

## WORLD SIGHT DAY

## INSIGHT

MEDIA  
PLANET**CXL: AN EFFECTIVE  
NEW TREATMENT FOR  
KERATOCONUS**

**You may not have heard of keratoconus, but—according to Dr. Mark Cohen, co-national medical director of LASIK MD, a national provider of laser vision correction, and corneal specialist at the University of Sherbrooke—approximately one in 500 people suffer from this disorder.**



Dr. Mark Cohen, LASIK MD's co-national medical director, examining a patient, using a retinal camera.

Keratoconus is a slow, progressive eye disease affecting the cornea, the clear, dome shaped surface of the eye, causing it to bulge forward into an irregular cone shape. This can result in a substantial decrease or distortion of vision, such as seeing multiple images of an object. The disease is usually diagnosed during the adolescent years. During this time the changes to the cornea tend to progress faster whereas in the patient's twenties or thirties, they level off and plateau.

Though the causes of keratoconus are largely unknown, Cohen says rubbing one's eyes repeatedly can potentially stretch and damage the cornea. "The persistent rubbing of eyes can cause the cornea to become misshapen," he says, "possibly leading to this condition." Allergy sufferers, because of constant eye-rubbing, are also at risk. Genetic factors may also play a role.

**Treatment Options**

Traditionally, eyeglasses or soft contact lenses may be used to correct the mild nearsightedness and astigmatism caused in the early stages of keratoconus.

However, in the past 10 years, a new technique known as corneal collagen cross-linking (CXL) has been developed

to treat keratoconus. Cohen says the method originated in Europe and has been available in Canada for the past four years.

The CXL procedure involves initially removing the surface skin of the cornea, then placing a few drops of the vitamin riboflavin onto the cornea. Ultraviolet light is then applied to the eye, prompting collagen bonds to form, which strengthens the cornea.

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Cohen says LASIK MD clinics have successfully performed over 500 CXL procedures, and they've seen excellent results.

“When a keratoconus patient undergoes CXL, the elasticity of the cornea dramatically decreases, effectively becoming stiffer,” he adds. “As a result, this procedure stops the disease from progressing.”

“UV exposure from the sun naturally strengthens the cornea with age,” says Cohen. “This is likely why the condition tends to stop progressing once a keratoconus patient reaches their twenties or thirties.” He says the CXL procedure speeds up that natural process.

An additional benefit to CXL is the ability to combine it with laser vision correction. The laser is used to smooth the surface of the cornea and correct blurry vision. The patient can then undergo CXL to strengthen the cornea.

“Patients may still need to wear corrective lenses,” says Cohen. “But laser eye surgery combined with CXL makes wearing glasses or contacts much more manageable.”

Just a few years ago, keratoconus patients didn't have a way to stop this progressive disease, so in severe cases it led to the need for a corneal transplant. Cohen is hopeful that corneal transplants as a treatment for keratoconus will become a thing of the past.

“When the diagnosis is made in the early stages of the disease, that’s when we see the best results,” says Cohen. “Our hope in the near future is to detect keratoconus patients at even younger ages, and to intervene as soon as possible.” ■