

LASER ASSISTED CATARACT SURGERY

by George Shaker, MD, FACS

Dr. George Shaker and his colleagues at the Medical Eye Center along with the Elliot Health System's Dartmouth-Hitchcock 1-Day Surgery Center have teamed up to bring exciting new technology – **laser assisted cataract surgery** – to our community. For years, patients have asked us if a laser can be used to perform cataract surgery. At long last, the answer is *yes!*

The type of laser used is called a **femtosecond laser**. It is the same type of laser that is used to perform part of the LASIK procedure to correct near-sightedness, far-sightedness and astigmatism. It is able to make very precise incisions and separate the cataract into small pieces. It is the precision of the laser that makes it effective, especially when we are trying to optimize the patient's vision without glasses after surgery. We are using the Alcon *Lenx* laser, which has been used to perform more than 95,000 cataract surgeries in the US alone.

What is cataract surgery and how does laser assisted surgery differ from conventional surgery?

Broadly speaking, cataract surgery involves removing the cloudy lens of the eye (the *cataract*) and placement of an artificial intraocular lens (the *implant*) into the eye. The procedure includes the following steps that are done differently between **conventional** and **laser assisted** surgery:

- Creation of incisions to gain access to the cataract.
- Opening the front of the capsule around the lens.
- Creation of incisions to treat astigmatism
- Division of the cataract into small pieces that can be more easily removed from the eye.

In conventional surgery, these steps are done manually, while in laser assisted surgery



Using the Alcon Lenx femtosecond laser, the surgeon is shown planning the laser portion of the procedure, which will take 30-60 seconds.

they are done by the laser. In the case of laser assisted surgery, the surgeon plans the procedure ahead of time based on measurements taken in the office, and that plan is programmed into the laser prior to surgery. Both procedures include the use of an ultrasound/vacuum device (phacoemulsification) to remove the pieces of cataract. Also, in both cases, the implant is placed into the eye after the cataract is removed.

What are the potential benefits of laser assisted cataract surgery?

- Precise incisions and astigmatism treatment may improve our ability to achieve vision without glasses.
- Better positioning and stability of the implant may lead to better quality of vision over time.
- Reduced ultrasound energy to remove the cataract may reduce the risk of corneal injury from surgery.

When is laser-assisted surgery considered?

You can think about the goals of cataract surgery as falling into two categories: in the first case, the individual wants clearer vision, but reducing dependence on glasses is *not* a concern; in the second case, the individual would like to become more eyeglass

independent. It is in this second situation when we consider laser assisted cataract surgery. Very importantly, a thorough examination is performed at the office including special testing when appropriate.

Laser assisted surgery can be combined with different type of implants depending on the goals of the patient, such as:

1. Mr. "A" may want to be able to see at distance without glasses, but he has astigmatism for which he has always worn glasses. He may choose laser assisted surgery combined with either an astigmatism correcting implant **or** with laser created incisions to treat the astigmatism.
2. Ms. "B" would like to be able to see both distance and near without glasses. She may choose laser assisted cataract surgery combined with a multifocal implant, which is designed to provide both distance and near vision.

So you have a cataract, what next?

- "When should I have cataract surgery?" For almost all patients, there is a very simple answer: when the cataract is causing visual symptoms that are interfering with the things you need or like to do.
- "What type of surgery or implant should I choose?" The key point here is that every individual is different and has different goals and preferences. Our job is to understand what you want and to provide you with the best and safest solutions for you.



George Shaker, MD, FACS has been practicing ophthalmology at the Bellows, Goodman, Shaker and Siegal Medical Eye Center since 1993. The Medical Eye Center is located at 250 River Rd, Manchester, NH. Tel: 603-668-2020.

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