LASIK Surgery

If you are tired of wearing glasses or contact lenses, you may be considering LASIK eye surgery. This is a surgical procedure designed to correct some vision problems.

LASIK stands for laser-assisted in situ keratomileusis. The procedure uses a special laser to change the shape of the clear covering of the front of the eye (*cornea*). Changing the shape of the cornea can help focus light rays correctly on the light-sensitive tissue at the back of the eye (*retina*), reducing or eliminating the need for glasses or contact lenses.

After the eye has been totally numbed with drops, a knife, called a *microkeratome*, is used to cut a flap in the cornea. A hinge is left at one end of this flap. The flap is folded back revealing the middle section of the cornea (*stroma*). Pulses from a computer-controlled laser vaporize a portion of the stroma, and then the flap is replaced. There are other techniques and many new terms related to LASIK that you may hear about. You will probably want to understand the procedure that will be used before having it done.

ABOUT LASIK SURGERY

- LASIK is surgery to a very delicate part of the eye.
- Hundreds of thousands of people have had LASIK, most very successfully.
- As with any surgery, there are risks and possible complications.
- LASIK may not give you perfect vision. The American Academy of Ophthalmology (AAO) reports that about 70 percent of patients achieve 20/20 vision, but 20/20 does not always mean perfect vision.
- If you have LASIK to correct your distance vision, you will still need reading glasses around age 45.
- It is not known if there are ill effects that may occur more than five years after surgery.
- LASIK surgery cannot be reversed.
- Your insurance may not cover LASIK surgery.
- Sometimes, additional surgeries (called enhancements) are needed to get the best possible vision after LASIK.

UNDERSTANDING YOUR EYES

To see clearly, the cornea and the lens must bend (*refract*) light rays so they focus, or come together, on the *retina*, a layer of light-sensing cells that line the back of the eye. The retina converts the light rays into impulses that are sent to the brain, where they are recognized as images. If the light rays do not focus on the retina, the image you see is blurry. This is called a *refractive error*. Glasses, contacts, and refractive surgery reduce these errors and help the light rays focus on the retina.

Refractive errors are caused by an imperfectly shaped eyeball, cornea, or lens, and are of three basic types:

- **Myopia** (*nearsightedness*). Only nearby objects are clear.
- **Hyperopia** (*farsightedness*). Only objects far away are clear.
- **Astigmatism**. Images are blurred at a distance and near.

There is also presbyopia, farsightedness that results from the lens of the eye becoming less elastic with age. Everyone has presbyopia after a certain age, which is why we need reading glasses as we get older, even if we have not needed glasses before. Nearsighted people also get presbyopia, but they can often just take their glasses off to read up close.

CANDIDATES FOR LASIK

LASIK is not for everyone.

- You should be at least 18 years old (21 for some kinds of lasers) because the vision of younger people continues to change.
- You should not be pregnant or nursing because these conditions often change the refraction, or light-bending

ability of the eye.

- You should not be taking certain prescription drugs or oral prednisone, which may also change the refraction of the eye.
- Your eyes must be healthy and your prescription for eyeglasses stable. If you are myopic (*nearsighted*), you should postpone LASIK until your refraction has stabilized, because myopia may continue to increase in some people until their mid-to-late 20s.
- You should be in good general health. LASIK may not be recommended for people with diabetes, rheumatoid arthritis, lupus, glaucoma, herpes infections of the eye or cataracts. You should discuss this with your surgeon.
- Weigh the risks and rewards. If you are happy wearing contacts or glasses, you may not want to have the surgery.
- Make sure you have realistic expectations for the surgery.
- Ask your caregiver if you are a candidate for *monovision*. This is, correcting one eye for distance vision and the other eye for near vision. LASIK cannot correct presbyopia so that one eye can see at both distance and near. However, LASIK can be used to correct one eye for distance and the other for near. If you can adjust to this correction, it may eliminate or reduce your need for reading glasses. In some instances, surgery on only one eye is required. You may have problems with depth perception if you select this approach. If your caregiver thinks you are a candidate, ask about the pros and cons.
- If you have other problems with your eyes, or other eye diseases, LASIK will not correct any vision loss due to those diseases or problems.
- If your corneas are too thin, you may not be a candidate for LASIK. Your eye specialist will measure the thickness of your cornea before the surgery, to be sure that you are a candidate.

FINDING A SURGEON

- Only medical doctors (*ophthalmologists*) are permitted to perform LASIK surgery. Ask your eye care professional for a referral to an ophthalmologist who performs LASIK.

SOME QUESTIONS YOU MAY WANT TO ASK YOUR SURGEON ARE:

- How long have you been doing LASIK surgery? How many such surgeries have you done and what do you consider a successful outcome?
- What is your success rate? What is the chance for me (with my correction) to achieve 20/20 vision? How many of your patients have achieved 20/20 or 20/40 vision and what percentage is that of the total you have done? How many patients return for enhancements? (In general, 5 percent to 15 percent of patients return for enhancements.)
- What laser will you be using for my surgery? Make sure your surgeon is using a laser approved by the U.S. Food and Drug Administration (FDA).
- What is involved in after-surgery care?
- Who will handle after-surgery care?
- What about risks and possible complications?

RISKS AND POSSIBLE COMPLICATIONS

Before the surgery, your surgeon will explain the risks and the possible complications and side effects of the procedure, including the pros and cons of having one or both eyes done on the same day. This is the “informed consent” process. This means the surgeon informs you about the procedure and you consent (*agree*) to having it done, after knowing the risks and complications. Some risks and possible complications include:

- Over- or under-correction. These problems can often be improved with glasses, contact lenses and enhancements.
- Corneal scarring, irregular astigmatism (*permanent warping of the cornea*) and an inability to wear contact lenses.
- Corneal infection.
- Loss of best corrected visual acuity, that is, you would not be able to see as well after surgery, even with glasses or contacts, as you did with glasses or contacts before surgery.

- A decrease in contrast sensitivity, visual crispness, or sharpness. That means that even though you may have 20/20 vision, objects may appear fuzzy or grayish.
- Problems with night driving that may require glasses.
- Flap problems including: irregular flaps, incomplete flaps, flaps cut off entirely, and abnormal growth of cells under the flap.

POSSIBLE SIDE EFFECTS THAT USUALLY DISAPPEAR OVER TIME, BUT ARE USUALLY NOT PERMANENT

- Discomfort or pain.
- Hazy or blurry vision.
- Scratchiness.
- Dryness.
- Glare.
- Halos or starbursts around lights.
- Light sensitivity.
- Small pink or red patches on the white of the eye.

WHAT TO EXPECT BEFORE, DURING, AND AFTER SURGERY

BEFORE:

You will need a complete eye examination by your refractive surgeon. An eye exam may be performed by a referring doctor (*ophthalmologist or optometrist*). Take your eye prescription records with you to exams. Your surgeon will:

- Dilate your pupils to fine-tune your prescription.
- Examine your eyes to make sure they are healthy. This includes a glaucoma test and a retina exam, which will be done while your pupils are dilated.
- Take the following measurements:
  - The curvature of your cornea and your pupils. You may be rejected if your pupils are too large.
  - The surface (*topography*) of your eyes, to make sure you do not have an irregular astigmatism or a cone-shaped cornea (*keratoconus*).
  - The thickness (*pachymetry*) of your cornea. You need to have enough tissue left after your corneas have been cut and reshaped.
- You will be asked to sign an informed consent form after a thorough discussion of the risks, benefits, alternative options and possible complications. Review the form carefully. Do not sign until you understand everything in the form.
- If your doctor does not think LASIK is right for you, you might consider getting a second opinion. If the second opinion is the same, trust it.
- If you qualify for surgery, your doctor may tell you to stop wearing your contact lenses for a while before the surgery is scheduled, because contacts can temporarily change the shape of the cornea. Your cornea should be in its natural shape the day of surgery. Your doctor may want to examine you before the surgery, when you have not been wearing contact lenses for a few days, to be sure that all of the measurements taken before the surgery are accurate. You may also be told to stop wearing makeup, lotions, or perfume for a few days before surgery. These products can interfere with the laser treatment or increase the risk of infection after surgery.

DURING:

LASIK is an outpatient surgical procedure. The only medicine to prevent pain (*anesthetic*) is an eye drop that numbs the surface of the eye. The surgery takes 10 to15 minutes for each eye. Sometimes, both eyes are done in one session. But sometimes, surgeons prefer to see the result of the first eye before doing the second eye.

THE SURGICAL PROCEDURE:

A special device cuts a thin, hinged flap of tissue off the outer layer of the cornea and the flap is lifted out of the way. The laser reshapes the underlying corneal tissue, and the surgeon replaces the flap, which quickly adheres

to the eyeball. There are no stitches. A shield, either clear plastic or perforated metal, is placed over the eye to protect the flap.

AFTER:

Healing is fast but you may want to take a few days off work or school after the surgery. You should know:

- You may experience a mild burning feeling for a few hours after surgery. **Do not** rub your eye(s). Your doctor can prescribe a painkiller, if needed, to ease the discomfort.
- Your vision probably will be blurry the day of surgery, but it will improve considerably by the next day, when you return for a follow-up exam. The improvement may continue for 4 to 6 weeks.
- If you experience aggravating or unusual side effects, report them to your doctor immediately.
- **Do not** drive until your vision has improved enough to safely do so.
- Avoid swimming, hot tubs, and whirlpools for two weeks after surgery.

ALTERNATIVES TO LASIK

You may want to discuss some surgical alternatives to LASIK with your eye doctor:

- Photorefractive keratectomy (PRK) is a laser procedure used to reduce myopia, hyperopia, and astigmatism without creating a corneal flap.
- Astigmatic keratotomy (AK) is an incisional (*cutting*) procedure used to reduce astigmatism.
- Intrastromal corneal rings are clear, thin, polymer inlays placed in the eye to correct mild myopia.

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