



## Fuchs' dystrophy

### a closer look

#### WHAT IS 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 reduces the number of specific cells (called **endothelial cells**) that make up the inner layer of the cornea. This reduction of cells causes the cornea to become unusually thick or puffy.

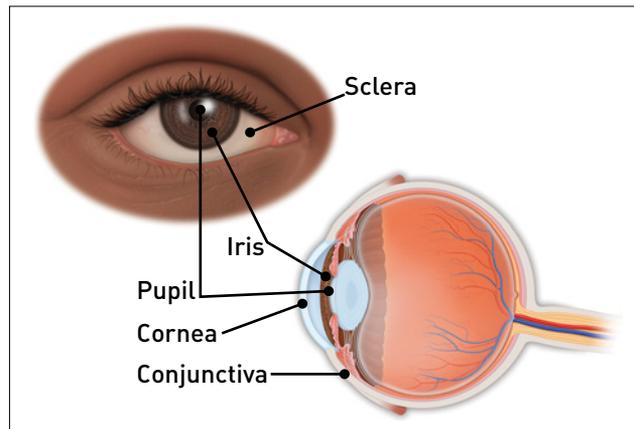
Also seen in Fuchs' dystrophy are dewdrop-shaped outgrowths called **guttata** in the layer just underneath the endothelial cell layer called Descemet's membrane.

These cell changes may cause the cornea to become swollen and cloudy, losing its crystal-clear transparency. Because Fuchs' dystrophy is a progressive disease, over time, 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 person with Fuchs' dystrophy may have hazy or cloudy vision, with the disease usually developing over two stages.



**Front and side views showing parts of the eye. The cornea is the eye's clear, dome-shaped covering.**

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 sensitivity 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.

## Fuchs' dystrophy

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.

### HOW IS FUCHS' DYSTROPHY DIAGNOSED?

To diagnose Fuchs' dystrophy, your ophthalmologist checks for guttata with an instrument called a slit-lamp biomicroscope. Your ophthalmologist may also measure the thickness of the cornea or take a special photograph of the endothelial cell layer to get an actual cell count. These examinations are brief and do not cause any pain.

### HOW IS FUCHS' DYSTROPHY TREATED?

Treatment for Fuchs' dystrophy depends 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 eyedrops 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.

If poor vision begins to affect your lifestyle, your ophthalmologist may recommend corneal transplant surgery. There are two transplant options available: **endothelial keratoplasty**, a new method that transplants the endothelium and inner layers of the cornea, and **penetrating keratoplasty**, a transplant of the entire central part of the cornea. Both procedures are effective, though endothelial keratoplasty is becoming more popular due to its shorter recovery time.

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.

#### COMPLIMENTS OF:

#### Academy reviewed 09/11

© 2011 American Academy of Ophthalmology. The American Academy of Ophthalmology, The Eye M.D. Association and the Academy logo are registered trademarks of the American Academy of Ophthalmology.