

What Is Fuchs' Dystrophy?

Fuchs' dystrophy is a progressive disease affecting the part of the eye called the cornea, the clear, round dome covering the eye's iris and pupil. By helping to focus light as it enters the eye, the cornea plays an important role in vision.

Fuchs' dystrophy reduces the number of specific cells (called endothelial cells) that make up the inner layer of the cornea. Endothelial cells are key to processing water that makes up the corneal cell structure. When the endothelial cells diminish, the cells stop processing water properly and fluid starts to build up. The corneal tissue gradually thickens, causing the cornea to become swollen and cloudy, losing its crystal-clear transparency.

Also seen in Fuchs' dystrophy, are dewdrop-shaped outgrowths called guttata in the layer just underneath the endothelial cell layer (called Descemet's membrane).

Because Fuchs' dystrophy is a progressive disease, over time, changes to the corneal cells may interfere with vision. The condition can result in corneal scar tissue, which may have to be removed surgically, and can even lead to blindness.

Fuchs' dystrophy is somewhat more common in women and usually affects people in their 50s or 60s, although occasionally it appears earlier in one's adulthood.

Fuchs' Dystrophy Causes

Fuchs' dystrophy, when the endothelial cells in the cornea diminish and the cells stop processing water properly, is largely hereditary. Those who inherited the condition from a parent have a 50 percent chance of passing it on to their children.

Due to gene mutation, however, the condition has also been known to occur in patients without a family history of Fuchs' dystrophy.

Fuchs' Dystrophy Symptoms

Because Fuchs' dystrophy is related to a build-up in fluid in corneal tissue, symptoms can be worse on humid or rainy days and better on dry days or in dryer climates, such as an airplane or desert.

Generally, symptoms may include:

- Hazy or cloudy vision;
- Glare around certain objects (especially light sources);
- Halos around certain objects;
- Reduced visual acuity;
- Reduced ability to discern contrasts;
- Difficult driving at night;
- Fluctuations in vision, especially in the early morning. As the condition advances, however, these fluctuations become more persistent throughout the day;
- Pain in the eye, if the condition is more advanced and blisters have formed.

Two stages of Fuchs' dystrophy

Fuchs' dystrophy usually develops over two stages.

Stage 1 may produce no symptoms or only mild symptoms. In this early stage, the swelling of the corneal cells usually occurs in the morning then tends to clear as the day progresses. Vision is worse in the morning because closing your eyes during sleep keeps moisture from evaporating out of the cornea.

Once the disease has progressed to Stage 2, vision no longer gets better later in the day. People with Stage 2 Fuchs' dystrophy may have pain and be sensitive to light. Extreme climate conditions, such as high humidity, can worsen the condition.

Over time, some people with Stage 2 Fuchs' dystrophy develop scarring at the center of their cornea. Once scarring is present, the patient may become more comfortable, but the film of scar tissue over the cornea reduces vision.

It can take 10 to 20 years or longer for Fuchs' dystrophy to progress from its early to late stage. If the end stage of Fuchs' dystrophy results in significant vision loss, your ophthalmologist (Eye M.D.) can perform corneal transplant surgery. Fortunately, in the majority of patients, Fuchs' dystrophy does not progress so far that corneal transplant surgery is needed.

Fuchs' Dystrophy Diagnosis

Your doctor will need to perform one or more exams to diagnose Fuchs' dystrophy. These may include a slit lamp and measurements of how thick your cornea is, known as pachymetry.

Diagnosis is usually easier in the earlier stages of the condition, when the cornea has sustained less damage but the changes in tissue are still visible.

You may find it helpful to journal your symptoms beforehand, so that you have as accurate a picture as possible of when they began occurring and in what situations they are most extreme.

Fuchs' Dystrophy Treatment

Treatment of Fuchs' dystrophy will vary depending on the stage at which it was diagnosed. The frequency of follow-up visits to your doctor will also vary. Early stage Fuchs' dystrophy may involve annual visits, but more advanced cases or certain treatments may call for visits every few months or even more frequently. Your provider will tell you what your condition requires.

It is not possible to stop the change in the corneal tissue, so treatment of Fuchs' dystrophy will focus on addressing your symptoms and associated pain. Because part of the underlying problem, especially in the early stages, is the collection of fluid, your doctor may recommend treatments to help the extra water evaporate, such as exposure to warm, dry air (vents in a car, blow dryer, etc.).

Your doctor may also prescribe ointments or drops or bandage contact lenses. In very advanced cases, your doctor may recommend a [corneal transplant](#) or other surgical procedure.