

Acanthamoeba keratitis

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What is Acanthamoeba Keratitis?

Acanthamoeba keratitis (AK) is a rare but serious infection of the cornea, the clear, dome-shaped window at the front of your eye. Acanthamoeba is an amoeba, a microscopic creature similar to bacteria but a little more complex. Acanthamoeba is common in nature and is usually found in bodies of water (lakes, oceans and rivers) as well as domestic tap water, swimming pools, hot tubs, soil and air. Acanthamoeba does not generally cause harm to humans but can cause a serious condition in the eye if it infects the cornea.

What causes AK?

Acanthamoeba is increasingly recognised as a major cause of keratitis in contact lens wearers. Approximately 85% of AK has been associated with contact lens wear. Those who do not wear contact lenses may still contract AK but it is extremely rare.

Factors that increase the risk of contracting AK include:

- Using contaminated tap water on contact lenses and using non-sterile solutions to clean the lenses
- Poor hand hygiene while changing or cleaning contact lenses
- Swimming whilst wearing contact lenses
- Inadequate cleaning and disinfection of storage case or using tap water to rinse storage case
- Injury

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What are the symptoms?

- Eye pain: this ranges from mild in the early stages to severe in more established disease
- Blurred vision
- Gritty or foreign body sensation
- Redness
- Sensitivity to light (photophobia)

How is AK diagnosed?

Your eye doctor will use a slit-lamp microscope to examine your eye for signs of inflammation in the cornea including for specific features characteristic of acanthamoeba infection.

A sample of the cornea is usually sent away to the laboratory. The results of this test may take a few days to come through. The test is helpful if it confirms the presence of acanthamoeba infection but a negative result does not mean you don't have acanthamoeba infection.

Your eye doctor will use this test together with clinical signs and your symptoms to make an appropriate treatment plan.

What is the treatment?

AK can be difficult to treat especially if it invades deeper layers of the cornea. The amoeba can also exist as a cyst which is resistant to many types of treatment. The treatment usually lasts for months rather than weeks to ensure that all forms of acanthamoeba are treated.

Treatment is with

1. Antiseptic, anti-acanthamoeba eye drops. These include
 - Polyhexamethylene biguanide (PHMB)
 - Chlorhexidine
 - Brolene

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These drops are usually used in combination, usually two out of the three. You'll need to apply these drops every hour for the first few days (including overnight). It can be quite difficult to take eye drops through the night during the first few days, but it's very important to try and stick to the regime outlined by the doctor as best as you can. Setting an alarm and using an eyedrop chart can help. The frequency will then be reduced depending on your response to treatment.

2. Antibiotic eye drops: around 10% of acanthamoeba infections have dual pathology. This means that another infection, usually a bacteria, is also present. If this is the case for you, you may also be prescribed antibiotics in addition to your other drops. These may also be given to prevent secondary bacterial infection whilst the surface of the eye is disrupted in the early stages of AK.
3. Eye drops to treat acanthamoeba which exists as cysts
4. Eyedrops which dilate your pupil. The iris (the coloured part of the eye) sometimes goes into a painful spasm when the cornea is infected and these drops will relieve this. These will make your vision more blurred and may also make you more sensitive to light whilst you are using them. These symptoms will resolve when you stop this medication.
5. Steroid eye drops: Patients with severe inflammation or scleritis (inflammation of the white part of the eye) may also be prescribed a steroid eye drop. Not every patient needs these and the use of these drops needs to be very carefully managed.

In later stages of the disease, long-term inflammation causes scarring on the front of the cornea. This causes visual loss. In some cases, scarring can be very severe and may need a corneal transplant to rehabilitate vision once the infection is fully cleared. A degree of permanent visual loss occurs in around one quarter of cases.

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Do I need to be off work?

This varies enormously depending on your eye condition and the type of work you do. Some patients have worked throughout their illness whilst others have found it necessary to take sick leave. Your GP can provide a sicknote. You should return to work when you feel ready to perform your duties appropriately. Some people return to work with reduced working hours or duties for a period of time.

Further advice

- Please bring all of your drops to your clinic appointment
- Please do not stop the drops on the day of your outpatient visit
- Never stop treatment without consulting your eye doctor.
- You must not wear your contact lenses until the condition has completely resolved.
- Always wash and dry your hands thoroughly before and after administering eyedrops.
- Make sure you do not touch your eye with the dropper or bottle top when applying eye drops.

How long does treatment go on for?

As a rule, those who are diagnosed and receive appropriate treatment quickly can expect their treatment to last between three to six months. Some patients recover sooner and more complicated cases can last for over a year.

Although the early stages of the condition can be very difficult and limit your ability to perform your day to day activities, as the infection comes under control with treatment you should be able to continue many of these whilst on treatment.

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When can I start wearing contact lenses again?

For those who wish to return to contact lenses after AK, daily disposables are usually the most suitable option. Most patients will need to wait several weeks or months after treatment cessation to ensure they are clear of infection and their eye is healthy before wearing contact lenses again. Ask your doctor what is right for you.

How can AK be prevented?

- Follow your optician's advice about care of your contact lenses
- Never use tap water with your contact lenses
- Do not swim, shower or use a hot tub whilst wearing contact lenses
- Soak monthly lenses in fresh disinfectant solution every night
- Always wash and dry your hands thoroughly before handling contact lenses
- Cleanliness and proper care are equally important for your contact lens case.

When to seek medical help

In between appointments if you develop a sudden increase in

- Pain
- Redness
- Blurred vision

You should contact us immediately.

How do I contact the hospital?

If you require advice please telephone the Ophthalmic Outpatient Department between 9am and 5pm Monday to Friday on 01423 542217.

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Further Information

Other sources of useful information can be found at:

NHS www.nhs.co.uk

Harrogate and District NHS Foundation Trust website www.hdft.nhs.uk

National Eye Institute <http://www.nei.nih.gov/health/>

Feedback

If you have a concern, complaint or compliment, or would like to provide feedback regarding your experience of the Ophthalmology Service / clinic, please contact the Patient Experience Team via the following:

Patient Experience helpline 01423 555499 (Monday – Friday 9.30am – 4pm)

E-mail: hdft.patientexperience@nhs.net

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