BUNBURY & BUSSELTON EYE SPECIALISTS

PATIENT INFO AND ADVICE

Refractive surgery

To see clearly, light rays enter our eyes through the clear **cornea, pupil** and **lens.** These light rays are focused directly onto the **retina** or photographic lining the back of our eyes.

The retina converts light rays into impulses that are sent through the optic nerve to our brain, where they are recognized as images.

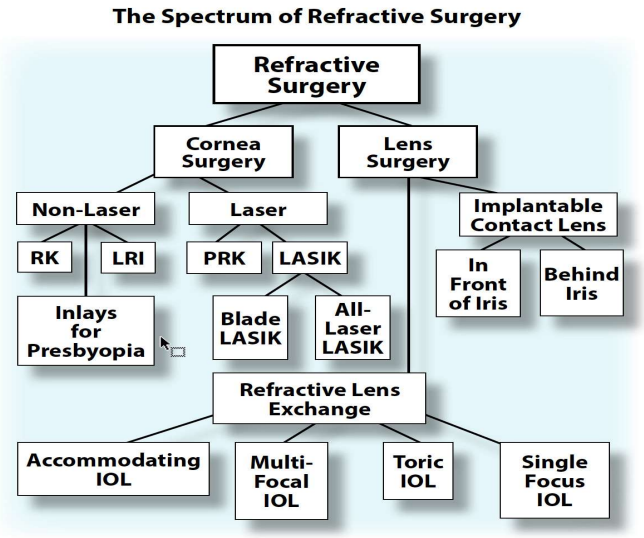
A refractive error (need for glasses)

A refractive error may prevent us from seeing clearly in certain situations, despite having a clear cornea and lens. This can be corrected with glasses, contact lenses and surgery.

Today, many people are choosing to correct their refractive errors with options other than eyeglasses or contact lenses.

Refractive surgery

1. **Laser surgery (LASIK)** — improve vision by permanently changing the shape of the cornea to redirect how light is focused onto the retina. In some cases,
2. **Cataract surgery or refractive lense exchange (RLE)** — Instead of reshaping the cornea, the eye's natural lens is either replaced or enhanced by an implanted **intraocular lens (IOL)** that helps correct vision.



The eye's lens

This contributes to your focusing power, has three primary functions:

Transparency. Allows light rays from an object to reach your retina.

Optical. Focusing a sharp image of an object onto the retina.

Accommodation. To vary the eye's refractive power, providing clear images of objects over a wide range of near, far and intermediate distances.

Cataract

A cataract is present if the lens of the eye becomes cloudy, usually with age. Light cannot pass through it easily, and their vision is blurred. Cataract surgery is used to remove the cloudy lens and replace it with a clear lens placed inside the eye wear the old cloudy lens used to be.

In some cases, younger people without cataracts who want to reduce or eliminate their need for glasses and who may not be candidates for LASIK may choose to have an intraocular lens implanted in a procedure called refractive lens exchange (RLE). When the clear natural lens is removed as a form of refractive surgery and intraocular lenses is also inserted to take the place of the natural lens.

This procedure may be used to correct moderate to high degrees of myopia (nearsightedness), hyperopia (farsightedness) and presbyopia (the inability to focus at near distances with age).

The intraocular lenses are artificial lenses surgically implanted in the eye, replacing the eye's natural lens. These lenses help your eye to regain its focusing and refractive ability.

The most common type of implantable lens is the monofocal, or fixed-focus lens, which is intended to give clear vision at one distance. In order to see clearly at all ranges of distances, one is required to wear glasses or contact lenses.

Other types of lenses, which are gaining in popularity, are the **multifocal** and **accommodative** lenses. These IOLs may be used to treat myopia, hyperopia and presbyopia, and may allow less reliance on glasses, contact lenses, or both to see clearly at a distance and near.

A **multifocal IOL** has several rings of different powers built into the lens. The part of the lens (ring) you look through will determine if you see clearly at a far, near or intermediate distance (this is sometimes called pseudoaccommodation).

An **accommodative IOL** is hinged to work in coordination with the eye muscles. The design allows the accommodative lens to move forward as the eye focuses on near objects, and move backward as it focuses on distant objects.

How the IOL is implanted

The IOL is implanted in a day stay surgical procedure that takes approximately 15 to 20 minutes.

A preoperative eye exam is required and measurements of the eye are taken to give the surgeon the necessary information to perform the procedure.

- Refractive error measurement (measuring your glasses power)
- Pupil evaluation and size measurement;
- Measurement of the curvature (keratometry) and overall shape of the cornea (topography);
- Measurement of the length of the eye from the cornea to the retina
- Calculations to determine the correct power of lens to use.

The cataract surgery (removal of the natural lens)

- The natural lens is gently vacuumed out through a small incision at the side of the cornea with a small high frequency ultrasound probe.
- The intraocular lens is then folded and inserted through the same incision into the capsular bag or space left by the original lenses

Some of the risks and possible side effects of IOL implantation include:

- Overcorrection or under correction (with a possible need for a retreatment);
- Infection;
- Increased floaters or retinal detachment;
- Dislocation of implant;
- Halos and glare;
- Decreased contrast sensitivity;
- Clouding or hazing of a portion of the IOL (called posterior capsular opacification);
- Dry eye;
- Possible need for additional surgery to fine-tune the prescription;
- Loss of vision.

Talk to us about your vision needs

While multifocal or accommodative intraocular lenses do offer some people an alternative to dependence on glasses or contact lenses, they are not recommended for everyone. You may not be a good candidate for these IOLs if you are generally satisfied with glasses or contact lenses and unwilling to accept the uncertainty in the outcome of the surgical procedure. Even after the procedure, certain people may still need to wear glasses or contacts, especially for very fine print.

Most people are happy with their multi- focal IOLs and the decreased need for glasses. However, a small percentage of patients are bothered by halos, glare and a change in their quality of vision. Rarely, some people may request that their surgeon remove the multifocal or accommodative IOL and replace it with a monofocal IOL.

Surgery, contact lenses and glasses each have their benefits and drawbacks. The best method of correcting your vision should be decided after a thorough examination and discussion with your ophthalmologist. Discuss your needs and lifestyle with your ophthalmologist to determine the best procedure for you.

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