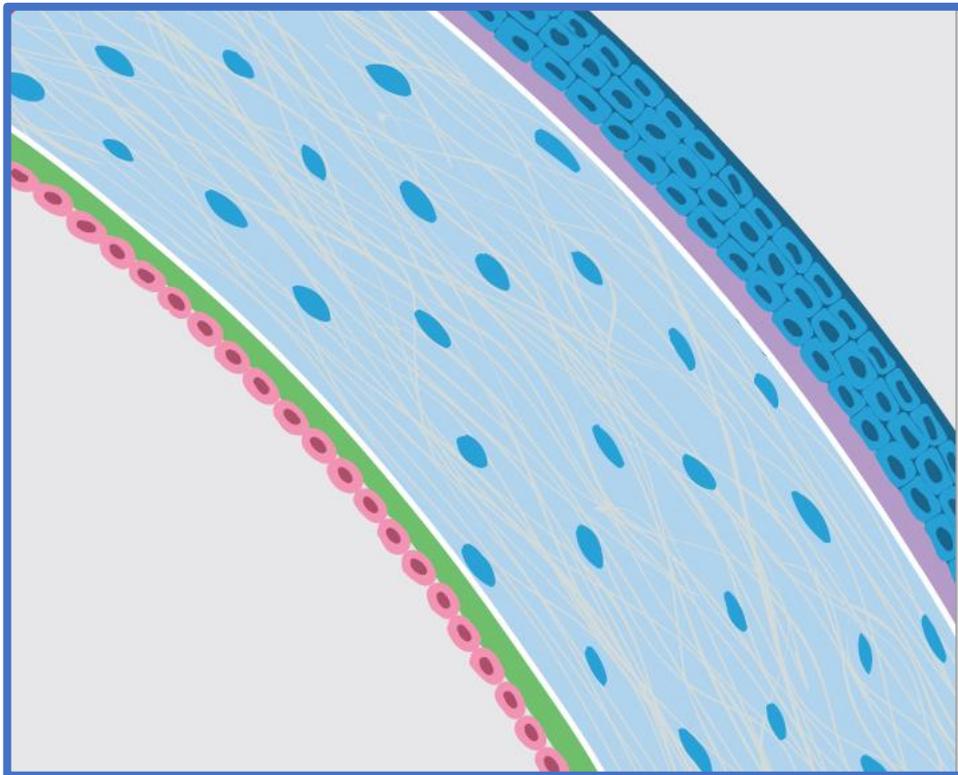


Fuchs Endothelial Corneal Dystrophy (FECD) Patient Information



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Illustrations courtesy of Medical Illustration, Countess of Chester Hospital

The information herein should help supplement the consultation with your doctor in clinic. Should you have further or specific questions these should be discussed with your eye doctor.

What is Fuchs' dystrophy?

Fuchs' dystrophy, also known as *Fuchs' endothelial dystrophy* or *Fuchs' endothelial corneal dystrophy* (FECD) is a common condition that affects the clarity of the cornea. The cornea is the clear window at the front of the eye that allows light to enter for you to see (Figure 1).

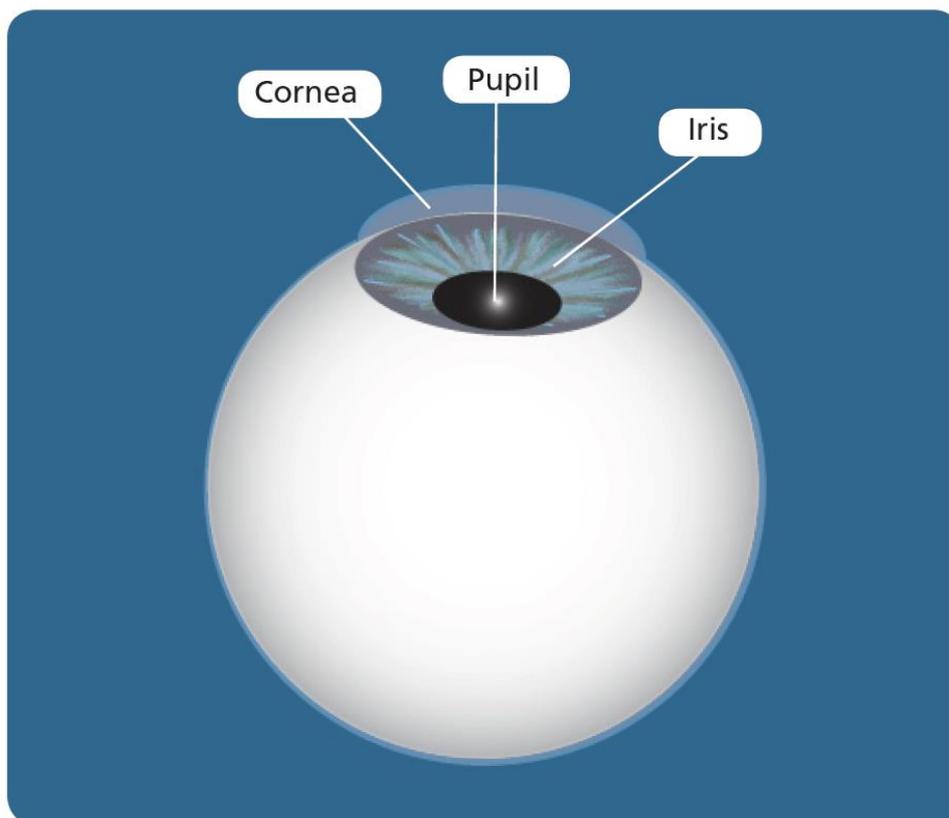


Figure 1

The cornea. The cornea is the clear window at the front of the eye that allows light to enter for you to see.

The cornea consists of various distinct layers. FECD affects the innermost layer – the endothelium (Figure 2). The endothelium consists of a single layer of hexagonally-shaped cells responsible for pumping water out of the cornea. This process is necessary to keep the cornea clear. As we grow older it is a normal and natural process for some of the cells in the endothelium to be lost, which does not affect how we see.

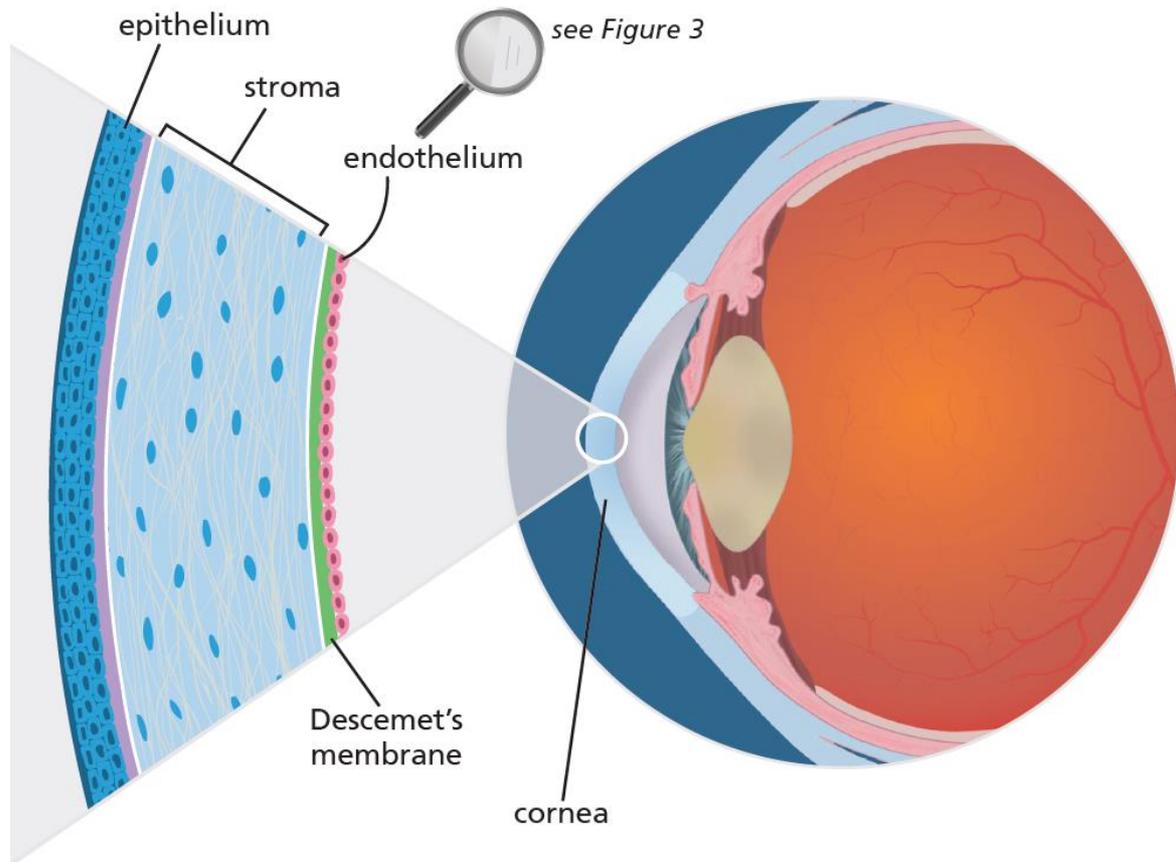


Figure 2
Layers of the cornea. The cornea is made of multiple distinct layers. FECD affects the endothelium (the innermost layer).

In FECD, tiny bumps called guttae accumulate on the endothelium, and there is accelerated loss of surrounding endothelial cells (Figure 3). If enough cells are lost, the endothelial pump may fail, causing the cornea to become waterlogged (corneal oedema) and cloudy, which affects sight.

What causes Fuchs' dystrophy?

FECD can have a genetic cause but it can also occur in people without any history of the condition in the family. Often the cause is unknown.

Who is most at risk of developing Fuchs' dystrophy?

FECD is more common in women than men. You are more likely to develop FECD if you have close relatives with the condition.

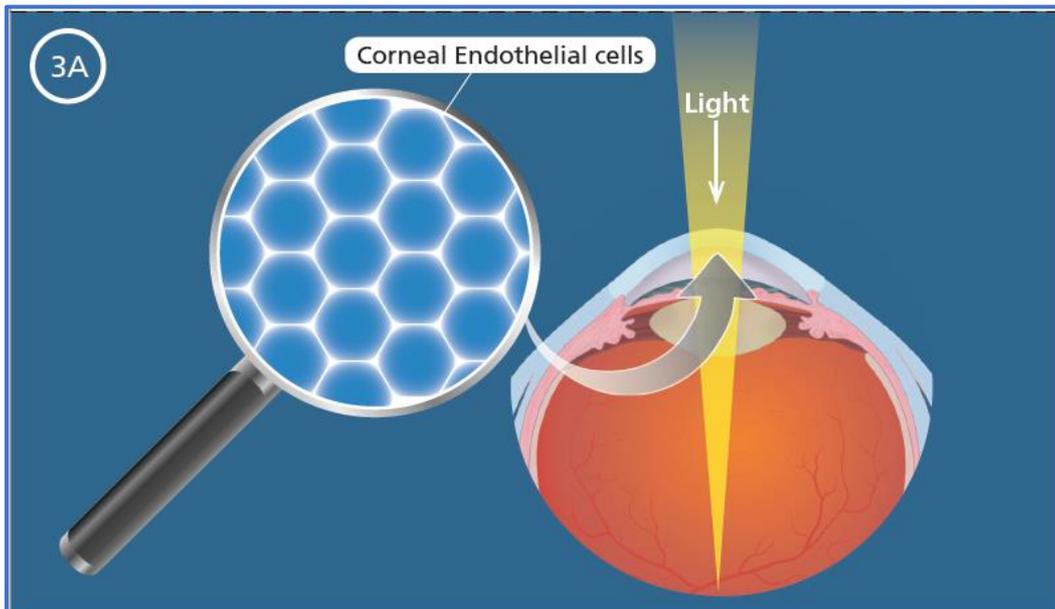


Figure 3A - FECD affects the endothelium (the innermost layer)
 A. The normal corneal endothelium consists of a single layer of hexagonally-shaped cells

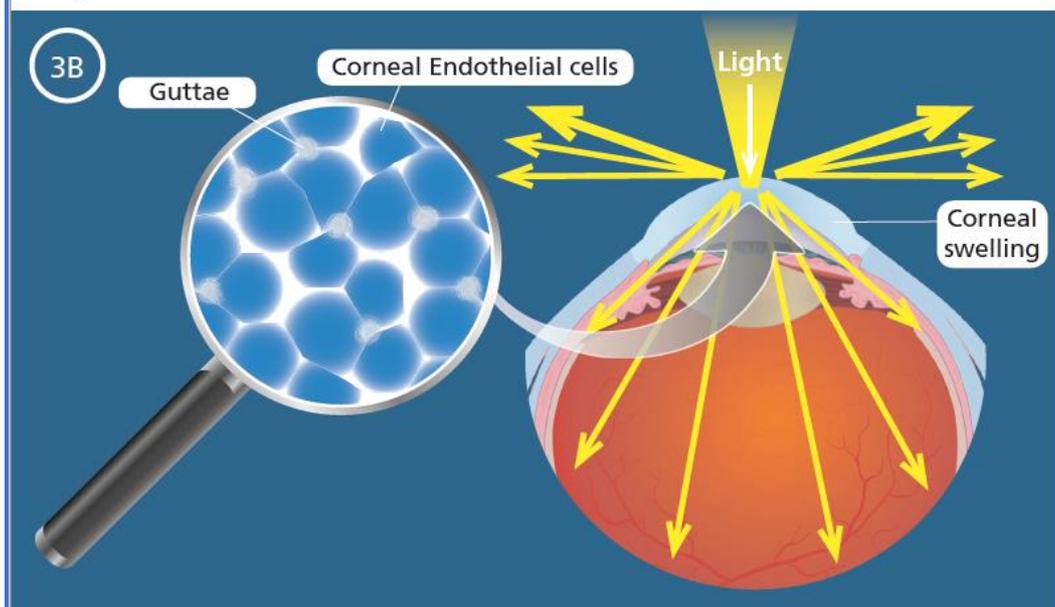


Figure 3B - FECD affects the endothelium (the innermost layer)
 B. In FECD, tiny bumps (guttae) form on endothelium and endothelial cells are reduced in number and irregular in shape. The guttae and corneal swelling cause scatter of light as it passes through the cornea, resulting in poor vision.

How does Fuchs' dystrophy affect vision?

When FECD affects vision, it tends to happen to both eyes gradually over several years and is usually only noticed in people over the age of fifty. FECD can affect people to a varying degree. You may not have any problems with your sight when it is first detected, and some people with FECD will indeed never become aware that they have the condition.

A first sign that FECD is affecting sight may be that your vision is blurred or foggy first thing in the morning, so called “morning misting”, which may improve later in the day. This occurs because at night time, the closed eyelids stop water from evaporating off the surface of the cornea, worsening the waterlogging (and therefore clouding) of the cornea in the mornings. Eventually, the blurring of vision may fail to clear as the day progresses.

Other symptoms that may be noticed are:

- ❖ Glare and sensitivity to light caused by the scattering of light by the swollen cornea and the guttae (Figure 3)
- ❖ Haloes around lights
- ❖ Difficulty seeing in dim lighting
- ❖ Feeling that something is in your eye (foreign body sensation) or eye pain caused by tiny blisters on the surface of the cornea in more advanced cases

How is Fuchs’ dystrophy detected?

Early changes to the cornea in FECD are often subtle, however guttae (tiny bumps in the corneal endothelium) may be detected by an optician or an eye doctor before you have noticed any changes to your vision. During the eye assessment, your vision will be checked with an eye chart and your eyes will be examined using a microscope. Sometimes, FECD will only be picked up when you are being assessed by your eye doctor for other common conditions such as cataracts.

Can I do anything to slow down the development of Fuchs’ dystrophy? Is there anything that will make Fuchs’ dystrophy worse?

There is no evidence that changes to diet or lifestyle can help to stop FECD. Unfortunately, there are no treatments that can prevent or reverse the changes that occur in the cornea, although some of the symptoms can sometimes be helped (see ‘Treatments for Fuchs’ dystrophy’ below).

Cataract surgery can occasionally cause a sudden deterioration in FECD. Even when performed by highly skilled cataract surgeons, cataract surgery results in further loss of endothelial cells. This process can cause the cornea to suddenly cloud over or “decompensate”, even if the endothelial pump was coping quite well prior to surgery. Specific precautions are taken to protect the endothelium during cataract surgery in FECD, but a minority of patients will still go on to decompensate and require further surgery to clear the cornea. If you are considering LASIK (a form of corrective laser eye surgery) or other refractive surgery, be sure to discuss this with your eye doctor as these may also worsen FECD.

Treatments for Fuchs' dystrophy

Eye drops

If you are struggling with early symptoms of FECD such as “morning misting”, these can sometimes be helped by using saline eye drops, which will be prescribed by your eye doctor.

Warm air treatment

Some patients find that using a hair dryer to dehydrate (dry out) the cornea in the morning helps to alleviate symptoms. The hair dryer should be kept on a low heat setting and kept at arms distance from the face for just few minutes at a time. If this causes any pain or irritation, it should be stopped immediately and you should see your eye specialist.

Surgery

When symptoms are significantly interfering with daily activities, and the above measures fail to help, your eye doctor may offer corneal transplant surgery, which is often successful in restoring sight and alleviating symptoms of FECD (See: Corneal graft or transplantation: Endothelial Keratoplasty (EK) information leaflet).