

18th International Conference of the
Research Institute of Ophthalmology

RIO 2026

22 -23 JANUARY 2026
ROYAL MAXIM PALACE KEMPINSKI, CAIRO

**ASLA-XTRA for the treatment of
high myopia and mixed
astigmatism**

Ioannis Aslanides
MD, PhD, FRCOphth



Disclosure

- None

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years
emmetropia

INSTITUTE OF OPHTHALMOLOGY

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Cornell High Frequency Ultrasound Team



Jackson
Coleman



Ronald
Silverman



Dan
Reinstein



Ioannis
Aslanides

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SCHWIND EYE-TECH SOLUTIONS



Samuel Arba Mosquera

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TRANS-PRK CONCEPT - SCHWIND

- During my collaboration with **Dr Reinstein** in Weill-Cornell Medical College (New York), under the supervision of **Prof. Coleman**, we conducted 5 years of research on the corneal epithelium using the Artemis
- Our joint research is a major part of my **PhD thesis** (1992-1996)
- Close collaboration with **Samuel Arba Mosquera**



1. High-frequency ultrasound corneal pachymetry in the assessment of corneal scars for therapeutic planning, **Dan Z. Reinstein, Ioannis M. Aslanides**, Ronald H. Silverman, Penny A. Asbell, D. Jackson Coleman, Contact Lens Association of Ophthalmologists, 1994 July
2. High-frequency Ultrasound Spectral Parameter Imaging of Anterior Corneal Scars, **Dan Z. Reinstein, Ioannis M. Aslanides**, Ronald H. Silverman, Douglas Lazzaro, Mark Rondeau, Hanna Rodriguez, Contact Lens Association of Ophthalmologists, 1995 October
3. High frequency ultrasound imaging in papillary block glaucoma, **Ioannis M. Aslanides**, Peter E. Libre, Ronald H. Silverman, **Dan Z. Reinstein**, Douglas R. Lazzaro, Mark J. Rondeau, Gregory K. Harmon, D. Jackson Coleman, British Journal of Ophthalmology, 1995 November
4. Iridoschisis: high frequency ultrasound imaging. Evidence for a genetic defect? Danias J, **Aslanides IM**, Eichenbaum JW, Silverman RH, **Reinstein DZ**, Coleman DJ., British Journal of Ophthalmology, 1996 December
5. High frequency ultrasound evaluation of radial keratotomy incisions, Lazzaro DR, **Aslanides IM**, Belmont SC, Silverman RH, **Reinstein DZ**, Muller JW, Lloyd HO, Coleman DJ., Journal of Cataract and Refractive Surgery, 1995 July
6. Consecutive myopia correction with trans epithelial versus alcohol-assisted photorefractive keratectomy in contralateral eyes: One year results, Luger MHA, Ewering T, **Arba-Mosquera S**. Cataract Refract Surg 2012; 38: 1414-1425
7. A. Comparison of single-step reverse transepithelial all-surface laser ablation (ASLA) to alcohol-assisted photorefractive keratectomy. **Aslanides IM**, Padroni S, **Arba Mosquera S**, Ioannides A, Mukherjee, Clin Ophthalmol. 2012;6:973-80. doi: 10.2147/OPHTH.S32374. Epub 2012 Jun 27.

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WHAT IS ASLA

All-Surface Laser Ablation (ASLA) is a:

- ✓ no-touch
- ✓ single-step Transepithelial PRK technique

that allows:
simultaneous ablation of the epithelium and the stroma

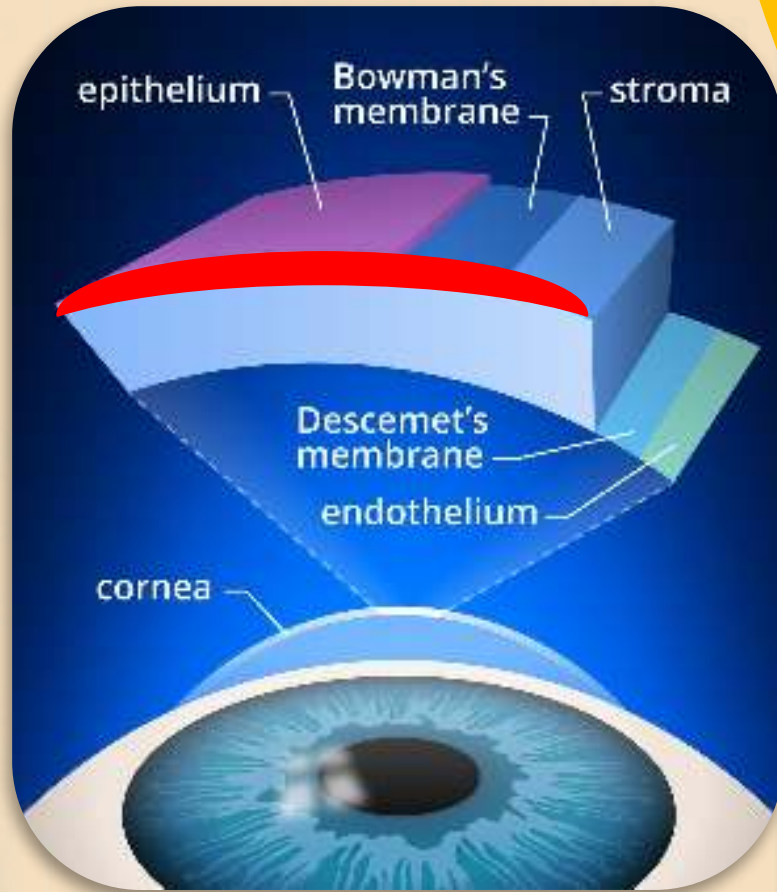


- shorter overall treatment time
- minimal risk of corneal dehydration

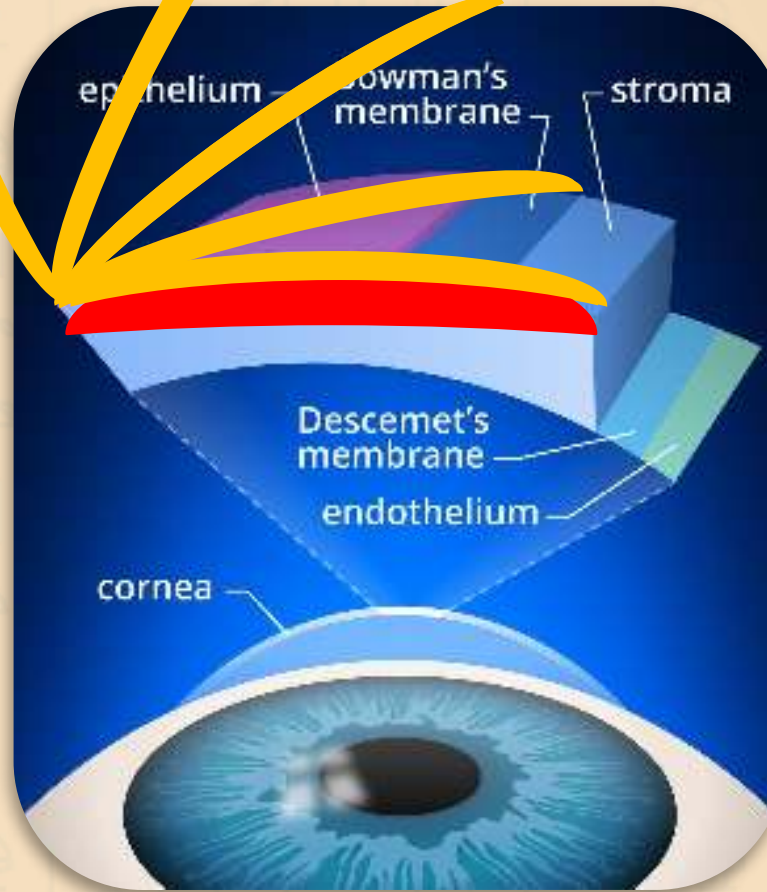
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ASLA VS SMILE VS LASIK - CORNEAL BIODYNAMICS

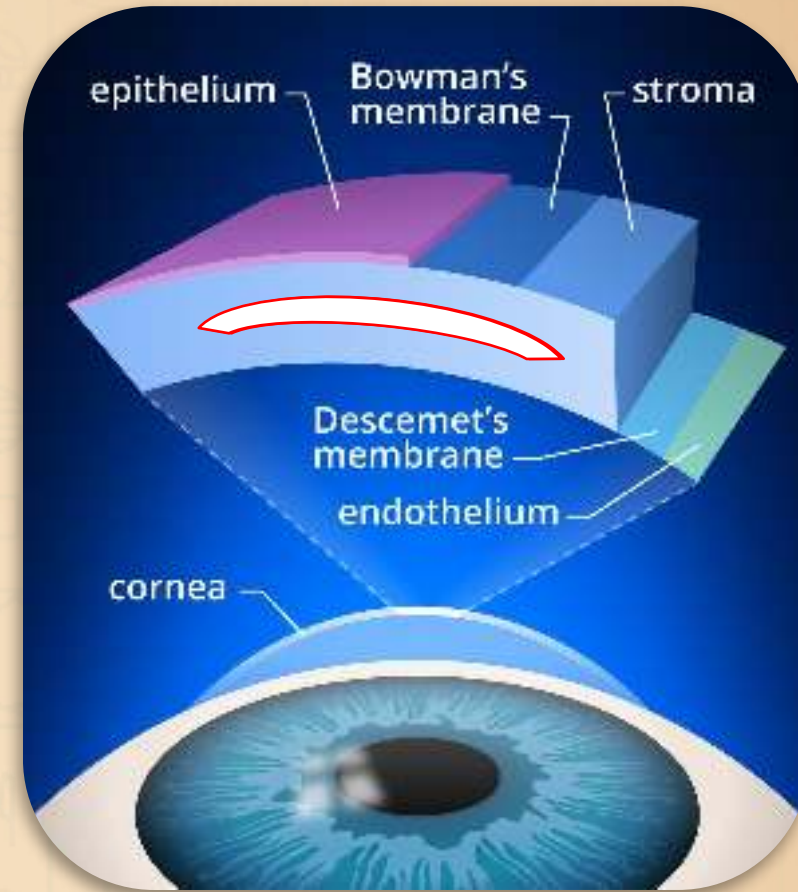
Minimize invasiveness of the treatment



ASLA



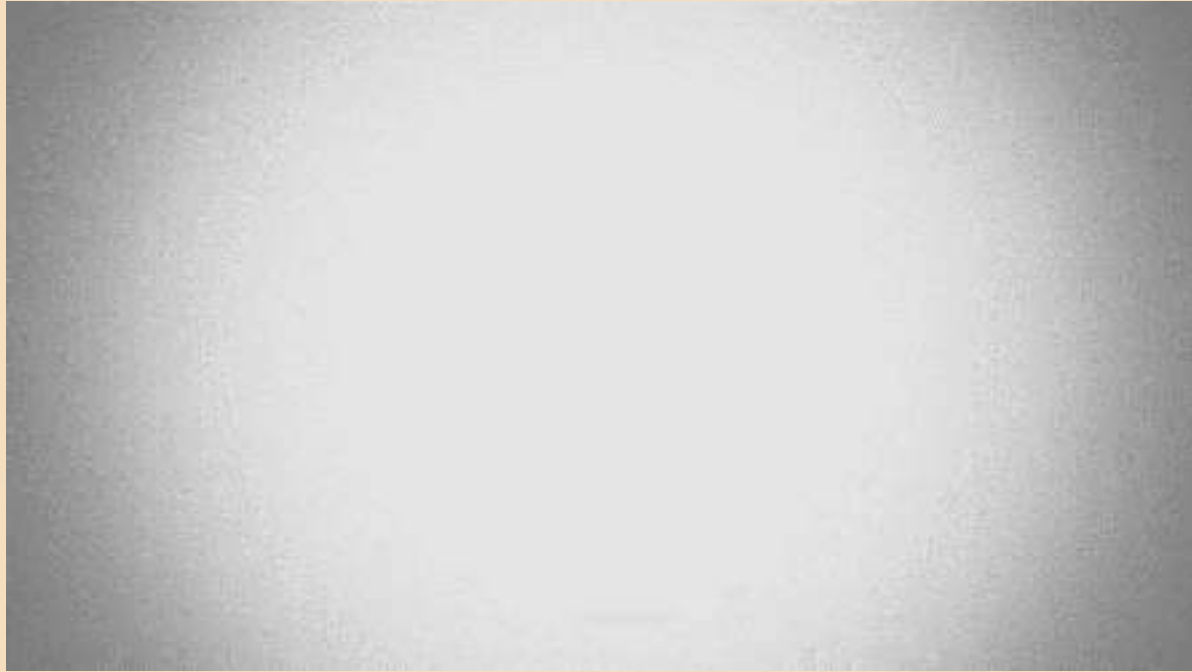
LASIK



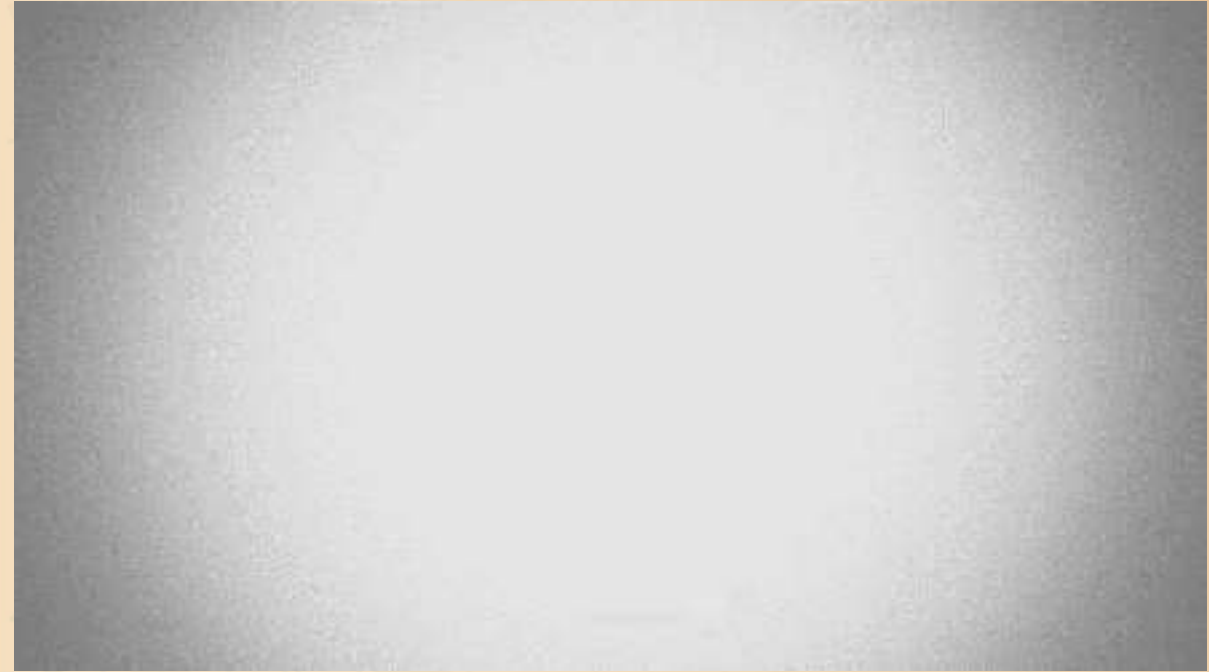
SMILE

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WHY TRANSPRK IS A MISNOMER



Conventional TransPRK
(PTK+PRK)



ASLA

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WHY ASLA

- ❖ fewer complication risks
- ❖ low-complexity procedure
- ❖ long-term results comparable to or even better than LASIK

and is:

- ❖ cost efficient
- ❖ quick

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WHY ASLA

- Suitable for:
 - ✓ myopia
 - ✓ astigmatism
 - ✓ thin corneas
 - ✓ suboptimal topography
 - ✓ hyperopia???

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All Surface Laser Ablation + Accelerated CXL

- ✓ Refractive neutral
- ✓ No MMC
- ✓ Riboflavin soaking time: 90"
- ✓ Energy: 2.7 J/cm² (30mW x 90")

ASLA-XTRA



ASLA (TransPRK)
Schwind Amaris



Avedro
KXL

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STABILIZATION OF REFRACTIVE SURGERY PROCEDURES

➤ CXL is considered to be useful in order to stabilize

➤ LASIK+CXL

➤ Surface Ablation+CXL

Offers better corneal integrity,
reduced refractive error and
K readings along with stable
visual acuity

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- Kanellopoulos AJ, Kahn J, Topography-guided hyperopic LASIK with and without high irradiance collagen cross-linking: initial comparative clinical findings in a contralateral eye study of 34 consecutive patients, J Refract Surg. 2012 Nov;28
- **Aslanides IM**, Mukherjee AN, Adjuvant corneal crosslinking to prevent hyperopic LASIK regression, Clin Ophthalmol. 2013;7:637-41
- George D Kymionis, Vasileios Selimis, Konstantinos I Tsoulnaras, MHD Ghaith Mahayni & **Ioannis M Aslanides** (2018) A comparative, randomized, contralateral study between the use of Mitomycin-C and accelerated cross-linking as adjuvant therapy after trans-epithelial all surface laser ablation for moderate to high myopia (ASLA-MMC vs. ASLA-XTRA): a pilot study, Expert Review of Ophthalmology, 13:4, 245-250
- **Aslanides IM**, Hafezi F, Chen S, et al. 5-year efficacy of all surface laser ablation with cross-linking (ASLA-XTRA) for the treatment of myopia. Eye Vis (Lond). 2020;7:31. Published 2020 Jun 11. doi:10.1186/s40662-020-00198-z

EVIDENCE BASED MEDICINE

We have published our own experience and results with ASLA and ASLA-XTRA



*Cataract & Refractive
Surgery Today, Europe,
June 2011*

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*Clin Ophthalmol 2012;6:973-80
Epub 2012 June 27*



*J Optom. 2015 Jan-Mar;8(1):27-32
Epub 2014 Jun 13*

EVIDENCE BASED MEDICINE



Open Ophthalmol J. 2013 Oct
18;7:63-8
eCollection 2013

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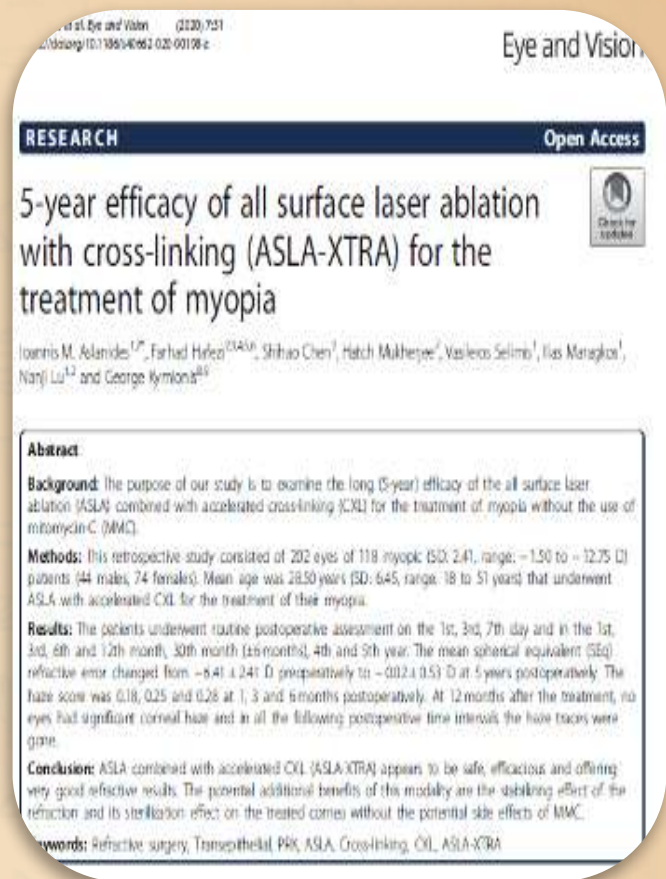
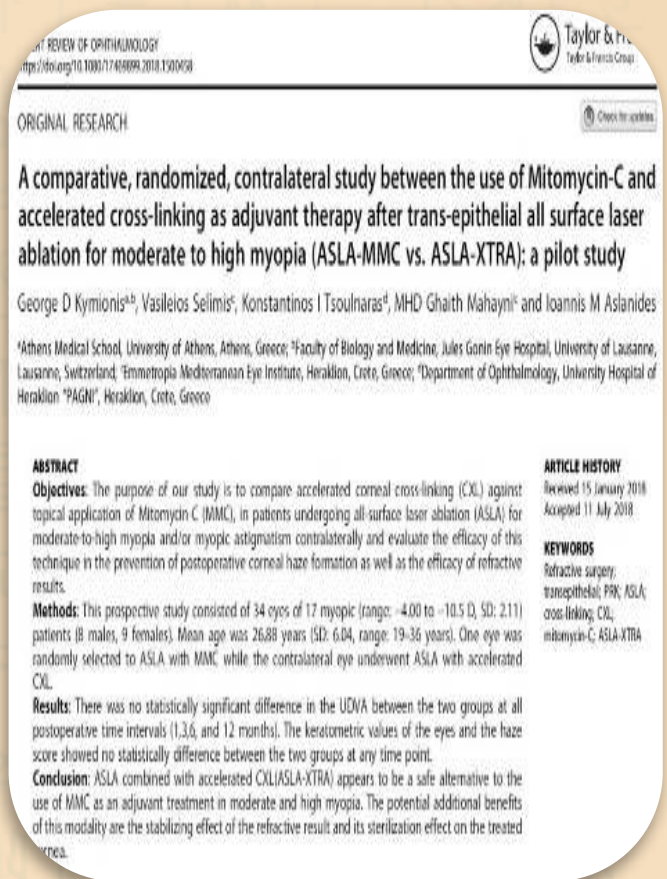


Clin Ophthalmol. 2014 Dec 30;9:33-41
eCollection 2015



Clin Ophthalmol. 2015 Apr 15;9:685-90 eCollection 2015

EVIDENCE BASED MEDICINE



Cont Lens Anterior Eye. 2017 Feb;40(1):42-46 Epub 2016 Nov 22

Expert Review of Ophthalmology, 13:4, 245-250, DOI: 10.1080/17469899.2018.1500458

Eye Vis (Lond). 2020 Jun 11;7:31. doi: 10.1186/s40662-020-00198-z. eCollection 2020

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ASLA-XTRA FOR THE TREATMENT OF MYOPIC ASTIGMATISM

ASLA-XTRA in high Astigmatism

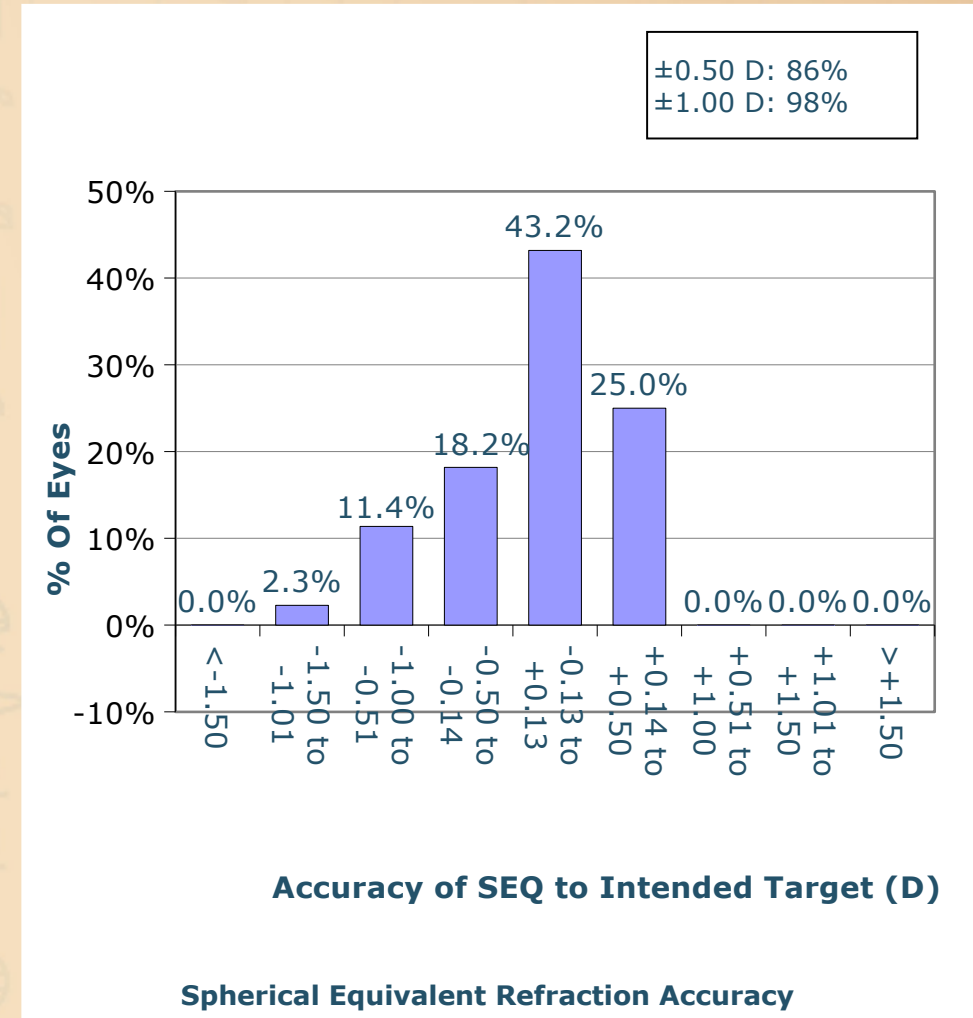
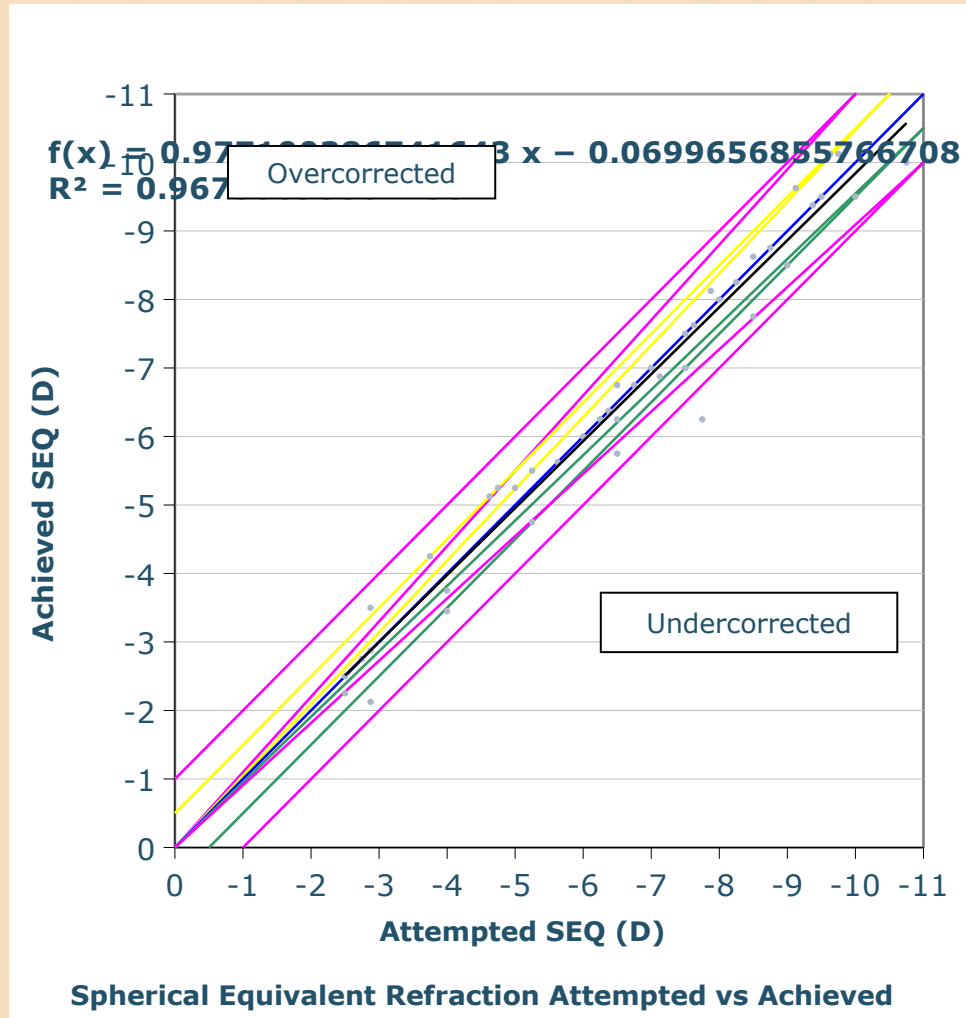
Preop Cylinder > -1.50 D

Timeline	SphEq (D)	St Dev
Preop	-6.88	2.56
1 month postop	-0.15	0.30
3 months postop	0.07	0.24
6 months postop	0.09	0.62
12 months postop	-0.05	0.48
24 months postop	-0.07	0.51

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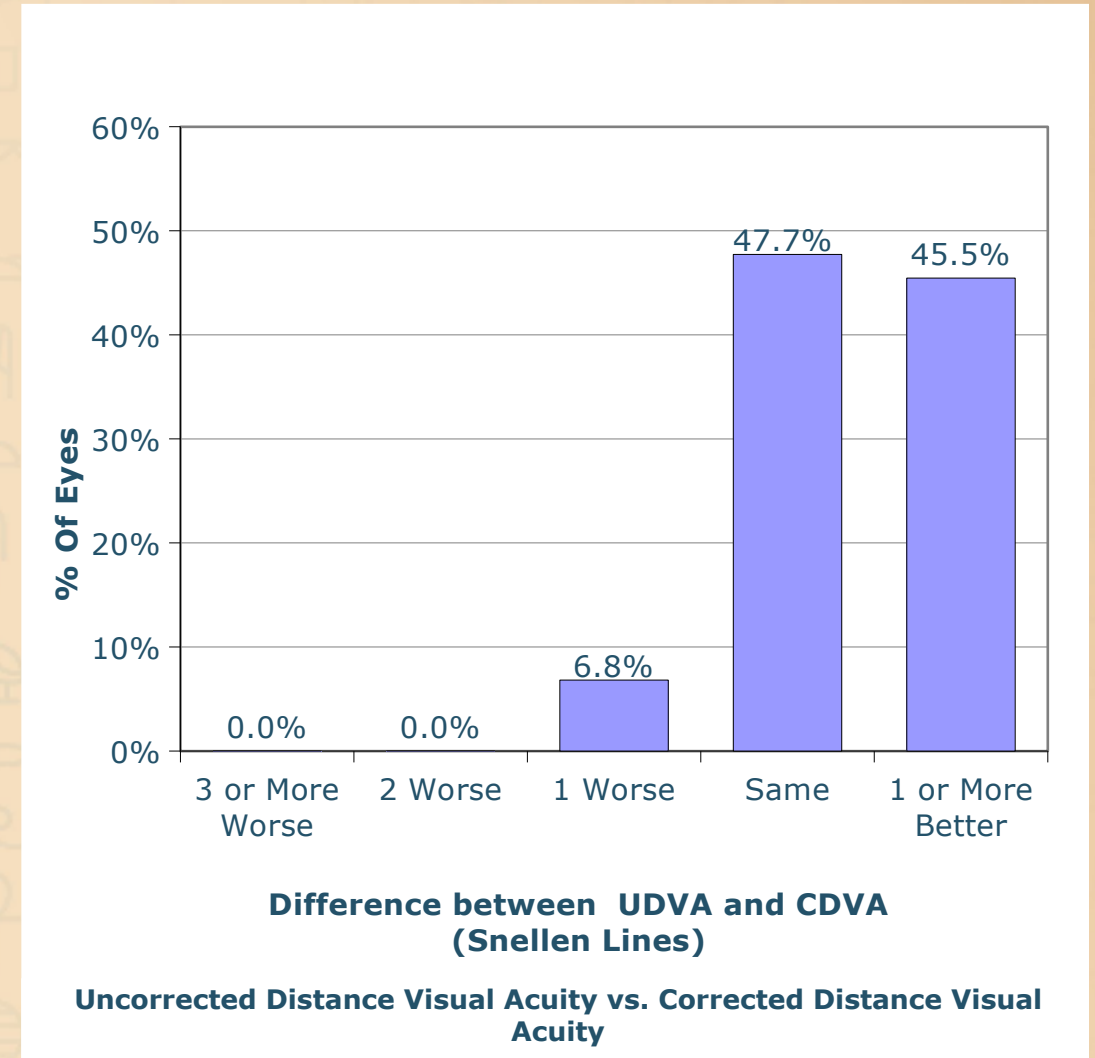
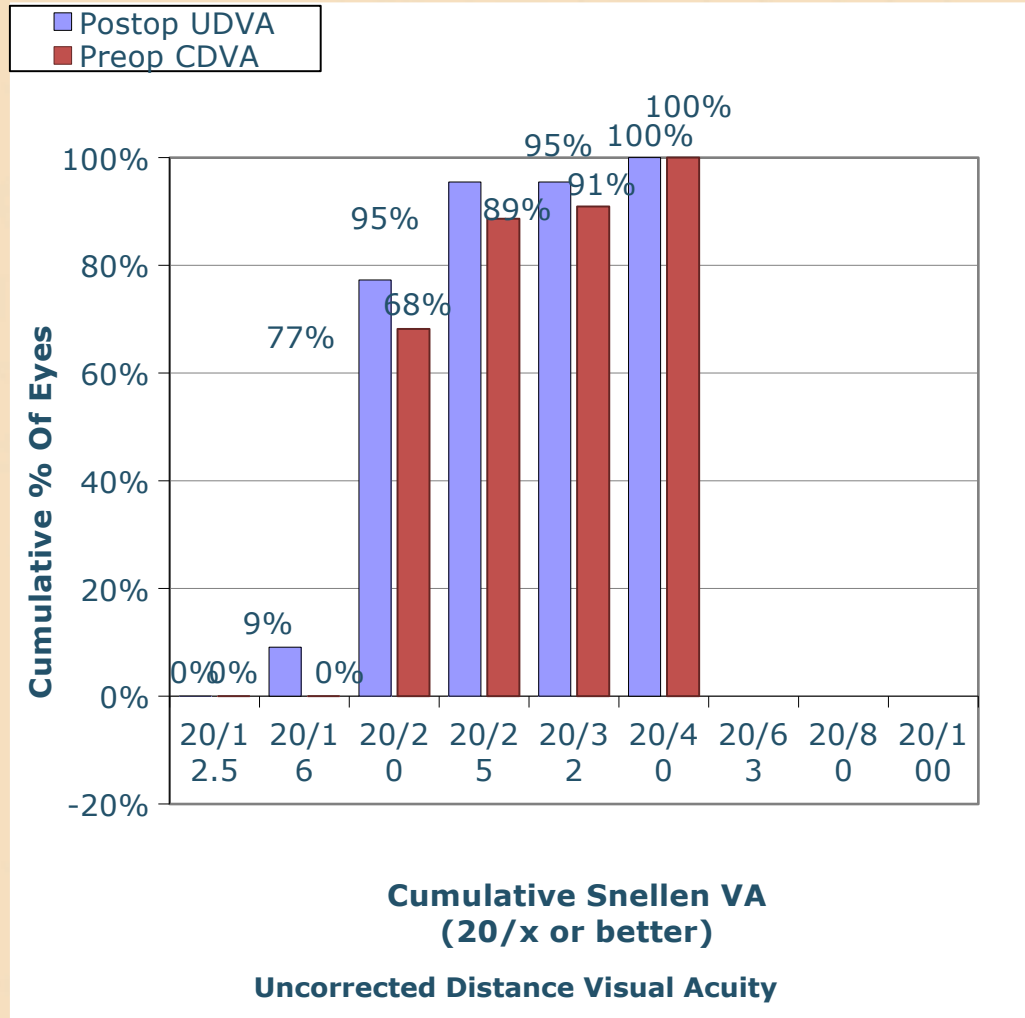
ASLA-XTRA FOR THE TREATMENT OF MYOPIC ASTIGMATISM

•Refraction



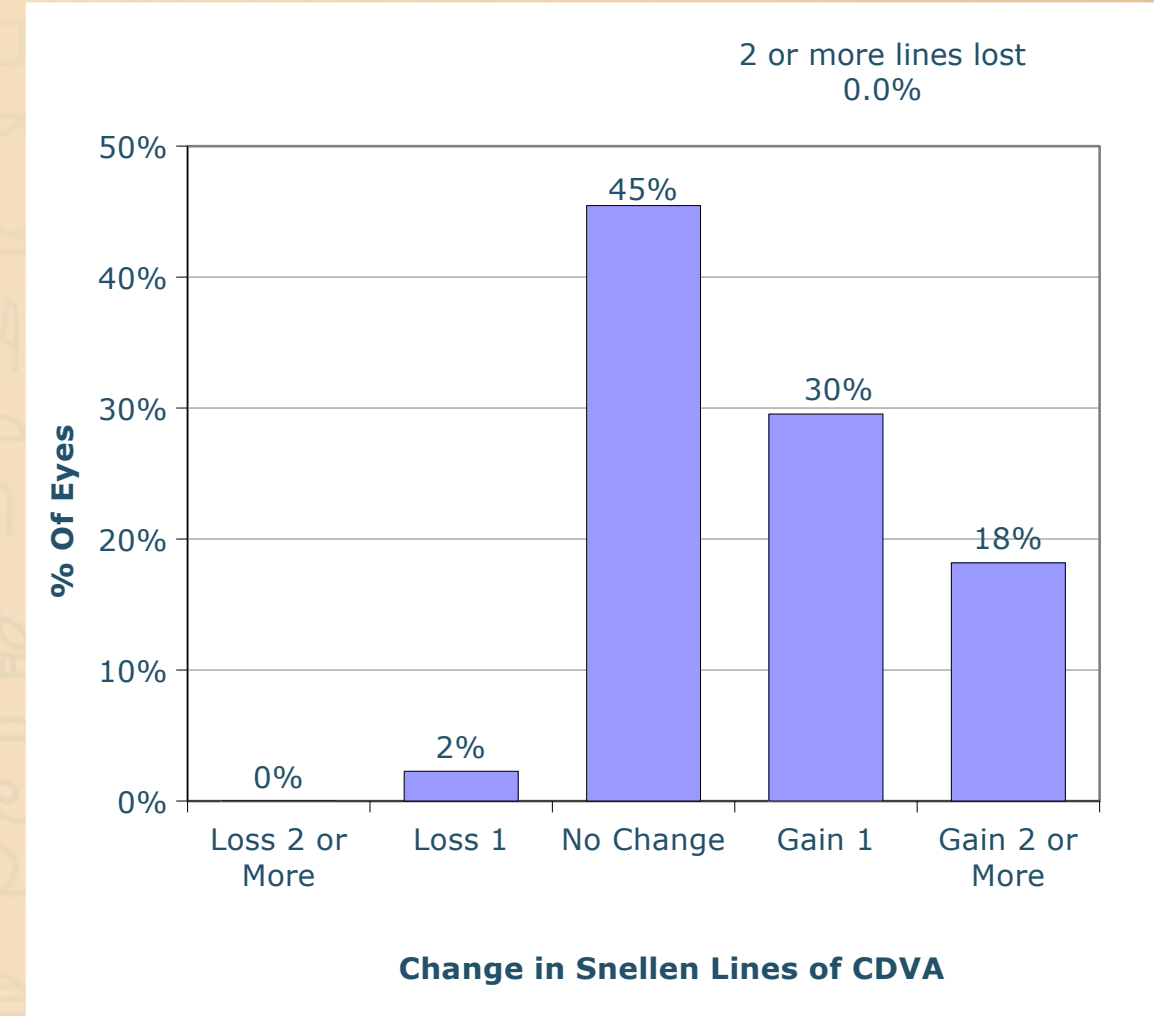
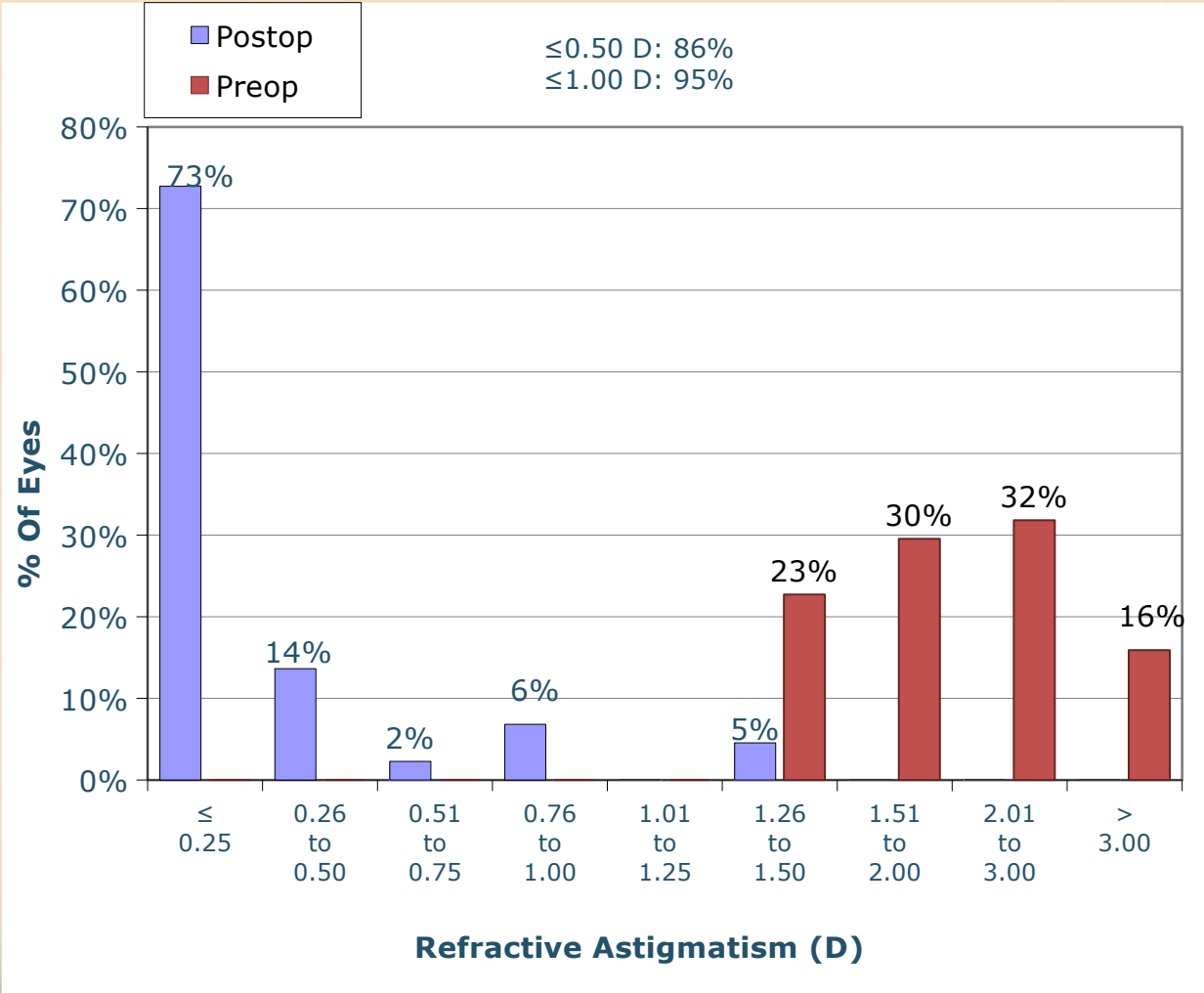
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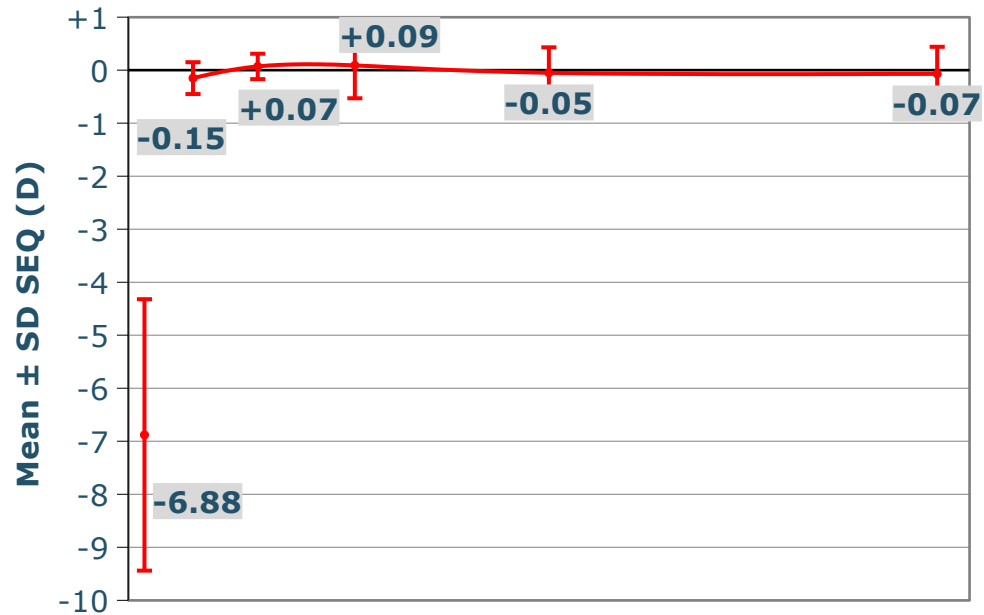
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ASLA-XTRA FOR THE TREATMENT OF MYOPIC ASTIGMATISM



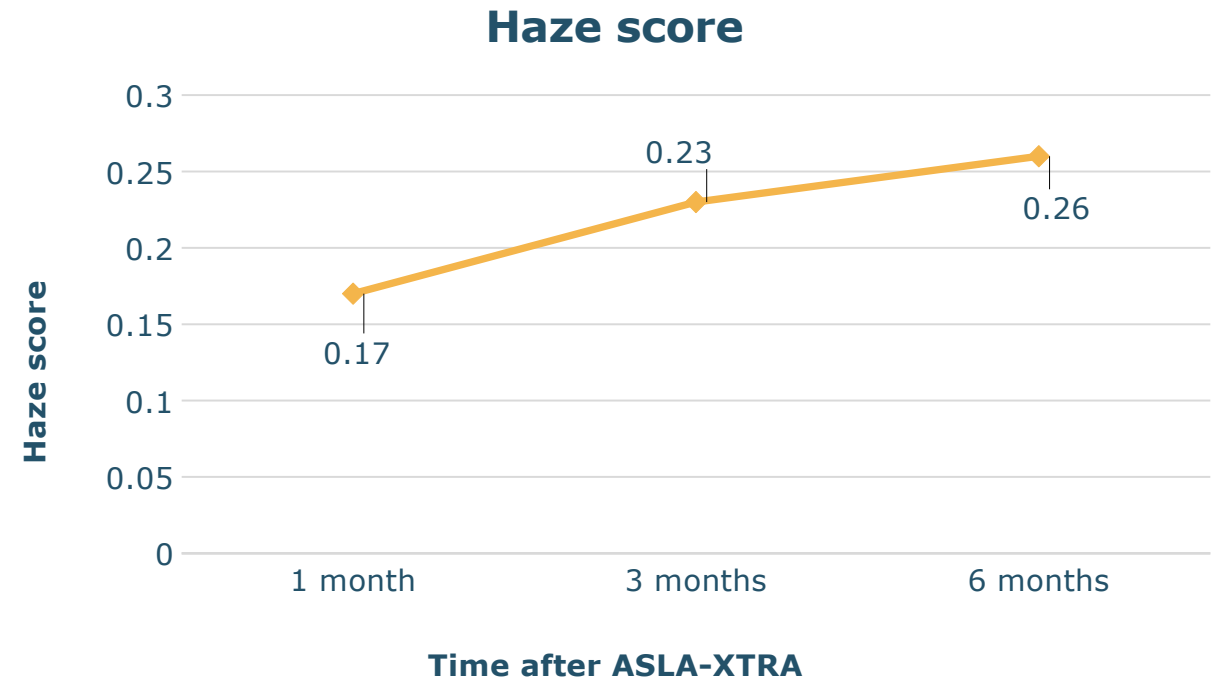
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ASLA-XTRA FOR THE TREATMENT OF MYOPIC ASTIGMATISM



Time After Surgery (months)

Spherical Equivalent Refraction Stability



Average haze

*12 months onwards after the treatment, no eyes had significant corneal haze

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ASLA-XTRA FOR THE TREATMENT OF MYOPIC ASTIGMATISM

- The major drawback is **pain** (variable)
- Needs extra chair time and appropriate management

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ASLA-XTRA FOR THE TREATMENT OF MYOPIC ASTIGMATISM

- ASLA combined with accelerated CXL (ASLA-XTRA) appears to be **safe** and **efficacious** in high ametropias
- Stabilizing effect while preventing the appearance of haze postoperatively without the use of MMC
 - Stabilizing effect on the cornea
 - Sterilizing effect on the cornea
 - No haze

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Thank you for your attention



**44 Eleftherias Sq.
(Electra Complex)
Heraklion**

 **+30 2810 226198**

**www.emmetropia.gr
info@emmetropia.gr**

**Daskalaki 5
Rethymno**

 **+30 28310 55444**

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