



Corneal Inlays for Presbyopia

What is presbyopia?

Presbyopia is when your eyes gradually lose the ability to see things clearly up close. It is a normal part of aging.

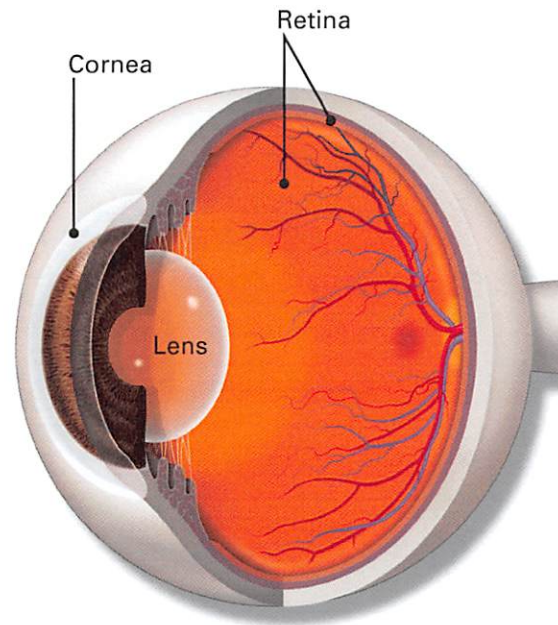
The lens of your eye sits behind the colored iris. It changes shape to focus light onto the retina so you can see. When you are young, the lens is soft and flexible, easily changing shape. This lets you focus on objects both close-up and far away. After age 40, the lens becomes more rigid. It cannot change shape as easily. This makes it harder to read, thread a needle, or do other close-up tasks.

What are corneal inlays?

Corneal inlays are a newer way to treat presbyopia. They are small plastic devices that are placed inside the cornea by a surgeon. These inlays help you see up close without using glasses. There are three kinds of corneal inlays. They all correct presbyopia but do so in different ways.

Corneal reshaping inlays. This corneal inlay is tiny and is made of a contact lens-like plastic material. The surgeon cuts a very thin flap in your cornea using a laser. The inlay is then implanted under the flap. Once the inlay is in place, it treats presbyopia by changing the curvature of the cornea. It's as if you are wearing a multifocal contact lens—distant and near objects can both be viewed clearly.

Small aperture inlays. This inlay has an opaque (non-transparent) outer ring with a small aperture (opening) in the middle of the lens. This aperture creates a "pin-hole" effect. The depth of focus is expanded and near objects are seen clearly. This



Eye Words to Know

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

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.

Retina: Nerve layer at the back of your eye. It sends light signals to the brain so that you can see.

inlay is implanted in a deep pocket in the cornea made by a laser. The pocket seals on its own and needs no stitches.

Refractive corneal inlays. This inlay looks much like a multifocal intraocular lens that used in cataract surgery. It works by changing the

refractive power of the cornea. There are two zones of power on the lens. The zone in the middle of the lens has no power. It helps preserve your existing distance vision. This zone is surrounded by another ring of “add” power, which provides clear near vision.

Using a laser, your surgeon creates a small pocket in the cornea. The inlay is then inserted in this pocket like the small aperture inlay. This inlay is currently not FDA-approved for use in the U.S.

Some things to know about corneal inlays:

- Corneal inlays are usually implanted in people with presbyopia who don’t have refractive errors (like myopia, hyperopia, or astigmatism). For people with refractive errors, a “combination” procedure can be done—doing LASIK to fix the refractive error at the same time the inlay is implanted. Some of these combination procedures are considered “off-label” use of corneal inlays. The FDA allows “off-label” use of a treatment if doctors are well informed about the product or procedure, and studies prove it is helpful.
- If you want corneal inlays, you need to be free of disease of the cornea, like keratoconus (cone-shaped cornea).
- Patients with uncontrolled dry eyes or blepharitis should not get corneal inlays unless these conditions are treated.
- Patients with cataracts should not get corneal inlays.
- For some corneal inlays, you need to have a test to be sure your cornea is thick enough for the surgery.

- Corneal inlays are usually inserted into one eye only (your non-dominant eye).
- You will be awake during the surgery but it will be done under local anesthesia (pain-killer).
- Depending on the type of corneal inlay, there can be side effects like halos, glare and night vision difficulties. Ask your ophthalmologist about the side effects of your corneal inlay.
- Corneal inlays can be removed if you are not satisfied with the results.

Other options to correct presbyopia

There are other ways to correct presbyopia including:

Reading glasses. Reading glasses help correct close-up vision problems by bending (refracting) light before it enters your eye. They can be bought without a prescription.

Bifocals, trifocals or progressive lenses. If you already wear eyeglasses for other vision problems, you can wear bifocals, trifocals, or progressive lenses.

Contact lenses. Some people prefer to wear monovision contact lenses or multifocal contact lenses.

Refractive surgery. Some people decide to have surgery to achieve monovision. Using a laser, an ophthalmologist reshapes the cornea for clear far vision in one eye and close-up vision in the other. In many ways, this is like wearing monovision contact lenses but unlike a contact lens, the power cannot be changed in the future.

Summary

Presbyopia is when you have trouble reading or doing near tasks after the age of 40. This is a natural part of aging and happens because the lens in your eye hardens as we age. There are many ways to treat presbyopia such as using reading glasses, wearing bifocals or contact lenses, or having LASIK or other refractive surgery.

A newer way to treat presbyopia is with corneal inlays. Corneal inlays are tiny plastic inserts that are placed inside your cornea. They inlays give you improved near vision without reading glasses, bifocals, or other surgery. There are three different kinds of corneal inlays. If you want to treat presbyopia, discuss your options with your ophthalmologist.

If you have any questions about your eyes or your vision, speak with your ophthalmologist. He or she is committed to protecting your sight.

Get more information about presbyopia from EyeSmart—provided by the American Academy of Ophthalmology—at aao.org/presbyopia-link.

COMPLIMENTS OF:

