

Fuchs' Dystrophy

Fuchs' dystrophy is a progressive disease affecting the part of the eye called the cornea.

The cornea is like the crystal covering a clock face: it is a clear round dome covering the **iris**, the colored ring in the center of the eye, and the **pupil**, the black circle in the middle of the iris. By helping to focus light as it enters the eye, the cornea plays an important role in vision.

Fuchs' dystrophy involves problems in the microscopic cells that make up the cornea. The disease reduces the number of cells in the cornea's inner layer (called the **endothelial layer**), which causes the remaining cells to become abnormally thick or swollen. Disordered endothelial cells also produce abnormal, dew-drop shaped outgrowths known as **guttate**.

These cells changes may cause the cornea to become swollen and cloudy, losing its crystal-clear transparency. Because Fuchs' dystrophy is a progressive disease, over time, the changes to the corneal cells may interfere with vision.

Fuchs' dystrophy usually occurs after age 40. Studies show that it is an inherited condition.

What are the symptoms of Fuchs' Dystrophy?

A patient with Fuchs' dystrophy may experience hazy or cloudy vision, with the disease usually developing 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 experience pain and sensitivity to light. Extreme climate conditions, such as high humidity, can worsen the condition.

Over time, some patients 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 loss of vision, your ophthalmologist can perform corneal transplant surgery. Fortunately, in the vast majority of patients, Fuchs' dystrophy does not progress so far that corneal transplant surgery is needed.

How is Fuchs' Dystrophy diagnosed?

To diagnose Fuchs' dystrophy, your ophthalmologist checks for cell outgrowths and distortions by examining the cornea with an instrument called a slit-lamp microscope. This examination does not cause any pain. Your ophthalmologist may also monitor the disease by measuring the thickness of the cornea.

How is Fuchs' Dystrophy treated?

The treatment for Fuchs' dystrophy varies according to the severity of the disease. Treatment options will depend on your particular condition, such as whether you have a cataract and the degree of changes in your corneal cells.

To control Stage 1 of the disease, your ophthalmologist may prescribe one or more of the following treatments:

- Applying eye drops to lessen swelling of the cells in the cornea;
- Using a hair dryer, held at arm's length, to help dry the surface of the cornea.

In Stage 2, you may need to wear a therapeutic bandage contact lens to lessen discomfort.

For the late stages of Fuchs' dystrophy, if reduced vision begins to interfere with daily living, your ophthalmologist may recommend surgical treatment. The surgery involves replacing the cloudy cornea with a donor's clear cornea. The most common cornea transplant technique is called **penetrating keratoplasty**.

Ophthalmologists have excellent success rates performing corneal transplants, with over 40,000 of the procedures completed each year. Of all transplant surgery done today—including heart, lung, and kidney—corneal transplants are the most common and successful.

Some patients who have additional eye problems, such as cataracts, will need more complex surgeries that involve additional procedures. Your ophthalmologist will explain the treatment options appropriate for your case and will be happy to answer any questions you might have.