

Visual Ergonomic Solutions for Today's Technology User

Prescription and Lens Optimization for Visual Comfort

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2012 American Academy of Optometry - Phoenix

Abstract:

Today's technology savvy user utilizes multiple screens, laptops, pad devices, smart phones, e-Books, and digital cameras, creating challenging visual demands in our daily lives. This course explores the detail required to fully assess the patient's environment and visual demands, and the specialty lenses available to provide an optimal solution.

The typical PAL that focuses at 'distance, intermediate, and near' is no longer the ideal lens for our technology enabled presbyopic patients. Additionally, non-presbyopes with compromised accommodative and/or convergence systems are in need of more assistance to cope with the visual demands of today's high-tech devices. This course assesses various visual demands associated with today's technology rich environment and presents ophthalmic lens solutions from a variety of lens design categories. Practical 'how to' scenarios will be used to provide a framework for successfully selecting and optimizing lenses to ideally meet our patient's visual needs.

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Course Outline

1. Rational and Objectives
 - a. Understand current visual challenges of today's technology user
 - b. Categorize current lens solutions
 - c. Understand lens performance and limitations
 - d. Present a systematic approach to selecting and optimizing lens solutions
2. Visual ergonomics of today's technology user
 - a. Work, home, mobile
 - b. Laptops, desktops, PDAs, cell phones, Pad Devices
 - c. Number, position, and size of screens
3. Presbyopic visual demands in the intermediate zone
 - a. Computer use
 - b. Office/work
 - c. Sports/hobbies
4. Non-presbyopic visual concerns
 - a. Classic presentation
 - b. Accommodative insufficiency
 - c. Convergence insufficiency
5. Prioritizing the patient's visual demands
 - a. What is important
 - b. Ask the right questions
 - i. Work environment
 - ii. Working distance
 - iii. Location – vertical angle of view

- iv. Horizontal Field of View requirements
 - v. Add determination
 - vi. Visual goals
- c. What doesn't work?
 - i. Issues with current solution
 - ii. Peripheral Aberration – location and amount
 - iii. Field of view limitations at intermediate, near, or both
 - iv. Neck and shoulder pain/discomfort
 - v. Excessive head movement
- 6. Occupational/computer lens designs
 - a. Differences from standard PALs
 - b. Field of View considerations
 - i. Optimization in the intermediate zone
 - c. Visual 'shape' considerations
 - i. Contour maps of occupational and progressive lenses
 - d. Lens power distribution
 - i. Intermediate to near
 - ii. Distance to near, with intermediate prioritized
 - iii. PAL – Distance/Intermediate/Near
- 7. Matching lens design to visual ergonomics
 - a. Design characteristics at the fitting cross
 - b. Rate of power change defines the visual experience
 - c. Systematic approach utilizing design, shape, and power distribution
- 8. Optimizing lens designs
 - a. Customizing occupational lenses to the patient's advantage
- 9. Case studies illustrating various design advantages of occupational progressives and computer lenses.