

Course Title: Pros and Cons of the Different Myopia Management Therapies

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Financial Disclosures

I am a Myopia management clinical consultant for Topcon, a member of the Coopervision pediatric focus group, member of the advisory committee for Nevakar.

Course Description/Summary:

Myopia is an epidemic. Fortunately, in the last ten years, there have been significant advances in developing treatments for myopia progression. With all of the advancements in myopia management (MM) treatment options, it is difficult for optometrists to know which treatment options are the right ones for their myopic patients. This course will present the pros and cons of the different myopia management treatments. Furthermore, it will provide doctors with practical clinical pearls on orthokeratology lenses, dual focus daily disposable lenses, and low dose atropine therapy.

Learning Objectives

1. Learn about the latest innovations in myopia management treatments, such as FDA-approved dual focus daily disposable contact lenses, low dose atropine treatment, and new FDA-approved orthokeratology lenses.
2. Understand the pros and cons of each myopia management treatment modality.
3. Discuss some current research on the importance of axial length measurement for monitoring the efficacy of myopia management treatment.
4. Discuss the importance of consistency and methods for myopia management treatments.
5. Learn from case examples about the importance of choosing suitable myopia management treatment options.

Course Content

Cases

A. *typical myopia progression case: 13 YO white female*

1. baseline data

- (a) -3.00D myopia, OU
- (b) no family Hx of myopia
- (c) Started wearing glasses at 8 YOA
- (d) Patient is very active; patient participates in JROTC and track.
- (e) high school student, and works two jobs.

The patient was fitted with a paragon CRT lens, and she was able to achieve 20/20 Visual acuity in one night. The patient was thrilled to have perfect vision in just one night.

2. The patient was fitted with Ortho-k lenses and achieved 20/20 vision in just one night of correction. The patient was thrilled; we were able to restore her vision and her confidence level.

Case # two, 9-year-old girl, who refuse to wear glasses, and I will not wear glasses

- (a) Nine yo AA girl, -4.00 D sphere
- (b) first exam at six years old
- (c) 5 d progress in 3 years
- (d) Previous RX: +1.00 SPH OU. RX was two years old.

The Patient was first fitted with ortho-k lenses. However, the patient has difficulties with insertion and removal. The patient was then successfully fitted with CooperVision MiSight lenses.

Clinical pearls

Important considerations to keep in mind when choosing the best treatment for the patient.

When choosing the best myopia treatment for the patient, we need to consider not just the patient or their refractive error, but furthermore, we also need to look at the parent's lifestyle. Some treatments require several office visits, like ortho-k, which requires at least four visits within six months, while soft disposable multifocal lenses only require two visits, as well as atropine.

The number of follow-up visits comes into play when you have parents who have hectic schedules or patients who have two different homes. in this cases, a soft daily disposable dual focal lens is a better choice

C. A review on the latest development of the myopia epidemic

1. Facts about myopia

- (a) The prevalence of myopia has reached over 45% in the US.
- (b) Genetics, Environmental factor, such as; increase screen time, lack of sleep, and decrease outdoor time, all play a role in myopia progression
- (c) Younger myopes are at a higher risk for myopia progression
- (d) Better prognosis with younger patients and lower myopia
- (e) The World Council of Optometry has established the Global Myopia Awareness Coalition (GMAC), an advisory board whose mission is to promote awareness about childhood myopia and diseases associated with high myopia.

2. Dual Focus daily disposable contact lenses

- (a) Great for patients who already wear soft contact lenses and busy parents whose schedules may not be feasible for multiple visits requiring ortho-k.
- (b) Easy to FIT, no additional training or specialized equipment needed.
- (c) Fit, no specialized equipment required to fit
- (d) 45-55% effective in slowing axial length elongation

3. Advantages of Ortho-K lenses, following are some of the benefits of ortho-k lenses

- (a) Best for active children
- (b) #1 benefit, No daytime correction needed
- (c) 45-65% effective in slowing rate of axial length elongation

4. Disadvantage of Ortho-k lenses

- (a) That physicians need to learn how to fit lenses
- (b) Specialized equipment needed (Corneal topographer is a must)
- (c) Increase chair time

4. Advantages of Low Dose Atropine Therapy

- (a) Great for younger children, is minimally invasive, great to start patients on myopia management treatment.
- (b) One of the significant advantages of atropine is that no special equipment is needed to implement this treatment, although measuring Axial length would be ideal.

5. Disadvantages of Low Dose Atropine

- (a) Patients need to wear glasses or contacts.
- (b) Side effects might be bothersome to older children.
- (c) Poor compliance

In conclusion, myopia is a global issue, and prevalence continues to increase. However, new treatment options are being developed to combat myopia progression. Optometrists are at the forefront of the epidemic, and we have an opportunity to educate and help our patients.