

What is the Cornea ?

The cornea is the front part of the eye. Think of it as the crystal on the front of your watch. The cornea, as thick as two business cards, must be transparent to enable clear vision. The cornea has five layers, front to back, Epithelium, Bowman's layer, Stroma, Descemet's membrane, and Endothelium.

What is Corneal Dystrophy?

With corneal dystrophy, one or more of these layers malfunction, causing a loss of transparency. The cure for several of these diseases is a corneal transplant, using a human donor through an eye bank or, as a last result, an artificial cornea.

**The Corneal Dystrophy Foundation
An IRS approved 501 c 3 approved
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What is Corneal Dystrophy ?

Information from
The Corneal Dystrophy Foundation

Types of Corneal Dystrophy

Experts count more than 20 corneal dystrophies. They are categorized as Anterior, Posterior, and Stromal. Most are inherited, progress gradually, affect both eyes, occur in otherwise healthy people, and are not caused by outside factors such as diet. Here are four of the most common corneal dystrophies and the part of the cornea where the trouble begins:

Keratoconus: middle of the cornea thins and gradually bulges outward. Cured by corneal transplant

Map-Dot-Fingerprint Dystrophy: the membrane that separates the epithelium from the Stroma develops abnormally.

Fuchs' Dystrophy: the cells in the Endothelium fail. Cured by Corneal Transplant

Lattice Dystrophy: problem originates in the Stroma. Cured by corneal transplant.

Symptoms of Corneal Dystrophy

- Is your eyesight 'fuzzy' in the morning, clearing later in the day?
- When you first open your eyes in the morning, do you ever experience a sharp, stabbing pain?
- Do your eyes feel gritty, sandy or scratchy in the morning?
- Does it seem as if your glasses were sometimes smeared with Vaseline?
- Do you experience major problems with glare from the sun, headlights or other bright lights?
- If someone is between you and a bright light or the sun, are you unable to identify their features?
- Do you have trouble with contrast vision that causes difficulties walking and/or driving at dusk or in the dark, e.g., tripping on steps or curbs because you thought they were just shadows?
- Do you have a history of family vision problems, specifically older relatives?

Corneal Transplants

Corneal transplant surgery has the highest success rate of any type of transplant surgery, 95% or better. The first successful corneal

transplant in the United States was done by Dr. Ramon Castroviejo in 1941.

(EK) Endothelial Keratoplasty is the latest procedure, in use since 2000. This surgery replaces only the diseased endothelial cell layer, using no stitches in the cornea to cause less astigmatism, resulting in faster healing, and a stronger cornea and eye. Versions of these posterior transplants are called DLEK, DSEK, DMEK, and DSAEK.

(PK) Penetrating Keratoplasty, is the traditional full thickness transplant that was the only option for over half a century until the advent of the **EK**. In the procedure, all five layers of the cornea are removed and replaced by donor tissue, requiring many stitches and a long healing time of 6 months to a year and possibly even longer before vision stabilizes.

A PK reduces the structural integrity of the eye. Sutures are a potential path for infections. The incision heals very slowly. Blunt force trauma to the head may cause the wound to rupture since the structural integrity of the eye is compromised.

Recently, use of the Femtosecond Laser in PK surgery offers promise of a stronger bond at the wound and much more precise donor button fit. The instrument is only in **experimental** use.