

# DEEP CORNEAL ULCERATION

## What is the Cornea?

The cornea is the transparent tissue at the front of the eye, allowing light to pass into the eye. The cornea forms a barrier against debris and infection, but is only half a millimetre in thickness. The cornea is not a single solid piece of tissue, but is composed of layers with differing properties. There are three main layers, the outermost is the epithelium and is in direct contact with the tears. The middle layer forms the bulk of the cornea and is called the stroma and the very thin inner layer is called the endothelium.

## What is a corneal ulcer?

Ulceration is the erosion of normal tissue (e.g. following trauma or injury). Superficial corneal ulcers involve only the outer epithelial tissue whereas deep ulcers involve the stroma and in some cases the endothelium.

## What are the signs of corneal ulceration?

The cornea is the most sensitive tissue in the body and even a small ulcer can create a large amount of discomfort. Increased blink rate, profuse ocular discharge and discolouration to the surface of the eye are all common findings. An irregular contour or depression in the surface of the eye may be seen with larger ulcers.

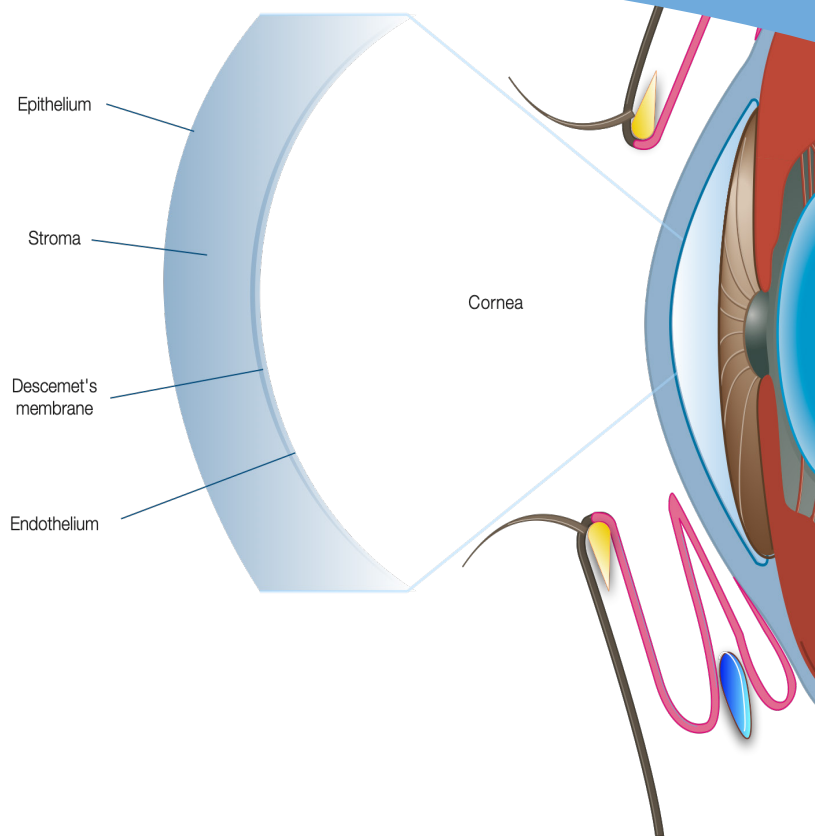
## What is a deep corneal ulcer?

This is any ulcer that extends into the corneal stroma. Normally ulcers that extend beyond 50% of the total corneal thickness will require surgery to aid healing.

## What are the treatment options for deep corneal ulceration?

A full ophthalmic examination is required to determine why the ulcer has occurred. In uncomplicated deep corneal ulceration, surgery may be required to prevent corneal rupture. Surgery is performed under general anaesthesia with aim of stabilising the corneal structure. In the majority of cases a 'graft' will be sutured (stitched) into the deficit. The type and size of graft used will depend on the shape, size and location of the corneal ulcer.

If the ulcer appears infected we may recommend corneal crosslinking. This surgical procedure involves the use of a specialised machine to kill bacteria present in the tissue while increasing the 'stiffness' of the cornea.



## What complications could occur with corneal surgery?

There is always a degree of anaesthetic risk with any surgical procedure, and we aim to minimise these as far as possible. Infection must be avoided during the healing process and we will normally prescribe a course of topical antibiotics. Rubbing or scratching should be avoided and we will often recommend the use of an elizabethan collar to prevent suture failure.

## What happens after surgery?

The cornea will need time to heal following surgery. We would expect the cornea to appear 'red' with the growth of new blood vessels. When we are happy that the corneal structure has stabilised we will prescribe medication to improve corneal transparency and reduce scar tissue formation.