

Prescribing for the Presbyope (2 hours)

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Summary

Presbyopic patients require a unique perspective to appropriately correct their visual needs. This course will discuss the ocular physiology, anatomical considerations, new pharmaceutical advancements and also review the most recent developments in multifocal lens technologies to help optimize vision for this demographic of patients.

Learning Objectives

- 1) Understand the health of the ocular surface and its influence on successful contact lens wear for the presbyope
- 2) Understand ocular features that are critical to consider with multifocal lens wear
- 3) Discuss pharmaceutical agents that are currently being developed and their effect on presbyopes and contact lens wear
- 4) Understand current soft lens designs and appropriate selection
- 5) Discuss contemporary rigid gas permeable and hybrid lens technologies
- 6) Understand how to integrate these technologies appropriately into your practice

Outline

- 1) Contact Lens discomfort
 - a. Greater than 50% of patients experience contact lens discomfort
 - b. Is the number one reason for contact lens discontinuation
 - c. Greater than 50% of patients discontinuing lens wear is primarily due to discomfort
 - d. Patients often times become complacent with contact lens wear and uncomfortable wear associated with it
 - e. Requires solicitation of symptoms
 - i. Questionnaire – discuss various strategies
- 2) Understanding the Pathophysiology
 - a. Understanding the causes:
 - i. Poor aqueous production
 - ii. Deficient mucin layer
 - iii. Deficient lipid layer
 - iv. Understand the combined effects of the issues described
 1. DEWS II
 - b. Understanding the creation of a hyperosmotic tear film

- i. The creation of a pro-inflammatory environment
 - c. Understand the inflammatory consequences
 - d. Discuss potential effects the conjunctiva and cornea and ultimately
- 3) Dry eye
 - a. Case History
 - b. Diagnostic work up
 - i. Anterior segment examination
 - 1. Eyelashes – observe for debris and / or collarettes
 - a. Differentiate demodex blepharitis
 - 2. Eyelid blinking dynamics
 - 3. Eyelid Margins
 - 4. Meibomian glands
 - ii. Fluorescein assessment
 - 1. Fluorescein stain applied to eye
 - 2. Assess the anterior segment
 - a. Tear film break up time (TBUT)
 - b. Symptomatic Non-Invasive TBUT (SNIBUT)
 - c. Corneal staining
 - d. Lid wiper epitheliopathy / Upper lid margin staining
 - iii. Point of Care tests
 - 1. Tear Osmolarity
 - 2. Inflammadry
- 4) Treatment
 - a. Enviornmental modifications
 - b. Artificial Tears
 - c. Supplements
 - d. Prescription Treatment
 - i. Oral antibiotics
 - ii. Cyclosporine 0.05%
 - iii. Lifitegrast 5%
 - e. Meibomian gland function
 - i. Thermal treatments
 - ii. Topical therapy
 - iii. Essential fatty acids
 - iv. Role of cyclosporine
 - v. Role of lifitegrast
 - f. Punctal plugs
 - i. Review of the current literature – understanding when to perform punctal occlusion
- 5) Understand the unmet need with our presbyopic population
 - a. Increased need for visual correction
 - i. This demographic has the highest percentage of visual correction needs and the lowest rates of contact lens wearers
 - b. Decrease in contact lens wear

- i. Are patients decreasing their interest? The research suggests otherwise
 - 1. Once multifocal lenses were discussed, 75% of CL wearers and 60% of spectacle wearers were interested in trying them
 - ii. Do patients prefer monovision over multifocals? The research suggests otherwise
 - 1. Gupta N et al. Visual Comparison of Multifocal Contact Lens to Monovision. Optom Vis Sci 2009.
 - 2. Richdale, Mitchell and Zadnik. Optom Vis Sci. 2006 May; 83(5): 266-73.
 - 3. Benjamin. CL Spectrum 2007 July.
 - c. Many interested when educated about it
 - i. Increased functionality
 - ii. Perceived cosmetic benefits
 - d. Treating patients appropriately
 - i. Understanding the unmet need
 - ii. Prioritizing contact lenses for presbyopes
 - e. Relationship with improved practice profitability
 - i. Always do what is in the best interest of the patient and it will lead to what is in the best interest of the practice
- 6) Physiological characteristics of the aging eye past the ocular surface
 - a. Pupil
 - i. Over time pupil becomes miotic
 - ii. Pupil is critical for multifocal lens fitting
 - iii. Smaller pupil
 - 1. Difficult for multiple optical zones to enter through a small pupil appropriately
 - iv. Larger pupil
 - 1. Allows for more optical properties of the lens to appropriately enter the pupil
 - 2. Different consideration for soft multifocals and rigid gas permeable (RGP) multifocals
 - a. Soft lenses – simultaneous design
 - b. RGP lenses – depend more on appropriate translation of lens
 - b. Lenticular changes
 - i. Natural lens changes cause reduction in optical quality
 - ii. Lenticular opacification will decrease light penetration and increase light scatter to the retina
 - iii. Clinical considerations of lenticular changes in conjunction with pupil size is critical
 - c. Line of sight
 - i. Most patients do not have a line of sight that is through the center of the pupil

1. This creates challenges in assessing centration of a contact lens
2. Single vision lenses are not usually affected by this discrepancy
3. Multifocal lenses are heavily dependent on this relationship
 - a. The lens optics are aligned with the center of the lens
 - b. The lens may decenter temporally
 - c. The patients line of sight is the nasal region of the pupil
 - d. This creates a disadvantageous situation
 - e. This can be measured with:
 - i. Topographer
 - ii. Autorefractor
 - iii. Penlight
 - iv. Pupilometer
 - ii. Most patients have a line of sight that is nasally located through the pupil

7) Pharmacological Solutions

- a. Brimonidine (0.1%, 0.15%, 0.2%)
 - i. Alpha 2 Adrenergic agonist
 - ii. Mitigates pupil dilation
 - iii. May have a role with RGP multifocal lenses
- b. EV06 - lipoic acid choline ester 1.5%
 - i. Breaks down disulfide bonds within the lens
- c. Liquid vision – Aceclidine (miotic) and tropicamide
 - i. Pinhole effect correction
 - ii. Carbachol/brimonidine
- d. Acetylcholine agonist / alpha 2 agonist
 - i. Pinhole effect correction

8) Compare and contrast the unique visual needs of the presbyope

- a. Difficulty encountered because of multi-focal demands
 - i. Most commonly utilized lenses are simultaneous design
 - ii. Deliver a combination of distance and near optics
 - iii. Highly dependent on pupil size
- b. Increased interest in cosmesis and functionality
- c. Understanding how to effectively present presbyopic contact lens options to patients
 - i. The critical conversation – appropriately setting expectations
 - ii. The fitting process
 1. Reconsider your fitting process
 2. Assess ocular dominance
 3. After lenses placed on the eyes, demonstrate success immediately
 - a. Do not test distance vision first

- b. Have them view a near object – ie cell phone
 - 4. Slowly challenge their distance vision
 - a. Begin at the 20/50 line then slowly decrease the size of the line
 - 5. Don't forget about loose lens over-refraction
 - a. Binocular
 - b. Do not be surprised with additional "+" manifesting in the distance
 - iii. The follow up
- 9) Understand contemporary correction options for prebyopic patient
 - a. Simultaneous designs (soft lenses)
 - i. Aspheric design
 - ii. Concentric ring design
 - b. Rigid Gas Permeable Options
 - i. Near center-distance periphery
 - ii. Segmented bifocal
 - iii. Scleral lens design
 - iv. Hybrid lens options