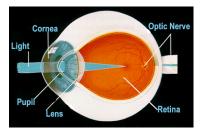
## LASIK Corrective Eye Surgery Justin Martin, Biomedical Engineering, University of Rhode Island

LASIK or laser-assisted in situ keratomileusis, is a quick 5 minute surgery performed to correct vision problems. In a normal, healthy eye, the cornea will receive light from a source and then direct it to the pupil. The pupil will then direct the light to the lens, which in turns focuses the light to the back of the eye. In the back of the eye, the retina will receive the light and transform it into electrical signals that they brain can interpret

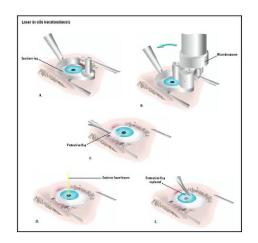


There are three different types of common vision problems. Hyperopia, "farsightedness" is having a longer than normal eye or having a cornea that is too steep. This puts the light focus in from of the retina, causing clear vision in the distance but blurry close up. Myopia or "nearsightedness" is having a shorter than normal eye or having a cornea that is too flat. This puts the light focus behind the retina, causing clear vision close up but blurry in the distance. Astigmatism is a focus problem that is caused by a misshapen cornea.

You have to be a good candidate to be considered for the operation. There are several criteria that a candidate must meet before they can go through with the surgery. They have to be older than 19, but many place require that you are 21 before having the surgery. This makes sure that your eyes are done growing. Your prescription has to have stayed the same for one to two years prior to your surgery. Your eyes need to be in good health and the doctors will also make sure that you have no health problems that could effect the surgery.

Before the surgery begins, the patient has to see an eye specialist to get an eye exam. During the exam, the doctor will see if you are candidate for the procedure, determine your prescription and take a map of your cornea so they know how they have to shape your cornea in order to get the desired effects. If you wear contacts you are supposed to take them out 10 to 15 days before the appointment for soft contacts, and 6 weeks for every year that you have been wearing hard contacts.

The actually operation is quick and painless, usually taking about 5 minutes. Eye drops are administered to the eyes to numb them from pain. A retainer is then put on the eye to hold it in place, and to keep the pressure on the eye during surgery. Then a special tool called a microkeratome is used to cut a flap in the skin that covers the cornea. After this, the surgeon uses a laser tool to sculpt the cornea to the desired shape and size. For patients with hyperopia the cornea is usually flattened, while myopia patients will have their cornea steepened. Then the flaps are put back into place and, in some cases, the surgeon will give you place protectors to shorten the healing times after surgery is completed.



Most people that receive LASIK surgery will come out of the procedure with a 20/20 vision, which is considered to be "perfect" vision, or 20/40 vision, which is the minimum requirement to get a driving license in most states. There is a minimal amount of pain that the patient will feel as compared to other different types of corrective eye surgeries. The recovery time for this type of corrective surgery is also pretty quick, because there are no stitches or bandages involved in the procedure.

There are also risks involved in this operation, just like any other operation. Even though everybody thinks that they will come out of the operation with "perfect" 20/20 vision, which is not always the case. Some patients will still have to keep wearing their contacts or glasses. The patient's new prescriptions will generally be lower than their correct glasses or contacts. The effects of the surgery may also wear while the patient ages. Less than 1% of patients will experience serious or ongoing problems that are an outcome from this surgery. The doctor may also set up the laser incorrectly and either over treat or under treat the patient. The price of the LASIK surgery usually isn't covered by any health care policies, because it is considered an elective surgery.

## References

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