

Herpes Simplex Keratitis

Herpes simplex eye infection is caused by a type of herpes simplex virus. An episode often clears without any permanent problem. However, in some cases the infection causes scarring to the transparent front part of the eye (the cornea). This can lead to permanent loss of vision. Prompt treatment with antiviral eye ointment or drops helps to prevent corneal scarring.

Herpes simplex infections

There are two types of herpes simplex virus. Type 1 is the usual cause of cold sores around the mouth, and herpes simplex infection in the eye. Type 2 is the usual cause of genital herpes. It rarely causes cold sores or eye infections.

Type 1 herpes simplex infections

The first time you are infected is called the primary infection. Many people become infected with this virus, often during childhood. The herpes simplex virus can pass through the moist skin that lines the mouth. It is commonly passed on by close contact such as kisses from a family member who has a cold sore. In many people the primary infection does not cause any symptoms, although in some cases symptoms do occur.

Following the primary infection, the virus stays with you for life. It stays inactive (dormant) in the root of a nerve in the face (the trigeminal nerve).

- In many people, the virus remains permanently inactive and causes no problems.
- In some people, the virus activates and multiplies from time to time. Virus particles then travel down the nerve to cause episodes of active infection with symptoms:
- In most of these cases, the virus travels down a branch of the nerve to the mouth to cause cold sores. (See separate leaflet called Cold Sores for details.)
- In some of these cases, the virus travels down a branch of the nerve to the eye to cause episodes of active eye infection.

The rest of this leaflet is about herpes simplex infection of the eye.

Which part of the eye is affected by herpes simplex infection?

The common situation is for the transparent front part of the eye (the cornea) to become infected. Infection of the cornea is called keratitis.

In most cases, the infection is just in the top (superficial) layer of the cornea. This is called epithelial keratitis. Sometimes deeper layers of the cornea are involved. This is called stromal keratitis. This is more serious, as it is more likely to cause scarring of the cornea.

Other parts of the eye are sometimes affected. Often at the same time as the cornea is infected, a minor and temporary inflammation may occur with active infection of:

- The thin lining of the eyelid (the conjunctiva), called conjunctivitis.
- The eyelids, called blepharitis.
- Sometimes, deeper structures, such as the retina or the iris. The retina is a layer of the eyeball, found on its back wall. The iris is the colored part of the eye.

Who gets herpes simplex infections of the eye?

About 1-2 people in 1,000 will develop at least one episode of active herpes simplex eye infection at some stage in their life. The most common time for a first active infection is between the ages of 30 and 40. Often people who get active eye infection will have had previous cold sores during their lifetime. Herpes simplex eye infections may also be more common in people who wear contact lenses.

What are the symptoms and signs of active infection?

Most episodes of active infection are due to a reactivation of the virus at some point, often years after a primary infection. Symptoms include:

- Redness of the eye - mainly around the transparent front part of the eye (the cornea).
- Ache or pain in the eye.
- Discomfort when opening the eyes in bright light (photophobia).
- Watering of the eye.
- Blurring of vision.

You may also notice a blistery skin rash around the eyelids (but not in all cases). It is usually one eye that is affected.

How is herpes simplex eye infection diagnosed?

A doctor will usually examine your eye with a magnifier. They may also put some stain on the front of your eye. This is used to show up any irregular areas on the transparent front part of the eye (the cornea). With a herpes simplex infection they will often see a small ulcer (erosion) on the cornea. The typical ulcer which develops is called a dendritic ulcer. Dendritic means branching. The ulcer is not round with a smooth edge but like a tree with many finger-like branches.

If your doctor suspects a herpes eye infection you will usually be referred urgently to an eye specialist (ophthalmologist). A specialist will do a detailed magnified examination of the eye. This is to confirm the diagnosis and to determine whether the infection is in the top layer of the cornea (epithelial keratitis), or if the deeper layers are involved (stromal keratitis).

What is the treatment for herpes simplex eye infection?

The treatment depends on which part of the eye is affected.

Sometimes before you start to use any eye drops or ointment, your eye specialist (ophthalmologist) may gently scrape away some of the infected cells from the surface of your eye. They will numb your eye with anesthetic drops before the procedure. This procedure is called debridement.

If the top (superficial) layer of the cornea is affected - epithelial keratitis

Treatment is with antiviral eye medication which may be pills or drops (such as Acyclovir or Famvir). These do not kill the virus but stop it from multiplying further until the infection clears. You should take the full course exactly as prescribed. This is often several times a day for up to two weeks. The aim is to prevent damage to the transparent front part of the eye (the cornea).

If the deeper layer of the cornea is affected - stromal keratitis

Treatment is similar to epithelial keratitis (above). In addition to the antiviral medication, your specialist may add in some steroid eye drops. This helps to reduce inflammation. **Note:** steroid eye drops must only be used under close supervision of an eye specialist. He or she will prescribe the correct strength and dose in conjunction with antiviral treatment. Used wrongly on their own, steroid drops cause more harm than good.

If just the eyelids or the thin lining of the eyelid (conjunctiva) are affected

These infections will usually settle on their own in 1-3 weeks. No treatment may be advised. You are likely to be kept under review, until the infection clears, to check that the cornea does not become infected.

Note: if you have herpes simplex eye infection, you should not wear contact lenses until 24 hours after your symptoms and the infection have completely gone away.

Can herpes simplex eye infection recur?

Some people develop repeated (recurring) episodes of active infection. As mentioned above, these occur if the virus reactivates from time to time - similar to cold sores. A recurrent infection may occur any time between a few weeks and many years after the first active infection.

At least half of people who have one episode of active infection will have a recurrence within 10 years of the first. Recurrences occur more often in some people than others.

If recurrences are frequent or severe, your eye specialist (ophthalmologist) may advise that you take antiviral tablets each day to prevent episodes of active infection. Studies have shown that,

on average, the number of recurrences is roughly halved in people who take regular antiviral tablets.

Some people say that episodes of active herpes infection may be triggered by strong sunlight. So, wearing sunglasses *may* also help to prevent recurrences. It is also possible that active infection may be triggered if you are run down or unwell for another reason. However, the evidence for this is limited. Some women find that they get recurrences around the time of their period but again there is limited evidence to support this.

If a recurrence does occur, each episode is treated as described above.

What is the outlook (prognosis)?

The main concern with corneal infection (keratitis) is that it can cause scarring of the transparent front part of the eye (the cornea). With scarring, the normally clear cornea can become like frosted glass. This may sometimes seriously affect vision.

- Epithelial keratitis tends to settle and go away within a few weeks. It has a good outlook and often causes little or no scarring.
- Stromal keratitis is more likely to result in corneal scarring and loss of vision.
- Recurring episodes of active infection can make any existing scarring worse.
- Prompt treatment with antiviral eye ointment or drops helps to minimize damage during each episode of active infection.

Overall, good vision remains in about 9 in 10 eyes affected by herpes simplex infection - that is, vision good enough to drive. However, severe and recurrent herpes simplex eye infections may lead to serious scarring, impaired vision and even severe sight impairment in some cases. If severe sight impairment does develop, a corneal transplant may be the only option to restore vision.