achieved excellent functional and cosmetic outcomes. At 18-month follow-up, no recurrence or metastasis was detected.

**Conclusions:** PMC can masquerade as benign eyelid lesions. Recurrent chalazion unresponsive to conventional treatment warrants excisional biopsy with histopathological examination. Comprehensive immunohistochemistry is essential to differentiate primary from metastatic mucinous carcinoma, excluding breast and gastrointestinal origins. Complete surgical excision with clear margins remains the cornerstone of treatment.

## 61 Endocrine Mucin-Producing Sweat Gland Carcinoma of the Eyelid with Progression to Invasive Mucinous Adenocarcinoma: A Rare Entity with Breast Carcinoma Analogy

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**Introduction:** Endocrine mucin-producing sweat gland carcinoma (EMPSGC) is an exceptionally rare low-grade cutaneous neoplasm with striking predilection for the eyelids; fewer than 100 cases have been reported. EMPSGC is considered a precursor lesion that may progress to invasive mucinous adenocarcinoma, paralleling the transition from endocrine ductal carcinoma in situ to Type B invasive mucinous carcinoma of the breast. We report a case demonstrating this histopathological progression with comprehensive immunohistochemical characterization.

**Methods:** A 72-year-old male presented with a slowly enlarging, painless nodule on the left upper eyelid over 8 months. Examination revealed a firm, non-tender subcutaneous mass without ulceration. Initial impression was epidermal inclusion cyst. Surgical excision with 4mm margins was performed, followed by histopathological examination with immunohistochemistry including neuroendocrine markers. Systemic evaluation with PET-CT excluded distant primary malignancy.

**Results:** Histopathology revealed a biphasic tumor: superficial component showing solid nests and papillary structures of low-grade epithelial cells with intracytoplasmic mucin, transitioning to extracellular mucin pools containing floating tumor cell clusters in deeper tissue (invasive mucinous adenocarcinoma). Immunohistochemistry demonstrated positivity for neuroendocrine markers (chromogranin, synaptophysin) and hormone receptors (estrogen receptor, progesterone receptor); CK7 positive, CK20 negative. Margins were clear. PET-CT excluded breast or other primary malignancy. Reconstruction was performed with advancement flap. At 24-month follow-up, no recurrence or metastasis was detected.

**Conclusions:** EMPSGC represents a rare low-grade neuroendocrine carcinoma that may progress to invasive mucinous adenocarcinoma. Recognition of its dual immunophenotype (neuroendocrine and hormone receptor positivity) is essential for diagnosis. Complete excision with clear margins is curative. Long-term surveillance is recommended given potential for delayed recurrence.

## 62 Microbial Keratitis in Contact Lens Wearers: Three Different Etiologies and Strategies for Safe Return to Lens Wear

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**Objective:** To present three cases of contact lens-related microbial keratitis with different organisms and describe safe return to contact lens wear.

**Background:** Microbial keratitis is a sight-threatening complication of contact lens wear. Evidence- based guidelines on timing and modality for resuming lens use post-infection remain limited.

**Case Series:**

- Case 1: A 24-year-old male monthly silicone hydrogel wearer developed Pseudomonas aeruginosa keratitis (3 mm central infiltrate). After 6 weeks of fortified antibiotic therapy, central scarring persisted (BCVA: 0.3 logMAR). At 4 months, daily disposable lenses achieved BCVA of 0.15 logMAR.
- Case 2: A 29-year-old female biweekly lens wearer presented with Staphylococcus aureus keratitis (paracentral). Resolution within 3 weeks with fluoroquinolone monotherapy; minimal scarring allowed return to daily disposables at 3 months (BCVA: 0.0 logMAR).
- Case 3: A 35-year-old male monthly lens wearer developed Fusarium keratitis requiring 8 weeks of natamycin and voriconazole. Dense paracentral scar resulted in spectacle BCVA of 0.5 logMAR; scleral lens fitted at 6 months achieved 0.2 logMAR.

All three patients remained infection-free at 12-month follow-up with daily disposable or scleral lens use.

**Conclusion:** Safe return to contact lens wear after microbial keratitis is feasible with organism-specific timing: 3 months for bacterial and 6 months for fungal keratitis. Daily disposable or scleral lenses, combined with strict hygiene counselling, offer the safest post-keratitis rehabilitation options.

## 63 Predictors of Postoperative Dry Eye Disease in Refractive Surgery Patients

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**Summary:** This study aimed to evaluate preoperative dry eye disease (DED) prevalence and identify longitudinal ocular surface changes and predictors of postoperative DED following photorefractive keratectomy (PRK).

This retrospective cohort study included 179 eyes of 91 patients undergoing PRK.

Preoperative evaluation included Dry Eye Workshop II–defined DED, the Ocular Surface Disease Index, non-invasive and fluorescein tear break-up time, Schirmer testing, and meibomian gland dropout. Eyes with DED were treated before surgery and the tear film parameters of the treated eyes served as the baseline. Postoperative DED prevalence was assessed at 1, 3, and 6 months. Longitudinal changes were analyzed using linear mixed models, and predictors were evaluated using univariable analyses.

In this cohort, the preoperative DED prevalence was 41.3%. Female sex (p=0.006) and artificial tear use (p=0.017) were associated with baseline DED. Postoperative DED prevalence was recorded as 40.6% at month 1, 37.5% at month 3, and 23.8% at month 6. At month 1, female sex (p=0.009) and preoperative DED (p=0.029) were associated with postoperative DED, whereas at month 3, only preoperative DED remained significant (p=0.005). No surgical parameter, including ablation depth, residual stromal thickness, mitomycin-C duration of contact lens wear was associated with postoperative DED. Longitudinal modelling demonstrated stability in symptoms, tear film parameters, and meibomian gland dropout. Although Schirmer values declined modestly over time (p=0.016), this reduction was not accompanied by clinical or functional deterioration.

In this cohort of PRK patients, postoperative DED was primarily associated with preexisting ocular surface dysfunction, rather than surgical factors. Therefore, in refractive surgery candidates preoperative tear film and ocular surface evaluation and optimization are essential prior to surgery to optimize surgical outcomes.

## 64 Contact Lens Practice in Adolescents

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**Objective:** Soft contact lens (CL) fit in adolescents.

**Background:** The records of adolescents who demanded CL wear.

**Methods:** The records of 30 adolescents fit soft CL between September 2024-January 2026 were reviewed. All were given informed consent after a complete ophthalmological exam. Two different brands were fit for the right and left eyes. CL visual acuity (CLVA) and over refraction was checked after 30 min. Lens fit and push-up test were evaluated. If the fit and visual acuity were optimal brand choice was up to the patient. In myopic astigmatism rotation and stability affected the decision. Insertion and removal were instructed by ZO and written information was given to all. All of the youngsters practiced insertion and removal both on the trial day and the control visit within 2 weeks. CLVA was superior or equivalent to spectacle-corrected VA for all. Lens fit, adherence to lens hygiene and patient reported comfort were noted.

**Results:** 30 patients (58 eyes) were enrolled, 16 (53.3%) were female. Two patients were fit only in one eye due to severe amblyopia in the fellow eye. Mean age was 15,03±2.8 years (range: 12-17 years). Six of them had myopia, five had hyperopia, 17 had myopic astigmatism and two had hyperopic astigmatism. Three of them chose to go on with spectacles due to handling issues. The lenses were successfully worn by 52 eyes of 30 patients. Lotrafilcon was the most preferred material Mean follow-up was 10.4±3.6 months (range: 6-16) All reported stable and comfortable vision throughout the day and adhered to hygiene. No serious complications were noted.

**Conclusion:** Adolescents may demand contact lens wear for physical appearance and sports activities. Fitting is similar to adults and motive is high.

## J&J 1 Evaluation of Pupil Size and Visual Acuity in a Myopic Pediatric Population Wearing a Soft Contact Lens with Non-Coaxial Focus

Alex Nixon, Jie Xu, Augustine Nti, and Xu Cheng

**Purpose:** All soft contact lenses for myopia control are expected to impact vision to some extent. The effect on vision is design dependent, but the extent of the effect may also be influenced by interaction with the wearer's pupil size. A soft contact lens with non-coaxial focus (EE) was designed to slow myopia progression while providing good visual performance. The purpose of the analysis is to explore the impact of pupil size on low contrast logMAR visual acuity (VA) in EE wearers.

**Methods:** Previously untreated myopic children from 7-12 years were enrolled in a multi-center, randomized, controlled, double-masked, parallel arm study. The subjects were randomly assigned to wear either the EE lens or a single vision soft contact lens (SV) and monitored at 1 week, 1 month, and 3 months following lens dispensing. Exploratory analysis was conducted using a Mixed Model with Repeated Measures (MMRM) for the intention-to-treat (ITT) population to assess the impact of pupil size on photopic binocular low contrast logMAR VA.

**Results:** A total of 44 and 51 subjects completed the study in the EE and SV lens groups, respectively. The mean (±SD) pupil diameter measured was 5.8 (±0.95) mm and 6.4 (±0.99) mm for the EE and SV groups, respectively. The least-squares mean (SE) logMAR of binocular photopic low contrast distance VA at 3-month follow-up was 0.16 (0.021) and 0.07 (0.021) for the EE and SV groups, respectively. The test of fixed effects (Table 1) showed that pupil diameter was a significant fixed effect (p=0.0427), while the interaction of pupil diameter by lens group was not significant (P=0.2075). As an example, the scatterplot in Figure 1 illustrates that in both groups at the 3-month follow-up, larger pupil sizes correspond to slightly worse logMAR VA (i.e., higher logMAR score), with the regression lines for the groups appearing nearly parallel.

**Conclusions:** Study results showed a significant effect of pupil size on photopic binocular low contrast logMAR VA, however a significant interaction of pupil size and lens group was not found. Although pupil diameter is a significant factor, the variation in visual acuity for the EE lens over the range of pupil diameters was not clinically significant.

## J&J 2 Optimization of a daily disposable toric soft contact lens to meet the varying needs of patients with low versus moderate to high levels of astigmatism

Sherrill, Ryan [VISUS], Olivares, Giovanna Dr. [VISUS], Straker, Benjamin [VISUS], Franklin, Ross [VISUS], Cannon-Hill, Jessica [VISUS]

**Purpose:** While the rate of astigmatic lens fitting around the world has been increasing in recent years, toric lenses are still under-prescribed in many markets. Additionally, data on dropout rates among astigmatic patients, clinical results, and willingness to pay highlight two often conflicting opportunity areas: comfort and clear, stable vision. This study was designed to evaluate the impact of alterations in toric lens stability feature geometry on lens rotational performance and initial comfort.

**Methods:** A total of 43 non-presbyopic myopic astigmatic subjects (0.00 to -6.00 DS), with corneal plane astigmatism ≤ 3 diopters were enrolled into a double-masked, non-dispensing 4x4 crossover study. Subjects wore 4 lenses in a random order over 2 visits (2 lenses per visit). The test lenses were -3.00 -0.75 x 180 senofilcon A toric soft contact lenses with the BLINK STABILIZED Design method of stabilization, manufactured with four levels of thickness differentials (TD) in the stabilization zones, labeled TD1, TD2, TD3 and TD4 and representing a range from the smallest to the largest differential. For testing, two different test lenses were worn bilaterally in-office for ~1 hour. A washout period of at least 12 hours up to 10 days between visits was used. Lenses were assessed 1- and 3-minutes after insertion, after 15-minutes settling, and following each of two walking activity periods. Comfort was assessed using CLUE™ (Contact Lens User Experience) questionnaire after approximately 1 hour of wear.

**Results:** The eye-to-eye variations in lens orientation (standard deviation of lens orientation across eyes) at 1- and 3-minutes post insertion were highest for the lens with the lowest TD (TD1) followed in order by TD2, TD3, and TD4 (highest TD), as depicted in Figure 1A. Figure 1B shows the inverse relationship between comfort score after 1 hour and TD, in which comfort decreases as the TD increases.

**Conclusion:** These data illustrate the relationship between rotational performance, comfort and TD: rotational performance increased as the TD increased, while comfort decreased. This data suggests that creating a cylinder optimized design is warranted, perhaps within the range of TD1 to TD3. This would enable a lens designer to maximize comfort for lower levels of refractive astigmatism where larger amounts of axis misalignment may occur while still providing consistent vision. For the higher levels of cylinder power, increasing TD can minimize visual fluctuations without impacting comfort.

## J&J 3 Patient reported vision outcomes for two daily disposable toric soft contact lenses containing HEV Filters

Olivares, Giovanna Dr. [VISUS], Straker, Benjamin [VISUS], Franklin, Ross [VISUS], Sherrill, Ryan [VISUS], Cannon-Hill, Jessica [VISUS]

**Purpose:** High energy visible (HEV) light filters in contact lenses (CLs) are relatively new. Reported benefits include reduced light scatter and reduction in time to recover from glare-associated temporary loss in visual function and discomfort Currently, only two daily disposable (DD) CLs for astigmatism contain HEV filters. This work presents vision-related findings from a head-to-head study and a 6-study meta-analysis involving these 2 lenses.

**Methods:** A total of 133 non-presbyopic myopic astigmatic subjects were enrolled in a 4-visit prospective multi-site randomized double-masked controlled 2X2 crossover study of the 2 DD toric silicone hydrogel CLs: senofilcon A (senA) or delefilcon A (delA) materials. The senA features a horizontally and vertically symmetrical design with peripheral stabilization zones (Blink Stabilized design “BSD”) and the delA design is a modified prism ballast design (Precision Balance 8|4 “PB8-4”). Subjects were randomized to wear one CL pair for 7±2 days, followed by a 7±2 day washout period before the second pair wear for 7±2 days. CLs were assessed after insertion, settling, and at the follow-up visit. The CLUE™ (Contact Lens User Experience) questionnaire was used to capture subjective vision feedback at dispensing and follow-up visits. A generalized linear mixed model with a binary distribution was used with CL wear sequence, period and study/test lens included in the model as fixed effects. CL fitting, visual acuity and CL preference were assessed. An additional meta-analysis involving 6 studies (senA BSD:n=288, delA PB8-4: n=119) was performed to assess additional vision-related patient-reported outcomes. Proportion estimates and odds ratio (95% CIs) for top 2 responses were analyzed.

**Results:** In the head-to-head study, 62% of subjects preferred senA BSD for overall vision, while 18% preferred delA PB 8-4, and 20% had no preference. For computer screen and digital device use, 65% preferred senA BSD, compared to 16% for delA PB 8-4, with 19% reporting no preference. The meta-analysis show that senA BSD demonstrates statistical superiority (higher odds) over delA PB 8-4 in several patient reported vision-related outcomes: need to blink hard to clear vision (3.4x), reduction in feeling of tired eyes from using a computer/digital device (2.1x), fluctuating vision (4.0x), clarity of vision with computer screen/digital device (2.4x), clarity of vision performing activities involving head movement (2.9x), ability to see comfortably while driving at night (2.0x), eye fatigue (2.8x), clarity of vision while performing activities involving tilting head (2.9x).

**Conclusion:** senABSD demonstrated superiority over delA PB 8-4 in the tested outcomes. This reflects the advantage of an HEV-blocking toric lens with TearStable technology and a design that has been shown to be more independent of gaze and head position.

## J&J 4 Real-world safety and performance of a novel soft contact lens for myopia management in Chinese children

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**Purpose:** The safety and performance of a soft contact lens for myopia control (EE, Cheng et al. Ophthalmol Sci. 2022 Oct 18;3(1):100232) are being evaluated in Chinese children at the Aier Eye Hospital in the Boao Lecheng International Medical Tourism Pilot Zone (Hainan, China). Here we report outcomes of this real-world study after participants completed 12 months lens wear.

**Method:** This is a single-site, prospective, single-arm, open-label, real-world evidence study with a minimum of 1-year study duration. Eligible participants were followed post lens fit at 1-week, 1-, 3- and 6-months prior to completing the 12-month follow-up for evaluation of potential adverse events (AEs), vision performance, lens fit, and lens wear compliance. Further, myopia progression is evaluated at every 6 months via measuring changes in spherical equivalent cycloplegic autorefraction (SECAR by Topcon KR-1) and axial length (AL by IOLMaster 700).

**Results:** A total of 70 subjects aged 7-12 years with a mean (SD) baseline myopia of -2.21 (0.97) D were fitted with the EE lens, of which, 64 completed the 12-month follow-up. No subjects were discontinued due to unacceptable lens vision, comfort, fit or AEs. At the 12-month follow-up, mean (SD) changes from baseline in AL and SECAR were 0.09 (0.18) mm and -0.24 (0.41) D, respectively. Monocular distance visual acuity (VA) with the EE lens was 0.00 (0.05) and -0.01 (0.06) logMAR at initial lens fitting and 12-month follow-up, respectively, neither was significantly different from baseline best-sphere corrected VA (-0.01 [0.05]). Binocular distance VA at 12-months was 0.00 logMAR or better in 95.3% subjects. The mean (SD) lens wear time reported at the 12-month follow-up was 13.5 (1.8) hours/day and 6.7 (0.6) days/week. All 64 subjects had cumulative lens wear time meeting or exceeding the requirement.

**Conclusion:** The 12-month outcomes of the real-world study demonstrated excellent safety, vision and fit performance of the EE lens. Minimal axial elongation and myopia progression were observed within the 12 months of treatment (compared to an expected 0.39 mm/0.80 D progression in untreated, 10.3-year-old Asian children [Brennan et al. Optom Vis Sci. 2024;101:496–506, Nixon et al. Invest Ophthalmol Vis Sci. Vol 63, 255 – A0109]). Safety and effectiveness of the EE lens in slowing myopia progression in this cohort of Chinese children will continue to be monitored.

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## The performance of a novel daily disposable multifocal toric contact lens compared to an existing multifocal contact lens

Osae Appenteng, Eugene [VISUS], Olivares, Giovanna Dr. [VISUS], Cannon-Hill, Jessica [VISUS], Karkkainen, Thomas [VISUS]

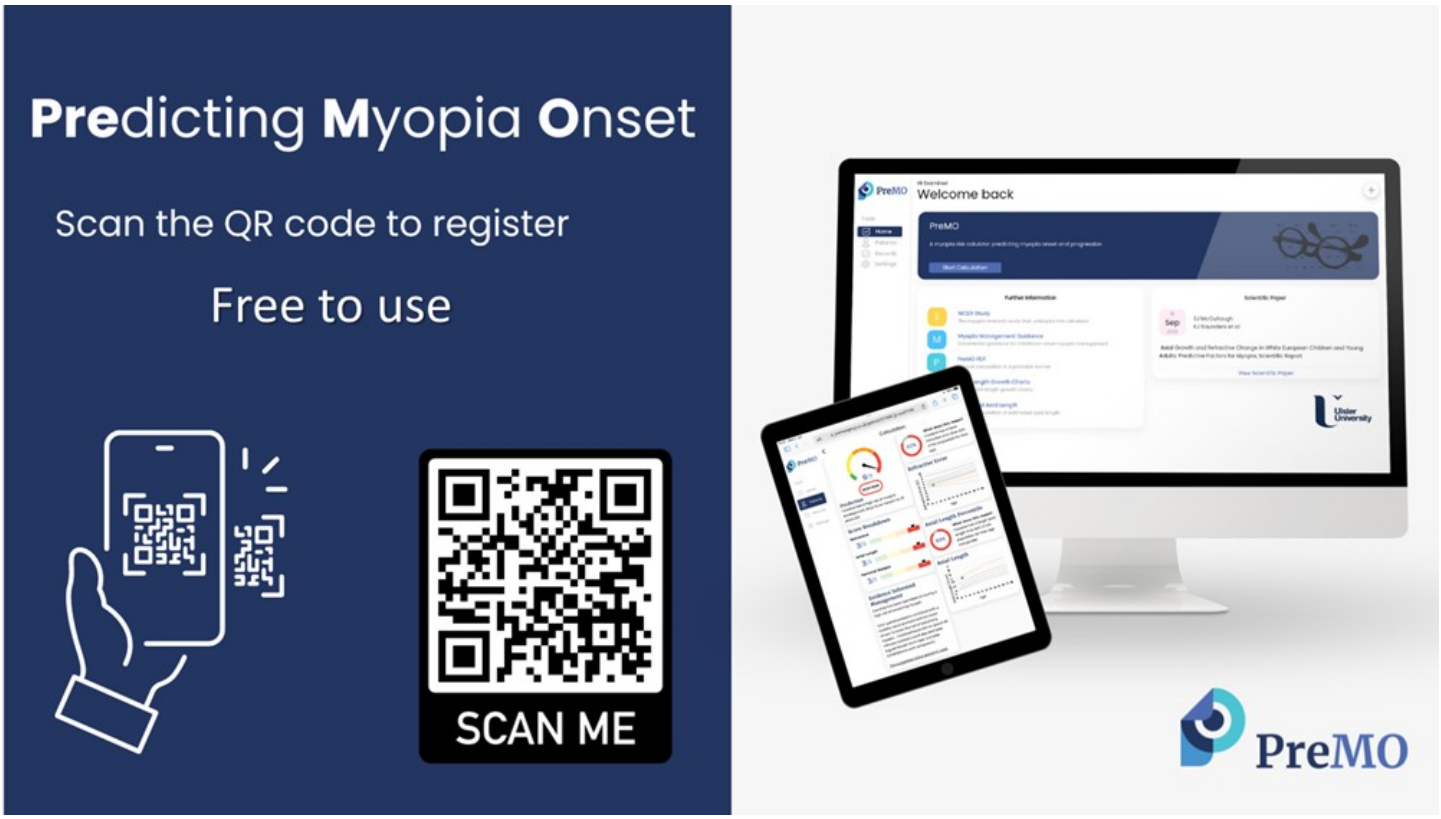
**Purpose:** This work aimed to compare the results from a study on the performance of a multifocal toric contact lens design for a population with 1.00 to 1.75 D astigmatism to the results from another study on the performance of a non-toric multifocal contact lens for a population with 0.00 to 0.75 D astigmatism.

**Methods:** In the toric lens study, a total of 171 subjects with refractive astigmatism of -1.00 to -1.75D with axes 90±15 or 180±15 degrees were fit with a novel multifocal toric lens in a multi-site prospective single-arm, open-label clinical trial. In the other study, a total of 136 participants were fit with the non-toric multifocal lens. Both the multifocal and multifocal toric lens share the same senofilcon A material and multifocal design with 3 near Add options, while the multifocal toric design also has blink stabilized design and 1.00 D cylinder correction. The multifocal toric soft contact lens had sphere powers of -1.00D to -4.00D and +1.00D to +4.50D, and a single cylinder power of -1.00D with axes 90±10 and 180±10 degrees. The multifocal contact lens had sphere powers from -1.00D to -6.00D and +0.50 to +3.50D. Both studies had 3 scheduled visits: baseline/dispense, first follow-up (3 days for multifocal, 1 week for multifocal toric), and second follow-up 1 week later. Up to 2 power modifications for each eye were allowed at Visit 1 and at Visit 2. Outcome measures included logMAR Visual Acuity (VA), subjective assessments of vision, and fit success metric, defined as the number of lenses needed to achieve optimized vision correction.

**Results:** After 1-week of optimized lens wear, the mean binocular high luminance high contrast (HLHC) logMAR VAs for the multifocal and multifocal toric were within one letter (less than 0.02 logMAR difference) for distance (4m), intermediate (64cm), and near (40cm). For subjective vision, the top-two-box (T2B) most favorable responses on a five-point scale for the two lenses differed by no more than 10%.

Regarding ease of fitting, the multifocal toric lens was fit in 2 pairs or less for 96.6% of subjects (95% credible interval (CrI): 93.3 to 98.8%), compared to 98.5% (95% CrI: 95.9 to 99.7%) for the multifocal lens.

**Conclusion:** The multifocal toric contact lens with 1.00 D cylinder correction was evaluated on a population with 1.00 to 1.75 D refractive astigmatism and found to provide visual quality similar to that of a non-multifocal contact lens on a population with 0 to 0.75 D astigmatism. The new multifocal toric therefore extends the coverage by daily disposable multifocal contact lenses to a new population of presbyopic wearers.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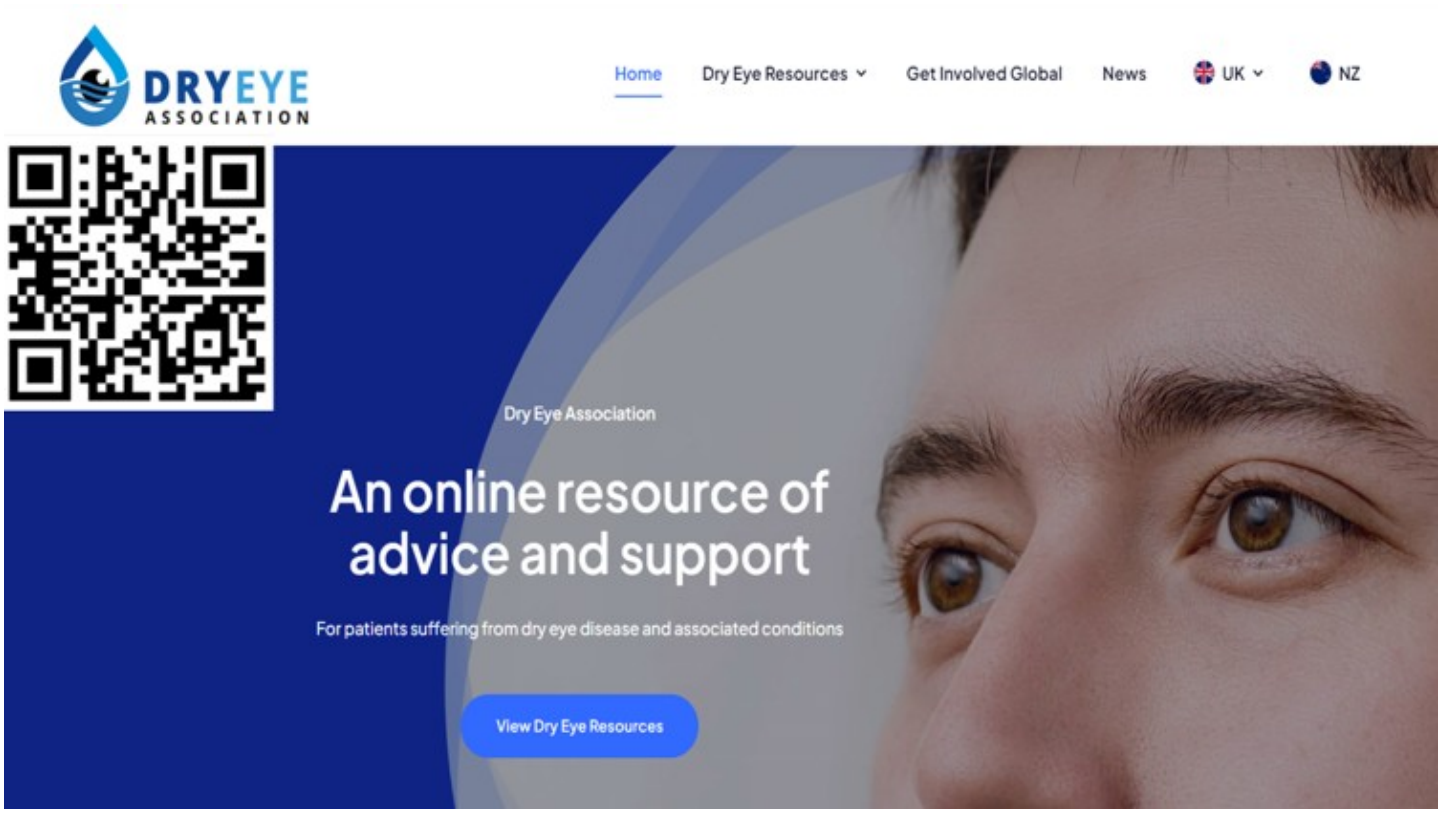
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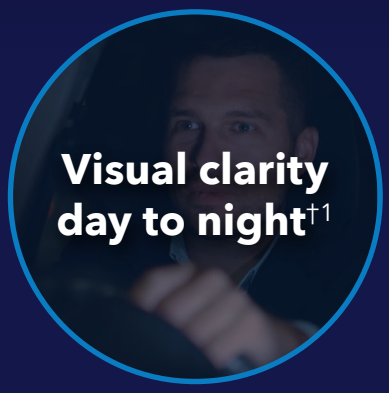


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* Descriptive summaries of T2B responses from separate studies where n ranged from 171 to 449. † Descriptive summaries of T2B responses from separate studies where n ranged from 144 to ≥449. ‡ Full/complete family consists of sphere, multifocal, toric and multifocal toric contact lenses. § Source: 2025 GFK sell out data, global 12 markets.

**References**: **1.** JJV Data on file, 2025: Standalone Claims for ACUVUE® OASYS MAX 1-Day Family of Contact Lenses. **2.** JJV Data on File 2025, World's First and Only Daily Disposable Multifocal Toric Contact Lens.

**Important Safety Information:** ACUVUE® Contact Lenses are indicated for vision correction. For detailed product description and safety information, please consult the Instructions for Use available on Johnson & Johnson website [www.e-ifu.com].



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**References: 1.** Chamberlain P et al A 3-year Randomized Clinical Trial of MiSight Lenses for Myopia Control. OVS 2019;96:556-567.
**2.** CVI data on file 2025. Prospective, 1-week, double masked, randomized, bilateral crossover study with MiSight® 1 day and MyDay® MiSight® 1 day. N=32 subjects aged 8-18 years.



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