MOYES EYE CENTER
Joy Through Sight

CORNEAL CROSS-LINKING
Co-Mangement

WHAT IS CORNEAL CROSS-LINKING?

- Also known as CXL, it is a minimally invasive treatment that strengthens the cornea, specifically the stromal tissue
- CXL is used to stabilize the stroma in a few degenerative corneal diseases including: keratoconus, pellucid marginal degeneration and corneal ectasia.

HOW DOES IT WORK?

- Riboflavin (Vitamin B2) solution is used to soak cornea followed by treatment with UVA light
- This treatment has been shown to increase the rigidity of the corneal stroma by 300% or more
    - Formation of covalent bonds (crosslinks)
    - Long term stabilization effect of new collagen

PURPOSE

- To halt or **stabilize** progressive corneal ectasia
- Prevent disease progression through corneal stabilization
    - Early disease = prevent necessity for rigid contact lens wear
    - Moderate disease = keep rigid contact lens wear successful and prevent need for corneal transplantation
- **Not intended to eliminate or reduce dependence on refractive correction**
- Maximum keratometry and visual acuity is typically worsened at 1 month followed by improvement and stabilization after 6 to 12 months.

PATIENT SELECTION

- Age: FDA approved for ages 14-65 with the ability to cooperate during treatment
- Progressive corneal ectasia (evidenced by historical progressive refractive change or topographical change)
    - Increase in spherical or cylindrical component of refraction
    - Decrease in best corrected visual acuity
    - Topography showing progressive changes in corneal shape (increased regular or irregular astigmatism) or progressive corneal thinning

INFORMATION NEEDED FOR CORNEAL CROSSLINKING EVALUATION

- Completed referral form found on the Moyes Eye Center Website
- Historical exam findings that support progressive corneal ectasia **(necessary for insurance approval)** :
    - Previous and current refractions showing progressive change
    - Previous and current K readings OR topographies showing progressive change
    - Recent BCVA with contact lenses or spectacles
- Prior to MEC examination, soft lenses must be left out at least 7 days and RGPs at least 2 weeks
    - This could be done one eye at a time, addressing eye that is in most need first.

POTENTIAL CONTRAINDICATIONS TO TREATMENT

- Pachymetry less than 400 microns
- Prior herpectic infection
- Severe ocular surface disease
- Autoimmune disorders
- Significant corneal scarring
- Vision can no longer be corrected by RGP
- Pregnant or breastfeeding

POTENTIAL COMPLICATIONS

- Delayed epithelialization
- Corneal haze
- Infection
- Increased IOP from steroid use
- Endothelial decompensation with corneal edema
- Treatment failure

POST-OPERATIVE INSTRUCTIONS

- Recovery will be similar to Photo Refractive Keratectomy (PRK)
- Topical Medications:
    - Moxifloxacin q2HR x 1 day, then QID x 1week or until re-epithelialization is complete
    - Prednisolone Acetate 1% QID x 2 weeks, TID x 2 weeks, BID x 2 weeks, QD x 2 weeks.
        - Prednisolone taper schedule may be adjusted depending on speed of epithelialization
- Oral Medications:
    - Hydrocodone 5/325mg or 7.5/325mg dispense 14 tablets, q4-6 hr as needed for pain no more than 5 tablets per day
- Frequent use of non-preserved artificial tears
- Bandage contact lens
- Avoid unprotected exposure to sunlight
- Avoid rubbing the treated eye for the first 5 days postoperatively

POST-OPERATIVE VISIT SCHEDULE AND EXPECTATIONS

- Day 1
    - Visual Acuity, slit lamp examination, review medications and pain control
    - Evaluate good bandage contact lens fit. No need for removal.

- Day 3-5
    - VA, slit lamp examination, Bandage CL removal, review medications
- 1 Month
    - VA, AR, MRx, IOP, slit lamp examination, topography
    - EXPECT STEEPENING ON CORNEAL TOPOGRAPHY/KERATOMETRY
    - May consider temporary contact lens to bridge vision while healing
    - Visual acuity may continue to shift for 6-12 months

- 3 Month
    - VA, AR, MRx, IOP, slit lamp examination, topography
    - May consider temporary contact lens to bridge vision while healing
    - May consider temporary glasses
    - Visual acuity may continue to shift

- 6 Month
    - VA, AR, MRx, IOP, slit lamp examination, topography
    - Evaluate contact lens or glasses correction and consider change if necessary

- 12 Month
    - VA, AR, MRx, IOP, slit lamp examination, topography
    - Additional treatment may be considered if continued progression is evident on topography

ADDITIONAL CROSS LINKING RESOURCES

- You're Top 12 Crosslinking Questions - Answered!
    - https://www.reviewofoptometry.com/article/your-top-12-crosslinking-questionsanswered
- Avedro Website
    - www.avedro.com