Myopia Control Panel - Has its Time Finally Come?

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Course Description

This course will review the current state of scientific and clinical knowledge and understanding of myopia control approaches for management of the “myopia epidemic”. Strategies including optical, pharmacological, and broader environmental approaches will be discussed. The apparent efficacy, benefits and drawbacks of specific interventions will be presented based on scientific evidence from published clinical studies, and also from a clinical perspective. The future of myopia management will also be considered in this broad overview.

Course Objectives

1. To update participants on the current status of the “myopia epidemic” at global and regional levels;
2. To review various clinical strategies for managing myopia in progressive myopic children, including optical, pharmacologic and other environmental approaches;
3. To summarize the scientific evidence for efficacy of these different clinical strategies for myopia control, including consideration of what is meant by “efficacy”;
4. To discuss the clinical aspects of different management strategies in terms of their risks, benefits and drawbacks for individual children;
5. To engage in an exercise of “crystal ball gazing” in regards to the future of myopia management in the short and long term.

Course Outline

1. Myopia prevalence
   - Regional variations
   - Ethnicity
   - Influence of heredity versus environment
2. Factors underlying increasing prevalence of myopia
   - Increase in amount of near work, accommodative stress, accommodative lag and facility
• Retinal defocus, central versus peripheral, Smith’s theory of peripheral hyperopic defocus
• Lighting conditions, indoor versus outdoor lighting levels, chromatic factors

3. Optical approaches to myopia control – accommodative treatment approaches
• Undercorrection
• Bifocal, PAL spectacles
• Executive bifocals
• Bifocal contact lenses – Aller’s work

4. Optical approaches to myopia control – reducing peripheral hyperopic defocus
• Spectacles with increasing plus in periphery
• Contact lens options with increased peripheral plus
• Orthokeratology
• Bifocal concentric bifocals
• Multifocal contact lenses, various designs

5. Pharmacological approaches
• Atropine
• Pirenzepine

6. Modifications to child’s environment
• Outdoor activity
• Lighting of environments
• Specialised lighting of specific wavelengths
• When do you start myopia control?
  o When the child becomes myopic
  o At age 8?
• When can you stop myopia control?
  o When children stop progressing
  o After age 15 or 16?

7. The way forward for myopia control?
• Choosing appropriate strategy for individual child
• The Myopia Profile
• Manipulating treatment parameters
  o Design of orthokeratology lenses
  o Peripheral power addition in bifocal contact lenses
  o Balancing efficacy with optical/visual quality
• Combining treatment strategies – e.g. OK plus atropine

9. Other clinical considerations
• How long do we need to persist with myopia control?
• Is “rebound” a significant concern?

10. Summary