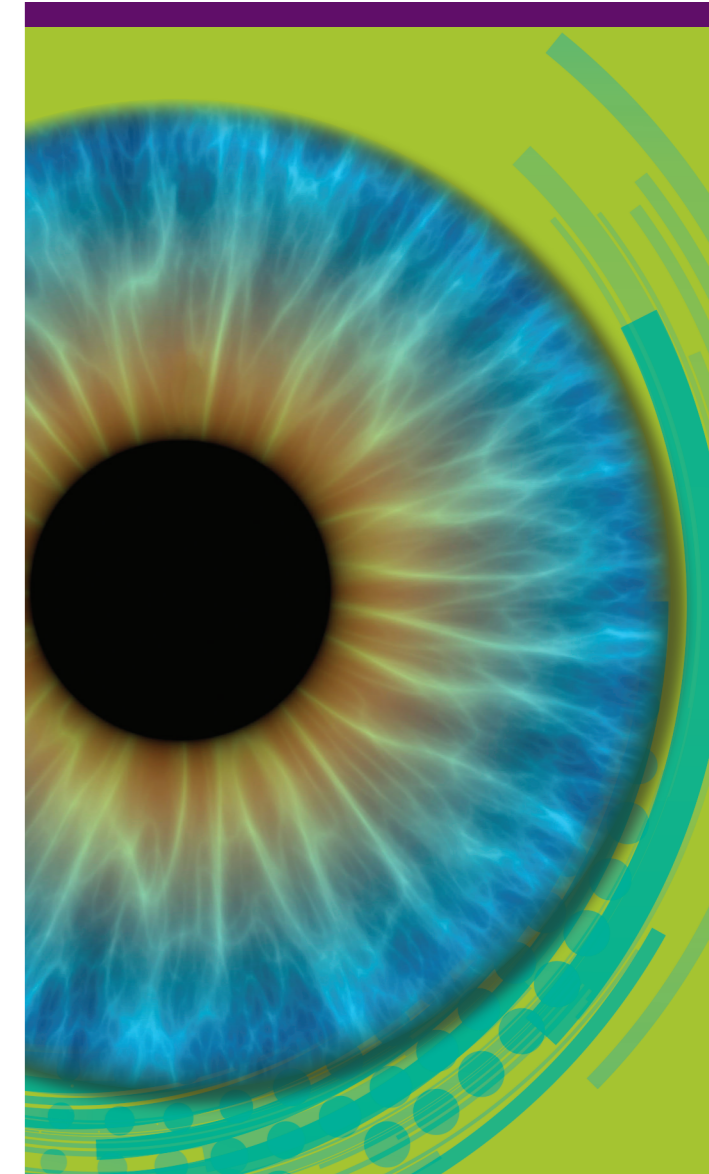


Presbyopia-Correcting IOLs



Summary

Multifocal, accommodative, and extended depth-of-focus IOLs (intraocular lenses) are types of artificial lenses that replace the eye's natural lens. They are usually implanted after a cloudy natural lens is removed in cataract surgery. Sometimes these IOLs are implanted only to correct refractive errors.

These presbyopia-correcting IOLs help make you less dependent on glasses by allowing you to focus at different distances.

There can be side effects with presbyopia-correcting IOLs. For instance, your vision may be not be as sharp in dim light or fog, and you may also notice glare and halos around lights.

When choosing a new lens, consider your lifestyle and vision needs.

If you have any questions about your eyes or your vision, speak with your ophthalmologist. They are committed to protecting your sight.

- Your IOL could move out of position.
- You may see halos and glare around lights.
- You could find it harder to see contrasting colors.
- You could develop clouding or hazing of part of the IOL.
- Your vision could become blurry (especially if you have dry eyes).
- You may need additional surgery to fine-tune the IOL prescription.
- You could lose some of your vision.

Talk with your ophthalmologist about your vision needs.

There are benefits and drawbacks to surgery, eyeglasses and contact lenses. As you explore how to correct your vision, consider your vision needs and expectations. Your ophthalmologist will explain IOL options for you in more detail.

Who might not benefit from presbyopia-correcting IOLs?

With these IOLs, there may be some visual side effects. For instance, your vision may not be as sharp in dim light or fog. You may also notice glare and rings (halos) around lights. For that reason, some people might not benefit from these IOLs. Pilots, night drivers or those who spend a lot of time in front of the computer may find these side effects cause problems.

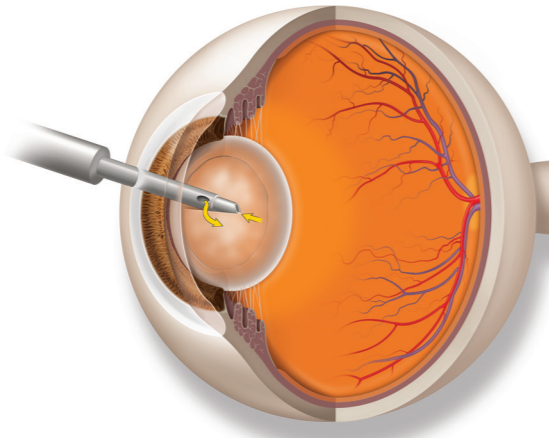
Those who already have eye disease are more at risk for poor visual outcomes from these IOLs.

Your ophthalmologist can help you choose a lens based on the health of your eyes and what you want and need from your vision.

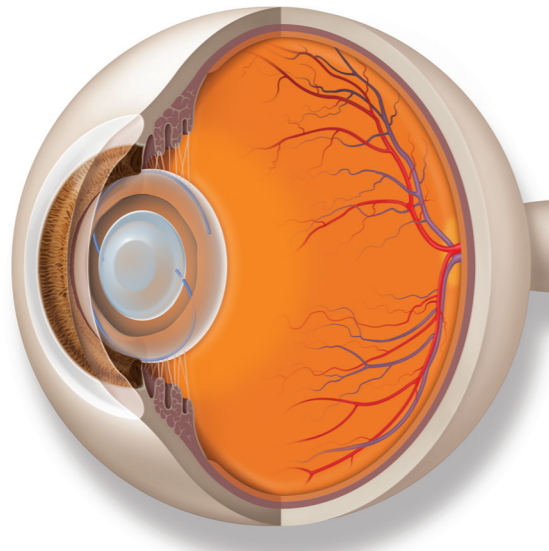
Possible risks of IOLs

There are possible risks and side effects with having an IOL implanted in your eye. Here are some of them:

- Your vision can be overcorrected or undercorrected (and you might need re-treatment).
- You could have an eye infection.
- You may get more floaters in your field of vision.
- You could have a retinal detachment (tissue at the back of your eye lifts up).



To place an artificial lens (IOL) in your eye, your natural lens is removed first through an incision.



The IOL is then folded and inserted through the same incision.

The American Academy of Ophthalmology is the world's largest association of eye physicians and surgeons. A global community of 32,000 medical doctors, we protect sight and empower lives by setting the standards for ophthalmic education and advocating for our patients and the public. For more information, visit www.aao.org.

COMPLIMENTS OF:

Watch an IOL video from the American Academy of Ophthalmology's EyeSmart program at aao.org/iol-link.

What is an IOL?

An intraocular lens (or IOL) is a tiny, artificial lens for the eye. It replaces the eye's natural **lens**.

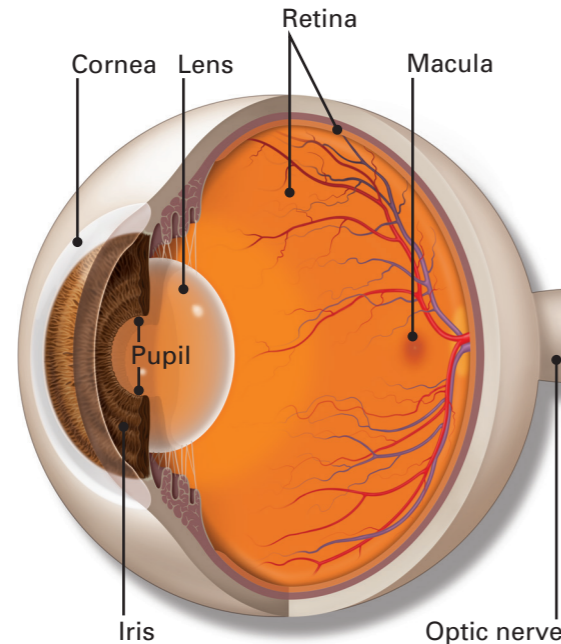
The eye's normally clear lens bends (refracts or focuses) light rays that enter the eye, helping us to see. If your lens has problems, light will not refract properly. An IOL will refract light properly again, giving you clear vision at certain distances. IOLs come in different focusing powers, just like prescription eyeglasses or contact lenses.

If you have a cataract, your lens has become cloudy. Things look blurry, hazy or less colorful with a cataract. Cataract surgery removes this cloudy lens and replaces it with a clear IOL to improve your vision.

Eye Words to Know

Lens: Clear part of the eye behind the colored iris. It helps to focus light on the retina (back of the eye) so you can see.

Cornea: Clear, dome-shaped window of the front of your eye. It focuses light into your eye.



Some people without a cataract choose to replace their natural lens with an IOL. This is called a refractive lens exchange (RLE). This allows them to have an IOL that corrects a refractive error (nearsighted, farsighted, or astigmatism).

Most IOLs are made of silicone or acrylic. They are also coated with a special material to help protect your eyes from the sun's harmful ultraviolet (UV) rays.

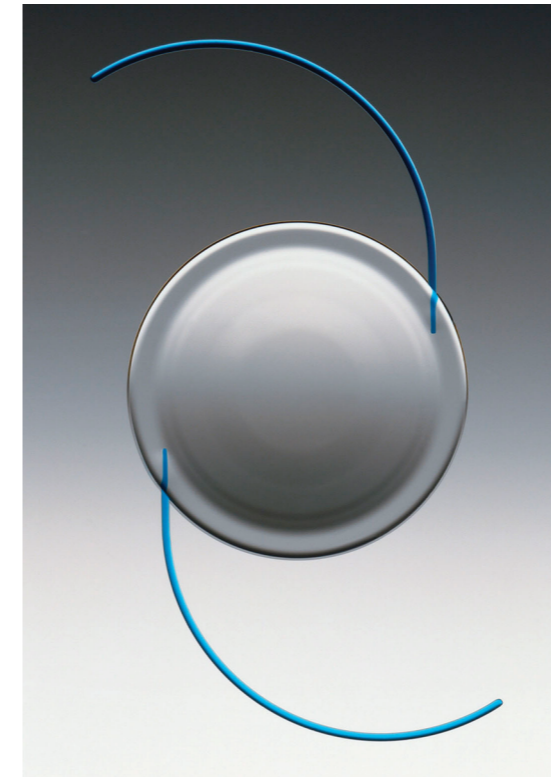
IOL focusing power

The most common type of lens used with cataract surgery is called a **monofocal** IOL. It has one focusing distance. It is set to focus for up close, medium range or distance vision. Most people have them set for clear distance vision. Then they wear eyeglasses for reading or close work.

People who want to be less dependent on eyeglasses might want to consider other lenses known as presbyopia-correcting IOLs. Three types—multifocal, accommodative, and extended depth-of-focus IOLs—offer different focusing powers within the same lens. These IOLs reduce your dependence on glasses by giving you clear vision for more than one set distance. Here's how they work.

Multifocal IOLs: Provide both distance and near focus. The lens has several rings or zones set at different powers. With this design, you are actually using both near and far vision at the same time. However, your brain learns to automatically select the right focus for what you want to see.

Extended depth-of-focus lenses. Like multifocal lenses, extended depth-of-focus (EDOF) lenses sharpen vision up close and far away. But EDOF lenses have only one corrective zone, which "extends" to cover both distances. This may mean less effort to re-focus between distances.



These lenses have multiple zones (top image) or rings (bottom image). Each zone or ring is set for a different focusing power.

Accommodative IOLs: Similar to your eye's natural lens, this type of IOL moves or changes shape to bring objects into focus at different distances.

Setting your IOL's focusing power

Your eye surgeon will take measurements in and on your eye before surgery. These measurements are used to decide the correct power of IOL to use.

Things that are measured include your:

- refractive error (nearsightedness, farsightedness, astigmatism or presbyopia)
- pupil size and function
- cornea curve and shape
- eye length from cornea to retina

How an IOL is put in your eye

- Your eye surgeon will numb your eye with a topical or local anesthesia.
- They will make a few tiny incisions near the edge of the **cornea**. These incisions allow your surgeon to work inside the eye.
- Using special instruments, your ophthalmologist will break up the center of the eye's natural lens. Then those pieces are gently vacuumed out through one of the incisions. The "capsular bag" that holds your natural lens in place is not taken out.
- The IOL is folded and inserted through the incision. It is placed in the "capsular bag," where it unfolds.
- The tiny incisions in your eye are usually "self-sealing," meaning you will not need stitches.

It could take 6 to 8 weeks after surgery to be able to focus fully at all ranges. Basically, your eye has to relearn how to focus at various distances to see clearly.