

# Detecting Keratoconus

The American Academy of Ophthalmology Corneal Ectasia Preferred Practice Pattern® recommends prompt referral of patients who have been diagnosed with progressive keratoconus to a specialist who can perform corneal cross-linking.<sup>1</sup> Early detection of keratoconus is important to ensure timely intervention before visual function is lost.

When you see patients with the following signs and symptoms, consider keratoconus as a possible diagnosis.



## Family History

- Family history of keratoconus
- Chronic eye rubbing and/or atopic eye diseases
- Systemic associations
  - Down syndrome
  - Connective tissue disorders



## Patient Symptoms

- Reduced visual quality or loss of vision
- Glare, halo, ghosting, and/or monocular diplopia (especially at night)
- Frequent changes in glasses prescriptions or contact lens refits

## Possible Examination Findings

- Refraction & visual acuity:
  - High astigmatism  $\geq 2.00$  D or increase in astigmatism  $\geq 1.00$  D
  - Increase of myopia  $\geq 0.50$  D or changes inconsistent with patient age
  - Vision does not correct to 20/20, or visual quality complaints associated with higher-order aberrations
- Retinoscopy:
  - Scissor reflex
  - Difficult retinoscopy
- Autorefraction/Autokeratometry:
  - Error messages
  - Increase in K values from prior visits or  $K > 47.00$  D
- Manual Keratometry:
  - Distorted mires
  - Increase in K values from prior visits or  $K > 47.00$  D
- Topography/Tomography:
  - Asymmetry, especially inferior to superior
  - Inferior steepening or high ( $> 47.00$  D) K values
  - Skewed axis (non-orthogonal axis)
  - Inferior thinning
  - OU  $K_{max}$  difference greater than 2.00 D

Waiting for iLink™ treatment can lead to further progression.

Age-dependent suggested wait times<sup>2</sup>:

- No longer than 6 weeks for patients younger than 18 years old
- No longer than 12 weeks for patients over 18 years old

No topographer available? No problem.

Visit [iLinkExpert.com](http://iLinkExpert.com) to connect with a doctor who performs iLink™ and can discuss referrals for imaging. The sooner you make a referral, the sooner patients can be treated with FDA-approved cross-linking.

# Referral Form for Cross-linking Consultation

Please note all findings that apply and include all available supporting documentation (eg, charts and/or imaging).

**Patient:** \_\_\_\_\_ **DOB:** \_\_\_\_\_

Documenting **one or more** of the following clinical changes within 24 months when conservative treatments have failed is important to helping insurance carriers determine the medical necessity of cross-linking.

## 1. An increase of $\geq 1.00$ D in steepest keratometry

OD Date:  $K_{Max}$  :  OS Date:  $K_{Max}$  :  
Date:  $K_{Max}$  : Date:  $K_{Max}$  :

## 2. Increase of $\geq 1.00$ D of cylinder (Cyl) in subjective or manifest refraction

OD Date: Cyl:  OS Date: Cyl:  
Date: Cyl: Date: Cyl:

## 3. A myopic shift of $\geq 0.50$ D of spherical equivalent refractive error (MRSE)

OD Date: MRSE:  OS Date: MRSE:  
Date: MRSE: Date: MRSE:

## 4. A decrease of $\geq 0.10$ mm in back optical zone radius (BOZR) in corneal rigid gas permeable lenses

OD Date: BOZR:  OS Date: BOZR:  
Date: BOZR: Date: BOZR:

## 5. Progressive deterioration of best spectacle corrected visual acuity (BSCVA) worse than 20/20

OD Date: BSCVA:  OS Date: BSCVA:  
Date: BSCVA: Date: BSCVA:

## 6. Failed spectacle correction or contact lenses OD OS

Applicable (continued progression in a contact lens wearer, and/or inadequate function in glasses or contacts, and/or contact lens intolerance)

Not Applicable (no progression and adequate function in glasses or contacts)

## Questions About Insurance Coverage for Cross-linking?

Find details regarding your patients' insurance policies at: [www.glaukos.com/corneal-health/ilink-reimbursement/](http://www.glaukos.com/corneal-health/ilink-reimbursement/)

REFERENCES: 1. Garcia-Ferrer FJ, Akpek EK, Amescua G, et al; American Academy of Ophthalmology Preferred Practice Pattern Cornea and External Disease Panel. Corneal Ectasia Preferred Practice Pattern®. *Ophthalmology*. 2019;126(1):P170–P215. 2. Romano V, Vinciguerra R, Arbabi EM, et al. Progression of keratoconus in patients while awaiting corneal cross-linking: a prospective clinical study. *J Refract Surg*. 2018;34(3):177–180.

### INDICATIONS

Photrexa® Viscous (riboflavin 5'-phosphate in 20% dextran ophthalmic solution) and Photrexa® (riboflavin 5'-phosphate ophthalmic solution) are indicated for use with the KXL System in corneal collagen cross-linking for the treatment of progressive keratoconus and corneal ectasia following refractive surgery.

### IMPORTANT SAFETY INFORMATION

Corneal collagen cross-linking should not be performed on pregnant women.

Ulcerative keratitis can occur. Patients should be monitored for resolution of epithelial defects.

The most common ocular adverse reaction was corneal opacity (haze). Other ocular side effects include punctate keratitis, corneal striae, dry eye, corneal epithelium defect, eye pain, light sensitivity, reduced visual acuity, and blurred vision.

These are not all of the side effects of the corneal collagen cross-linking treatment. For more information, go to [www.livingwithkeratoconus.com](http://www.livingwithkeratoconus.com) to obtain the FDA-approved product labeling. You are encouraged to report all side effects to the FDA. Visit [www.fda.gov/medwatch](http://www.fda.gov/medwatch), or call 1-800-FDA-1088.