Refractive Keratoconus Surgical Clinic: Evan D. Schoenberg, M.D.

I offer the following surgical treatments which each can have a role for keratoconus patients:

- Corneal crosslinking ("CXL")
- Topography guided PRK, with or without CXL
- INTACS, with or without CXL
- ICL and Toric ICL
  - Treats up to -16 D spherical equivalent with up to 4 D of refractive astigmatism
- Refractive lens exchange (femtosecond-assisted cataract surgery with toric IOLs)
- Corneal transplantation

CXL indications:

- Progressive keratoconus, pellucid marginal degeneration, & corneal ectasia at any age
- Prevention of progression in newly diagnosed patients under 25 years old with spectacle BCVA 20/25 or worse
- Combinatorial effect when providing refractive treatment with topography guided PRK or INTACS.
- Covered by most commercial insurance plans with documentation of progression.
  - *Sample criteria (BCBS)*: 1 D increase in max K, 1 D increase in refractive astigmatism, increase in myopia by -0.50 D, or ≥0.1 mm in the back optical zone radius in rigid contact lens wearers.

Topography guided PRK:

- Performed concurrent with CXL ("simultaneous") or 6 months to 1 year after CXL ("sequential") depending on clinical specifics
- Mild to moderate keratoconus, mild pellucid marginal degeneration, or corneal ectasia with a relatively clear central visual axis
- Must be able to obtain high quality and reproducible topographic topographic maps on the Vario Topolyzer for planning
- Myopic or myopic astigmatism (best assessed in minus cylinder; sphere should be 0 or negative, as should cylinder). Hyperopic and mixed astigmatism can not be treated effectively.
- reliable and relatively high quality spherocylindrical refraction
- Goal: for patients who desire reduced dependence on corrective lenses, reduce irregular astigmatism & treat part of the refractive errror. Improve UCVA to some extent, spectacle BCVA to a greater extent, and improve success with contacts as desired. In some cases this may prepare the eye for further refractive treatment (traditional PRK, toric ICL, RLE, etc).
- Not covered by insurance

INTACS:

- If evidence of progressive disease or if augmentation of effect is desired, performed in rapid-sequential combination with CXL
  - *INTACS first; CXL 2 to 4 weeks later*
- Mild to severe keratoconus or corneal ectasia
- Clear central visual axis
- Generally flattens the steepest aspect of the cornea (single segment) and/or flattens the central cornea (paired segments, potentially asymmetrically placed)
- Goal: Provide opportunity for Improved visual quality with a soft toric contact or with glasses. Improve ability to fit a speciality contact lens and improve comfort, particularly with RGPs. May improve UCVA. In some cases this may prepare the eye for further refractive treatment (topo-guided PRK, traditional PRK, toric ICL, RLE, etc).
- Covered by most commercial insurance plans

In addition to our in-house specialty contact lens clinic, we collaborate with optometrists in the Atlanta area to provide resources including training in the prescribing of speciality contact lenses.