

## Implantable Contact Lenses (Phakic Intraocular Lenses)



**How it works:** This technology was first approved by the FDA in September 2004, and many advances have been made since that time. These devices were developed to treat high levels of nearsightedness and are implanted either in front of or behind the

iris (the colored part of the eye) and the patient's natural lens is not removed. Surgeons at the Moran Eye Center were part of the clinical trials for this procedure and have been working with the lenses since 1997.

**Who can benefit?** This procedure is approved for very high corrections. Phakic IOLs are used in patients with correction -3.00 diopters to -20.00 diopters of correction, with limited amounts of astigmatism.

## Clear Lens Extraction (CLE)



**How it works:** Clear Lens Extraction is similar to cataract surgery. Both involve the removal of the eye's natural lens, replacing it with a synthetic lens. Different synthetic lens replacement options include correction for both distance and near vision as well as lenses

that can correct for astigmatism. In some cases, the synthetic lens corrects for distance vision, only requiring a pair of reading glasses for close work.

**Who can benefit:** This procedure may be used for patients who have farsightedness or nearsightedness combined with astigmatism. Presbyopic patients can also benefit.

## Multifocal Lenses



**How it works:** In 2005 new technology became available for patients desiring both uncorrected distance and near vision after lens implant surgery. These specially designed lenses allow the light to be processed in such a way as to facilitate distance and near vision without

glasses. Not everyone is a candidate for this technology, and certain side effects may occur.

**Who can benefit?** Generally these lenses are used in patients over 40 who suffer from cataracts or extreme levels of nearsightedness or farsightedness.

## The Moran Eye Center's Refractive Surgeons



**Mark D. Miffin, M.D.**, is a Clinical Professor and Director of the Cornea and Refractive Surgery Division and the Cornea Fellowship training program. He specializes in advanced vision correction surgery (LASIK, PRK) and all types of intraocular lens surgery and cornea transplantation. He has two decades of experience in performing and teaching advanced vision correction surgery as well as clinical research in this field. Dr. Miffin received his MD degree from the University of Nevada and completed his residency at the University of Utah. Fellowships in cornea and refractive surgery were completed at the University of Utah and in Scottsdale, Arizona.



**Amy Lin MD**, is a Clinical Associate Professor who specializes in the medical and surgical treatment of corneal and anterior segment diseases. Her practice includes LASIK, PRK, and all types of intraocular lens surgery and cornea transplantation. Dr. Lin received her MD degree from Northwestern University Chicago, IL residency training at Northwestern University Chicago, IL and fellowship at Northwestern University Chicago, IL



**Brian Zaugg MD**, is a Clinical Associate Professor who specializes in the medical and surgical treatment of corneal and anterior segment diseases. He also does research focusing on evaluating phacoemulsification technology and exploring effects of blast injuries on the visual system. He attended The University of Utah for his undergraduate degree and medical school prior to continuing there for his residency training in Ophthalmology at the Moran Eye Center.

## THE MORAN EYE CENTER

The University of Utah's John A. Moran Eye Center is one of the top eye care and vision research centers in the world and the largest eye center between Texas and the West Coast. It serves the eight million residents of the Intermountain West and is home to the University of Utah School of Medicine's Department of Ophthalmology and Visual Sciences. The center specializes in the treatment and research of all eye diseases. The center's refractive surgery program is known for its comprehensive and conservative approach to laser and non-laser vision correction. Based at the Moran Eye Center's Midvalley location, the refractive surgery division is committed to educating patients about the risks and benefits of vision correction surgery. The program is recognized as a regional referral center for patients with complex LASIK cases or who have experienced complications following refractive surgery. The refractive surgery training program and fellowship is consistently rated as one of the top 2 or 3 in the U.S.

 UNIVERSITY OF UTAH  
HEALTH CARE | Moran Eye Center   
[www.moraneyecenter.org](http://www.moraneyecenter.org)

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65 Mario Capecchi Drive  
Salt Lake City, Utah 84132

**Moran Eye Center  
Midvalley Health Center**  
243 East 6100 South  
Murray, UT 84107

For more information, or to schedule  
a free refractive surgery screening, call

**801-585-EYES (3937)**

Moran Eye Center 

## LASIK & Much More

Come See The Latest Options  
For Vision Correction



## The eye - how it works



In order to see clearly, rays of light pass through the cornea, pupil and lens of the eye. The image is focused directly on the retina.



In a **nearsighted** person, the cornea is too steep or the eye is too long and the focal point is in front of the retina resulting in blurred vision.



In a **farsighted** person, the focus of the eye is behind the retina. People who are farsighted may have trouble seeing at distance and near.



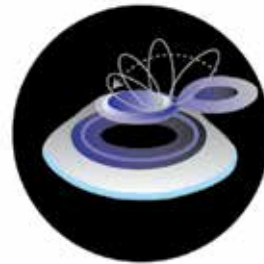
**Astigmatism** occurs when the eye is not completely round but shaped more like a football. Light that enters the eye focuses on more than one spot on the retina, resulting in blurring of vision. Astigmatism can occur with nearsightedness or farsightedness.

**Presbyopia** is a condition where with age, the eye exhibits a progressively diminished ability to focus on near objects.

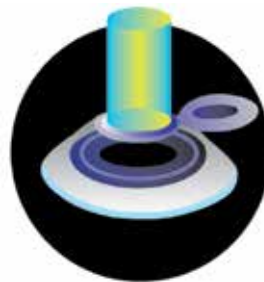
## What is LASIK?

If you are one of the 70 million people currently diagnosed with myopia (nearsightedness), hyperopia (farsightedness), astigmatism, or a combinations of these conditions, you probably have heard of LASIK - Laser In-situ Keratomileusis. This revolutionary technique uses excimer laser technology to precisely reshape the cornea, effectively treating vision problems. As a result of LASIK, many patients have found their vision restored up to, or better than, 20/20.

A word of caution before you throw out your glasses or contacts: LASIK treatment is not for everyone. There are good and bad candidates for LASIK. The purpose of this brochure is to explain which patients are eligible for LASIK and to introduce other types of vision correction procedures that may better suit your needs.



*LASIK involves creating a thin flap on the cornea.*



*Pulses of the laser reshape the cornea.*

**How it works:** LASIK utilizes the excimer laser to reshape the cornea under a protective layer of tissue. The excimer laser uses cool ultraviolet light to treat the cornea. It does not treat beyond the cornea and is extremely precise. The procedure allows for rapid visual recovery within 24 hours, and there is minimal postoperative discomfort.

**Who can benefit?** LASIK candidates must fall within established parameters for refractive error, corneal thickness and pupil size. The best way to find out whether or not you're a candidate for LASIK is to have a thorough examination by a qualified refractive surgeon.

## All Laser LASIK

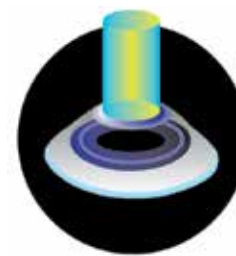
In the past, a microkeratome blade was utilized to create the LASIK flap. While this technology works very well, it carries a higher risk of complications. LASIK flaps at the Moran Eye Center are created exclusively with the femtosecond laser which allows for a more consistent and reproducible procedure and safer, more precise outcomes..

**How it works:** The flap-cutting laser creates a pulse of energy for the duration of a femtosecond or 10<sup>-15</sup> seconds. The short duration prevents any damage to the surrounding tissue. This laser technology produces thousands of pulses to create a perfectly shaped flap on the cornea.

*If you are not eligible for LASIK, all is not lost. There are a variety of other vision correction procedures that may offer a solution.*

## Other Laser Procedures

### Advanced Surface Ablation-Photorefractive Keratectomy (PRK)



*An excimer laser is used to treat the surface of the cornea during PRK.*

**How it works:** This procedure uses an excimer laser to gently and accurately reshape the surface of the cornea similar to LASIK, but no flap is created. The patient goes home with a soft contact lens bandage over the eye for 3-5 days. Visual recovery with PRK is about one to three weeks. Statistical outcomes for PRK are equivalent to LASIK outcome statistics.

**Who can benefit?** Most patients who are eligible for LASIK can have PRK. This technique may be preferred for patients with thinner corneas or severe dry eyes.

## Non-Laser Procedures

### Collagen Cross-Linking

Keratoconus is a degenerative cornea disorder resulting in varying degrees of thinning and steepening of the cornea. Keratoconus makes LASIK or PRK unfeasible. This disorder often requires the use of rigid gas permeable lenses for adequate vision. Severe cases may necessitate a surgery called INTACS or even corneal transplantation. Collagen cross-linking (CXL) is a relatively simple, outpatient procedure and is becoming a promising alternative to these more invasive cornea surgeries.

Corneas are treated with riboflavin eye drops and then exposed to ultraviolet A (UVA) light. This induces the formation of chemical bonds between the cornea collagen fibers which increase the strength and stiffness of the cornea.



*The Alcon WaveLight Refractive Suite is the fastest refractive surgery platform available in the United States. By combining both the flap creation and the vision correction procedures into one ergonomically-designed unit, data transfer capabilities are enhanced, the time between procedures is minimized, and the patient has more comfort.*