

# Laser-assisted procedure revolutionizes cataract surgery

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Cataracts — a clouding of the eye's natural lens — are commonly associated with aging and are the leading cause of blindness in the United States. It is estimated that more than 22 million Americans over the age of 40 have cataracts, and that more than half of the population will experience this condition by the time they are 80 years old.

Treatment of cataracts involves surgery to remove the cloudy lens and replace it with an artificial lens, or intraocular lens (IOL). With more than 3 million cataract surgeries performed yearly in the United States, it is the most commonly performed elective medical procedure under the Medicare system. In Hawaii, it is estimated that close to 15,000 cataract procedures were performed last year.

Technology has improved the safety and outcomes of this surgery over time. Improvement in surgical techniques and advances in IOL technologies have decreased surgery time and made visual recovery more rapid. The latest IOL technologies reduce the need for eyeglasses for either distance sight or reading post surgery.

The latest technological advance is laser-assisted cataract surgery. As a tool in eye surgery, "laser" is an acronym for light amplification by stimulated emission of radiation. Lasers are commonly used in ophthalmology and have been used for many years for the treatment of diabetic eye disease and glaucoma. Over the past 15 years, laser technology has been used to help millions of people be less dependent on glasses and contact lenses with the LASIK (laser-assisted in situ keratomileusis) procedure, which changes the shape of the cornea to eliminate or reduce the need for glasses and contact lenses in cases of severe myopia (nearsightedness). More recently LASIK has become even safer and more precise with the use of a laser to create a corneal flap called the femtosecond laser. Now this femtosecond laser technology is being applied to cataract surgery.

In traditional cataract surgery, several small incisions are made manually with a blade. The lens is then broken up and removed with high-frequency ultrasound by a technique known as phacoemulsification that has remained largely unchanged for 20 years.

With this new laser-assisted cataract surgery, an image-guided femtosecond laser allows the surgeon to perform incisions with efficiency and precision without the use of a blade. The laser assists in breaking up the lens so that removal of the cataract requires less ultrasound energy. The laser also allows for better management of the patient's corneal shape, increasing the likelihood of not needing glasses after surgery.

The LenSx system is the first femtosecond laser technology to be FDA-approved in the United States to perform the key elements of cataract surgery. As expected, new technology comes with additional costs. There is a supplementary fee attached to the laser itself as well as royalties to the laser manufacturer. Most likely a portion of these costs will be passed on to the patient. It is hoped the increased safety profile and improved outcomes will more than justify the increased costs.

The precision of this new laser technology may represent the next step in perfecting cataract removal and will be available in Hawaii in the beginning of 2012. Just in time for all the baby boomers coming of age!

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