

FINANCIAL DISCLOSURE FOR KRISTIN BARNES, OD

- Consultant:
 - Tarsus
 - STAAR Surgical



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GRANTOR STATEMENT

This activity is supported by unrestricted education grants from:

- Johnson & Johnson Surgical Vision
- Orasis
- Tenpoint/Visus

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LEARNING OBJECTIVES

- To discuss and educate on all relevant options in refractive cataract surgery.
- To discuss and educate on the Light Adjustable Lens and the potential optometrist role in perioperative and post operative patient care with LAL.
- To encourage/empower ODs to maintain a leading role in the pre, peri and post operative care for refractive surgery patients
- To discuss potential post operative complications, common and uncommon, and empower attending optometrist with proper diagnosis and management of these complications
- To discuss real world case presentations to promote attending optometrist clinical learning opportunities.

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NOTE ABOUT OBTAINING CREDIT

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- You must have remained at the in-person event until the end of the program.
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- Event will be recorded and published as an enduring CE activity at TFGLearningCenter.com

Thank you for joining us!

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CREDIT DESIGNATION STATEMENT



This activity, COPE Activity Number xx, is accredited by COPE for continuing education for optometrists.

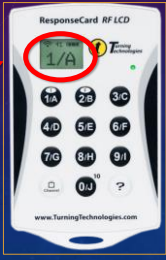
Synchronous Live
Course # 99284-PO 2.0 hours
Activity # 130823

COPE advises optometrists to contact the State or Provincial Board where they are licensed for verification of what is acceptable for license renewal.

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ARS - INTERACTIVE PROGRAM FOR POLLING

1. Simply press the button that corresponds with your answer choice
2. Your selection will appear in the LCD display
3. Please respond to **ALL** questions!



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POLLING QUESTION

Which best describes your practice setting?

1. Private solo practice
2. Private integrated practice
3. Corporate optometry
4. Hospital or clinical setting
5. Academic
6. Other

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POLLING QUESTION

Which represents your largest patient volume?

1. Primary eye care / routine exams
2. Dry Eye
3. Glaucoma
4. Retinal disease
5. Other

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POLLING QUESTION

How confident are you in your understanding of topical treatment options for addressing presbyopia correction?

1. Very confident
2. Confident
3. Neutral
4. Not very confident
5. Not confident at all

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POLLING QUESTION

How often do you discuss with applicable patients a topical treatment for presbyopia correction?

1. Never
2. Rarely
3. Sometimes
4. Frequently
5. For every patient with presbyopia

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REFRACTIVE PROGRAM FLOW

Part 1

- Preop Considerations for Refractive Surgery
 - Patient Identification
 - Patient Education/Expectations
 - Patient Preparation
- Refractive Surgery
 - Corneal Refractive Surgery
 - EVO ICL
 - RLE
 - Case Presentation

Part 2

- Cataract Surgery
 - Surgical tools
 - IOL choices
 - Case Presentation
- Pharmacological Presbyopia Correction
- Post Operative Approaches for Refractive and Cataract Surgery
 - Patient Care
 - Patient Education/Expectations
 - Complications
 - Program Wrap Up

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Workup

- Exam: trace to 1+ NS OS>OD, otherwise normal eyes
- M/V trial
 - OD MR+1.50, OS no lens → feels dizzy
 - OD MR, OS +1.50 → blurry
 - OD MR, OS no lens → NO! can't even see the phone
- Recommendation?
 - Use presbyopia drops
 - Trial M/V contacts
 - Wait until more cataracts for cataract surgery
 - Consider RLE with a trifocal IOL

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"TOOLS AMPLIFY YOUR TALENT.

THE BETTER YOUR TOOLS,
AND THE BETTER YOU KNOW HOW TO USE THEM,
THE MORE PRODUCTIVE YOU CAN BE."

ANDREW HURA



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- Monofocal*
- Monofocal plus*
- Accomodative*
- EDOF*
- Non-diffractive EDOF*
- Bifocal*
- Trifocal*
- Adjustable
- Small aperture

*also come in toric



AH

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MATCHING AND PAIRING PATIENTS TO THE CORRECT LENS OPTION: SIMPLIFY THE MATCHMAKING TO HELP PATIENTS CHOOSE

- Empower primary eye doctor and the patient with knowledge about different options
- Consolidate the premium package options to minimize confusion
- Train the team in triaging patients to the likely ideal IOL choice
- Optimize diagnostic tools to assess for candidacy
- Manage expectations pre and post surgery

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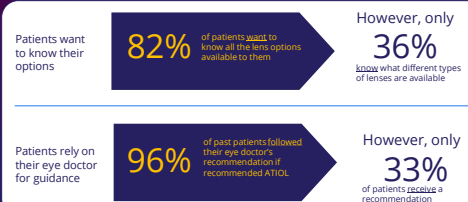
FIRST AND FOREMOST, KNOW YOUR TOOLS

	Add Power	Astigmatism Correction	Range of Vision	UCVA quality	Nighttime glare	Cost
Light Adjustable	None	0 - 3 D	Customizable	++++	—	+++
Trifocal	+2.17/+3.25	1 - 3 D	D/MR/N	+++	++	++
Extended Focus	+2.00	0 - 3 D	D/MR	+++	+	++
Toric Monofocal	None	1 - 5 D	One distance	+++	—	++
Small Aperture	None-pinhole effect	1-2 D	D/MR	++	—	++

AH

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PATIENTS WANT A BETTER UNDERSTANDING OF THEIR LENS OPTIONS AND RELY ON THEIR EYE DOCTOR FOR GUIDANCE



2021 Consumer Decision Making Research. % selecting top 3 box on 1-10 scale. n = 297

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EMPOWER PATIENTS WITH INFORMATION BEFORE THE CONSULTATION AH

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CONSOLIDATE THE OPTIONS: AVOID DECISION PARALYSIS NS

- Non-femto/monofocal
- Non-femto/Toric \$
- Standard/Standard --
- Non-femto Multifocal/EDOF \$\$
- Femto/Monofocal \$
- Non-femto/LAL \$\$\$
- Femto/ATL \$
- Femto/ATL \$
- Femto/ATL \$
- Femto/ATL \$
- Femto/ATL \$
- Femto/ATL \$
- Femto/LAL \$\$\$\$

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GETTING TO KNOW YOUR PATIENT WILL HELP IN COUNSELING... AH

Refractive History →
myope, hyperope, astigmatism, presbyope

Visual Demands →
active lifestyle, wants best UCVA at N/MR/D, wants "perfect" vision

Reading Correction →
bifocals, readers over contacts, monovision, under-corrected myope, peak over/under glasses

Prior Refractive Surgery →
LASIK, PRK, RK

Other Comorbidities →
dry eyes, AMD, glaucoma

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HOW DO WE NARROW DOWN THE ADVANCED IOL OPTIONS FOR PATIENTS SEEKING SPECTACLE INDEPENDENCE? AH /NS

- Hyperope who wears glasses at all distances → Trifocal or EDOF
- Myope who is accustomed to reading without glasses → Trifocal
- History of LASIK/PRK/RK/SMILE → LAL
- History of M/V with contacts and loves it → LAL or EDOF with mini-mono
- Irregular cornea (KC, ectasia, etc) → small aperture ideally in non dominant eye, ?LAL in dominant
- Cataract in patient with glaucoma on drops → monofocal/toric with MIGS

- +ARMD, night driving, highly sensitive to glare/halos, irregular ocular surface → avoid MFIOI
- Corneal astigmatism >2.5D : avoid LAL, recommend toric

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IOL CHEATSHEET AH

PATIENT CONSIDERATIONS	IDEAL IOL	WHY?
POST REFRACTIVE SURGICAL PATIENT (POST LASIK/PRK/RK)	LIGHT ADJUSTABLE LENS (LAL)	Adjustability post implantation allows for the most precise fine tuning of vision and helps avoid refractive surprise.
MONOVISION PATIENT, not easy-going about final target	LAL or LAL-PLUS (if not post refractive surgery)	Monovision patients who are discerning demand most optimized distance in their dominant eye and are particular about the near distance most optimized for task, adjustability allows for such precision
MONOVISION PATIENT, more easy going	EDOF, TORIC, or MONOFOCAL	This is a patient who may not want to commit to the time and cost of the LAL, and is willing to accept slight suboptimal target
MYOPE, wants to maintain ability to read without glasses/contacts but wants uncorrected distance vision, never tried monovision in past	TRIFOCAL IOL	For a patient accustomed to reading without correction, it is an important consideration to maintain that ability while addressing their desire to gain distance vision too
HYPEROPE	TRIFOCAL IOL	These are often the easiest patients to make happy, they are dependent on glasses for all distances and trifocal delivers a great outcome
IRREGULAR CORNEA	SMALL APERTURE IOL	

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MIDRANGE IS MORE THAN JUST THE COMPUTER..... NS

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NOW WITH LIGHT UTILIZATION LIKE NEVER BEFORE^{11,12}**

More light utilization, less light scatter^{11,12}**

Clinically proven low visual disturbance profile^{13**}

Outstanding spectacle independence at all distances^{14**}

Undeniable patient^{15***} and surgeon satisfaction^{15**}

*Based on manufacturer reported values and respective methodologies for Clareon® PanOptix.
 **Based on data by Maloney Shamie Hura Vision Institute.
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 *****Based on data by Maloney Shamie Hura Vision Institute.

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OPTIMIZED DIFFRACTIVE STRUCTURE

Proprietary design and advanced manufacturing allows for even higher resolution of the diffractive structure, increasing light utilization by **recovering 50% of the scattered light^{11,12*}**

Precise and targeted small changes in the diffractive structure
($\pm 0.5\mu\text{m}$ step changes)¹²

Maintaining design strengths of Clareon PanOptix

Recovering light lost to scatter and repositioning it to a useful place¹²

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MORE LIGHT UTILIZATION, LESS LIGHT SCATTER^{11,12}**

Clareon PanOptix Pro Is Designed For:

Unprecedented light utilization^{11,12,16,19**}

Uninterrupted light distribution across the range^{11,11}

Enhanced image contrast¹¹

94% LIGHT UTILIZATION¹²

*Based on manufacturer reported values and respective methodologies for Clareon® PanOptix.
 **Based on data by Maloney Shamie Hura Vision Institute.
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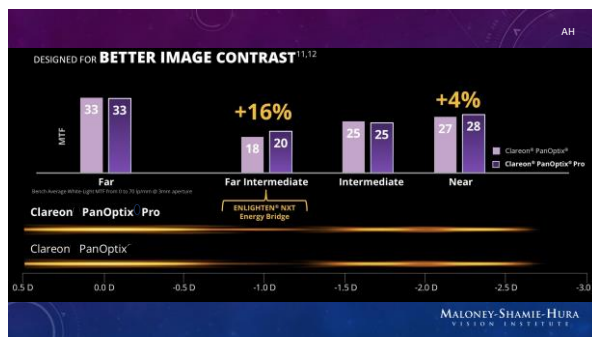
**MORE LIGHT UTILIZATION
LESS LIGHT SCATTER^{11,12*}**

50% less light scatter
by harnessing 94% of total light energy^{11,12**}

	LIGHT UTILIZATION	LOSS/SCATTER
Clareon PanOptix Pro	94%	6% ¹¹
Clareon PanOptix	88%	12% ^{11,11}

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LASIK wore off!

- 58 year old, had LASIK 20 years ago and now has worn off
- Can't see close anymore

- UCDVA OD 20/30 OS 20/40
- UCNVA J5 ou

Recommendation:

- RLE with LAL and m/v or
- RLE with LAL in dominant eye and Aphthera in non dominant

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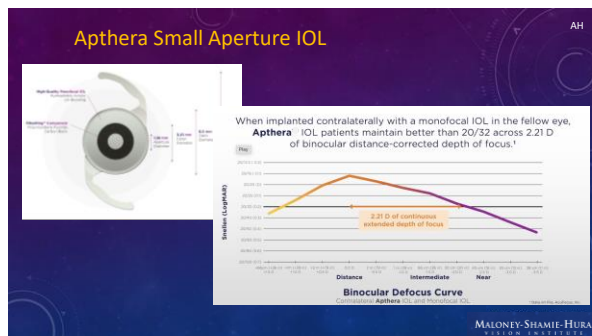
Phase IV Study - Binocular Vision Outcomes

Uncorrected Binocular Distance Vision	All (n=341)	Blended Vision or Bilateral Myopia (n=274)	Bilateral Emmetropia (n=67)
Percent of subjects 20/15 or better	33%	30%	45%
Percent of subjects 20/20 or better	88%	86%	93%
Percent of subjects 20/25 or better	96%	95%	99%

Uncorrected Near Vision	All (n=341)	Blended Vision or Bilateral Myopia (n=274)	Bilateral Emmetropia (n=67)
Percent of subjects J1+ or better	49%	55%	22%
Percent of subjects J1 or better	79%	85%	57%
Percent of subjects J2 or better	91%	95%	76%
Percent of subjects J3 or better	97%	99%	93%

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Take home message: no such thing as "one size fits all"

- Ideal scenario
 - Patient comes in already exposed to the possibility of ATIOLs
 - The IOL choices are narrowed down to one or two likely choices early in the consultation
 - Trust relationship is established early and proper informed decision is made
 - Vision outcome is personalized to the patient's needs

Happier patients!

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PRESBYOPIA PHARMACEUTICAL TREATMENTS:

Where Do They Fit into the Modern Refractive Surgery Practice?

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Presbyopia Pharmaceutical Treatments:

- Presbyopia drops reduce pupil size temporarily
- Assess pupil size before prescribing presbyopia drops
- Monitor side effects, particularly in low-light conditions
- Counsel patients on getting the most out of their presbyopia drops

Image Credit: Presbyopia Management: Exploring Options for Today's Patient (2021) Cataract & Refractive Surgery Today

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FDA-Approved Options: Pilocarpine 0.4% Dosing and Treatment-related Adverse Events

- Dosing: once or twice daily, with second dose after 3 to 6 hours
- Preservative Free
- NEAR-1 and NEAR-2 trials (N = 613)

Treatment-Related AEs	CSF-1 n = 308 n (%)	Vehicle n = 305 n (%)
Non-Ocular		
Headache	21 (6.8%)	2 (0.7%)
Eye/ocular pain	6 (1.9%)	1 (0.3%)
Nausea	4 (1.3%)	
Ocular		
Instillation site pain	18 (5.8%)	1 (0.3%)
Vision blurred	11 (3.6%)	2 (0.7%)
Conjunctival hyperemia	5 (1.6%)	1 (0.3%)
Instillation site pruritus	3 (1.0%)	1 (0.3%)
Visual impairment	3 (1.0%)	

Holland E, et al. Efficacy and Safety of CSF-1 (0.4% Pilocarpine Hydrochloride) in Presbyopia: Pooled Results of the NEAR Phase 3 Randomized, Clinical Trials. Clin Ther. 2024;46(2):104-113.

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FDA-Approved Options: Pilocarpine 0.4% Efficacy

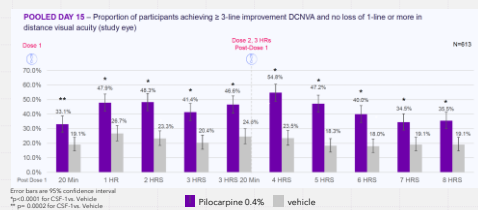
Pooled Results of NEAR 3 Phase 3 Trial

- The 2-dose regimen was evaluated twice-daily drop during a 2-week period
- 40% achieved the FDA endpoint of a 3-line gain on day 8 at 1 hour post dose compared with 19% of the vehicle group, with similar results out to 4 hours.
- Among those who could not achieve 20/40 near at baseline, approximately 80% had functional (20/40) near vision on day 15, with efficacy out to 8 hours.
- Lowest effective concentration of any miotic
- Effective at a minimum effective dose, possibly because of its near-neutral pH among other factors, which increases bioavailability
- Includes sodium hyaluronate and hydroxypropyl methylcellulose (lubricants for comfort)

Holland E, et al. Efficacy and Safety of CSF-1 (0.4% Pilocarpine Hydrochloride) in Presbyopia: Pooled Results of the NEAR Phase 3 Randomized, Clinical Trials. Clin Ther. 2024;46(2):104-113.

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FDA-Approved Options: Pilocarpine 0.4% Efficacy



Holland E, et al. Efficacy and Safety of CSF-1 (0.4% Pilocarpine Hydrochloride) in Presbyopia: Pooled Results of the NEAR Phase 3 Randomized, Clinical Trials. Clin Ther. 2024;46(2):104-113.

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FDA-Approved Options: Aceclidine 1.75% Dosing and Treatment-related Adverse Events

- Dosing: once daily
- Preservative Free
- CLARITY-1 and CLARITY-2 Trials (N = 466); CLARITY-3 (N = 217)

Treatment-Related AEs	Aceclidine 1.75%*
Instillation site irritation	20%
Dim vision	16%
Conjunctival hyperemia	8%
Ocular hyperemia	7%
Headache	13%

*Vehicle comparators have not been shared

Opportunity Times. <https://www.opportunitytimes.com/news/fda-approved-lens-therapeutics-via-for-the-treatment-of-presbyopia>. Updated July 31, 2025. Accessed August 29, 2025.

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FDA-Approved Options: Aceclidine 1.75% Efficacy

- The company reported that 71%, 71%, and 40% of participants in the phase 3 trials achieved the FDA endpoint at 0.5 hours, 3, and 10 hours on day 1, with higher percentages achieving 2-line gains.
- The drug was studied out to 6 months.

LENZ Therapeutics announces positive topline data from phase 3 CLARITY presbyopia trials. News release. LENZ Therapeutics. April 3, 2024. Accessed August 29, 2025. <https://lenztherapeutics.com/news/lenz-therapeutics-announces-positive-topline-data-from-phase-3-clarity-presbyopia-trials>

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Pipeline: Carbachol 2.75% and brimonidine tartrate 0.1% (fixed combination)

- Dosing: once daily
- Preservative Free
- BRIO-I and BRIO-II Trials: two pivotal phase 3 trials (N = 811)

BRIO-I: No treatment-related serious adverse events were reported.
BRIO-II: No treatment-related serious adverse events were reported after up to 12 months of continuous dosing.

Clinical Trial Vanguard. BRIO-I Phase 3 Study Shows Positive Topline Data for Brimonidine Tartrate + Carbachol (BRIO-I) in Presbyopia Treatment. <http://www.businesswire.com/news/home/2025/09/02/BRIO-I-in-Presbyopia-Treatment>. Accessed August 29, 2025.
Announcement Positive Topline Data from Phase 3 Pivotal Study BRIO-I of BRIMONIDINE TARTRATE + CARBACHOL (BRIO-I) for the Treatment of Presbyopia. Updated January 10, 2025. Accessed August 29, 2025.
Eyreline News. <https://eyeline.news/news/eyeline-therapeutics-announces-positive-topline-data-from-phase-3-pivotal-study-of-brimonidine-tartrate-plus-carbachol-for-the-treatment-of-presbyopia>. Accessed August 29, 2025.
Eyreline News. <https://eyeline.news/news/eyeline-therapeutics-announces-positive-topline-data-from-phase-3-pivotal-study-of-brimonidine-tartrate-plus-carbachol-for-the-treatment-of-presbyopia>. Accessed August 29, 2025.
Opportunity Times. <https://www.opportunitytimes.com/news/eyeline-therapeutics-announces-positive-topline-data-from-phase-3-pivotal-study-of-brimonidine-tartrate-plus-carbachol-for-the-treatment-of-presbyopia>. Updated January 6, 2025. Accessed August 29, 2025.

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Efficacy: Carbachol and brimonidine

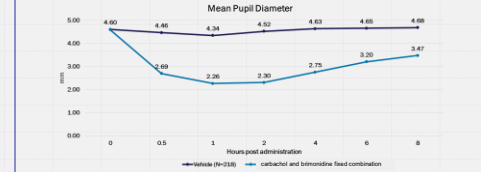
- ~85% of subjects had functional near vision of 20/40 or better at 1 hour, with ~50% still 20/40 or better at 10 hours.
- The combination demonstrated an increase in peak effect and duration over carbachol alone.
- The pupil constricts within 30 minutes and then gradually returns to normal throughout the day, with no tachyphylaxis in pupil response or near vision over the 12-month study.
- This is believed to be the only company to have measured reading speed using a validated scale in its clinical trials, reporting a 39% improvement, reflecting functional gains rather than simply improvements in visual acuity.*

McCauley C. Ophthalmology Times. <https://www.ophthalmologytimes.com/news/the-emerging-era-of-presbyopia-correcting-eye-drops-where-we-re-> The emerging era of presbyopia-correcting eye drops: What's next? updated August 20, 2025. Accessed August 26, 2025.

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Efficacy: Carbachol and brimonidine

- Differences between carbachol and brimonidine fixed combination and vehicle highly significant ($p < 0.001$) at all timepoints
- Within optimum pupil range for mesopic and low light conditions at most timepoints through 8 hours



1. Xu R, Tobias L, Bradley A. Effect of target luminance on optimum pupil diameter for presbyopic eyes. Optom 90 (Jul 2016): 1337-1349 1416.

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TAKE-HOME POINTS: Available Agents and Key Considerations for Topical Presbyopia Treatments

FDA-approved topical presbyopia therapies

- 0.4% pilocarpine
- 1.25% pilocarpine
- 1.75% aceclidine

Things to Consider for Each Patient

1. Maximize duration of effect
2. Minimize onset time
3. Limit reduction of distance and night vision
4. Minimize adverse events
5. Minimize impact on ocular surface health
6. Maximize drop administration comfort to increase compliance

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POLLING QUESTION

After participating in this activity, how confident are you in your understanding of topical treatment options for addressing presbyopia correction?

1. Very confident
2. Confident
3. Neutral
4. Not very confident
5. Not confident at all

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POLLING QUESTION

After participating in this activity, how often will you discuss with applicable patients a topical treatment for presbyopia correction?

1. Never
2. Rarely
3. Sometimes
4. Frequently
5. For every patient with presbyopia

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PRK (photorefractive keratectomy)

Follow-up visits: POD1, POW1, POM1, POM3, POM6/POY1

POD1:

- Subjective feedback from patient
- VA, AR
- SLE:
 - Are the BCLs in place?
 - Any sign of infection?

POW1:

- Subjective feedback from the patient
- VA, AR
- SLE:
 - Has the epithelium fully healed? If so, remove BCL.

POM1/3/6/12:

- VA, AR, MR, IOP. Is there residual refractive error? Is the patient happy?

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LASIK (laser assisted in-situ keratomileusis)

Follow-up visits: POD1, POW1, POM1, POM3, POM6/POY1

POD1:

- Subjective feedback from patient
- VA, AR
- SLE:
 - Is the LASIK flap flat, smooth, and with symmetric gutters? Any macro- or micro-striae?
 - Any signs of epithelial defects? Any signs of DLK or epithelial ingrowth? Is there meibum underneath the LASIK flap? Any foreign bodies underneath the LASIK flap?
 - Is the ocular surface dry?

POW1:

- Subjective feedback from the patient
- VA, AR, MRx, IOP
- SLE:
 - Same as above
 - Any signs of DLK, epithelial ingrowth, or infection? Any signs of flap movement?

POM1/3/6/12:

- Any changes to the above? Is there residual refractive error? Is the patient happy?

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SMILE (small incision lenticule extraction)

Follow-up visits: POD1, POW1, POM1, POM3, POM6/POY1

POD1:

- Subjective feedback from patient
- VA, AR
- SLE:
 - Is the SMILE pocket flat and smooth? Any macro- or micro-striae?
 - Any signs of epithelial defects? Any signs of DLK or epithelial ingrowth? Is there meibum in the pocket? Any foreign bodies in the pocket? Any stromal edema?
 - Is the ocular surface dry?

POW1:

- Subjective feedback from the patient
- VA, AR, MRx, IOP
- SLE:
 - Same as above
 - Any signs of DLK, epithelial ingrowth, or infection?

POM1/3/6/12:

- Any changes to the above? Is there residual refractive error? Is the patient happy?

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Q & A

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Thank You!

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