



Robert L. Epstein, MD
Board certified ophthalmology
Dr. Epstein is medical director of the Mercy Center for Corrective Eye Surgery and is a nationally recognized expert in procedures to reduce or eliminate

dependency on eyeglasses including bifocals. He was first in the Midwest to perform the following new surgical techniques: radial keratotomy, LASIK, sutureless cataract surgery, and presbyLASIK (to eliminate bifocal need). He is now one of only a very few U.S. physicians government-designated to be principal investigator for an FDA-monitored keratoconus treatment study.

Dr. Epstein has a BS in electrical engineering from the University of Maryland, an MS from the Polytechnic Institute of New York, an MD from the New Jersey Medical School, and an MBA from the University of Chicago. He completed his internship and residency at the University of Illinois and is certified by the American Board of Ophthalmology. In addition, he has written two books on eye surgery, and has been awarded several U.S. patents.

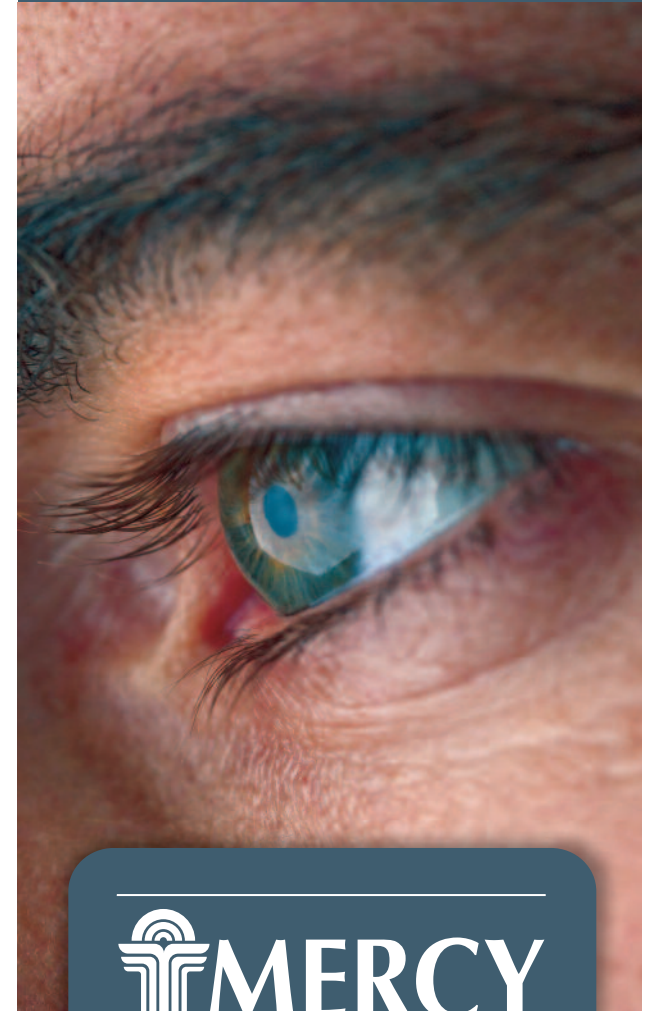


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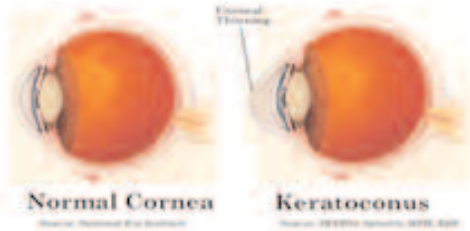
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Keratoconus Treatment Options

The logo for Mercy Health System, featuring a stylized white cross symbol to the left of the word "MERCY" in a large, bold, sans-serif font, with "HEALTH SYSTEM" in a smaller font below it. The logo is set against a dark blue rounded rectangular background.

MERCY
HEALTH SYSTEM

What is keratoconus?



Keratoconus is a condition in which the cornea becomes weak, progressively thinner, and irregular in shape. Instead of a normal, relatively round shape resulting in clear vision, the cornea in keratoconus can become cone shaped. This can interfere with the ability to see clearly. Often keratoconus patients first require glasses, then contact lenses. Family members of keratoconus patients should be tested. People whose eyeglass prescription is changing, especially with more astigmatism, should be checked for early keratoconus.

Glasses and contacts can improve your vision

Glasses help vision. Keratoconus eyes usually have worsening astigmatism.

Hard contact lenses cover the irregular corneal surface to offer better focus of light. Some newer contact lenses have a hard center and soft exterior for more comfort.

Glasses and contacts help vision but do nothing to treat the keratoconus disease.

Other forms of treatment

Intacs® are very tiny plastic braces made of PMMA, the same material used in many hard contact lenses and in the intraocular lens implants used in cataract surgery. They are approved by the FDA.



The tiny braces are surgically placed within the diseased cornea to make the cornea more regular in shape. Because the cornea is totally numbed with anesthetic eye drops, Intacs can be placed painlessly during an outpatient procedure.

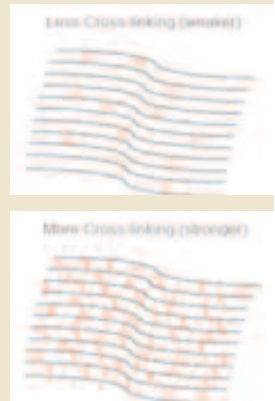


Laser vision correction in the form of LASIK is not performed in keratoconus, but there is a place for surface laser vision correction to rehabilitate vision damaged by keratoconus when it is done in combination with other treatments.

Cross-linking acts to strengthen and harden the weakened keratoconic cornea. Riboflavin eye drops and low-dose ultraviolet light cause a chemical reaction that produces extra bonds. The process has been likened to the vulcanizing of soft rubber to make rubber tires. But in cross-linking, there is no heat used.

In keratoconus, it is believed that the cornea does not have sufficient cross-linking in its structure. This leads to the cone-like shape.

The riboflavin interacts with the low-dose UV to produce oxidation and free radicals that make new bonds. Cross-linking improves the cornea's structural strength within the cornea and stops the shape of the cornea from getting worse.



Riboflavin also absorbs the UV light. This shields the inner eye so that the reaction occurs only within the cornea. Cross-linking was developed in Switzerland in 1998 and is practiced worldwide. In the U.S., it is being studied by the FDA. The Mercy Center for Corrective Eye Surgery is one of only a few sites in the U.S. that the FDA allows to offer cross-linking, a treatment we do at our office.

Corneal transplant

Replacing the center 60% of the cornea with tissue from a cadaver cornea can provide sight for people whose keratoconus has progressed too far for simpler treatments.

Generally, corneal transplants are not rejected, but corneal transplant patients need to take anti-rejection eye drops for at least a year. Patients must also be aware of signs of rejection, such as increasing sensitivity to light.

Corneal transplant has been the mainstay of treatment of keratoconus when less-invasive measures can no longer work. After transplant, hard contacts need to be worn for adequate vision. Some people can have laser vision correction to become free of contacts.

Keratoconus can progress even after transplant. In the future, cross-linking may be used to further stabilize the results of corneal transplants.