

# Acanthamoeba Keratitis & Contact Lenses

[PreventBlindness.org/Acanthamoeba-Keratitis-Contact-Lenses](https://PreventBlindness.org/Acanthamoeba-Keratitis-Contact-Lenses)

If you wear contact lenses, ask yourself these questions:

- Have you worn contacts while showering, bathing, swimming, or in a hot tub?
- Do you handle your contact lenses with wet hands from water?
- Do you rinse your contacts or your lens case with tap water?
- Do you re-use or “top off” the solution in your lens case?

If you answered “yes” to any of these questions, you could be at risk of getting a serious eye infection that could affect your vision, cause significant vision loss, or blindness.

## What is Acanthamoeba keratitis?

Acanthamoeba keratitis (AK) [uh-kan-thuh-mee-buh keh-ruh-tai-tuhs], is a serious eye infection that affects the cornea, the clear outer layer of the eye. AK is caused by exposure of the eye to water (pools, lakes, ponds, oceans, and tap water) that has tiny organisms living in it called Acanthamoeba. AK most commonly affects people who wear contact lenses. Rarely, it can be caused by eye injuries. This is because contact lens use can make the eye vulnerable to organisms found in water. Over 23,000 people are estimated to be diagnosed with AK globally each year.<sup>1</sup> Since it is a relatively uncommon disease, it can be difficult to diagnose early.<sup>2</sup> If left untreated, AK can lead to severe vision loss and in many cases blindness or eye loss.

## What are the risk factors for infection?

Individuals who wear any type of contact lenses are at the highest risk for contracting this infection. The two biggest risk factors are:

- Poor contact lens care
- Exposure to water and wet soil while handling, storing or wearing contact lenses

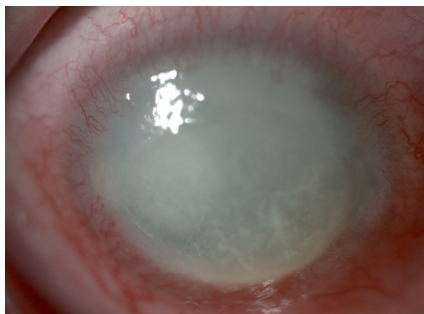
## What symptoms could you have with acanthamoeba keratitis?

Symptoms of an AK infection can include:

- Feeling of something being in the eye
- Irritation
- Increased light sensitivity
- Redness
- Increased tearing
- Change in vision
- Increased pain
- Severe eye pain and trigeminal neuralgia (pain which occurs on the side of the face)

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Lorenzo-Morales et al 2015 - 10.051/parasite/2015010

## Parasitic (Acanthamoeba) infection

If you experience any of these symptoms, please remove your contact lenses and consult an eye doctor immediately. It is important to tell them any symptoms you are experiencing and if you are a contact lens user and that your lenses may have been in contact with water.

### How can I prevent infection?

The best way to prevent eye infections from AK is to always follow proper contact lens care guidelines as prescribed by your eye doctor. The following are key tips for contact lens care:

- **Wash hands:** Before handling contact lenses, wash your hands with soap and water, then rinse and dry them completely with a lint-free towel.
- **Remove contact lenses:** Remove contact lenses before any activities with water, such as showering, bathing, swimming, or hot tub use.
- **Do not use water:** Contact lenses should never be rinsed with or stored in water (both tap or sterile water).
- **Follow use and care instructions:** Wear and replace contact lenses as directed by your eye doctor. Using daily disposable contact lenses and throwing them away each day is often the safest way to avoid infection.

- **New solution:** Use fresh disinfecting solution to clean, rub, and rinse your contact lenses each time you remove them – even if the solution you are using is a “no-rub” variety. Do not re-use the old solution or “top off” the solution in your lens case. Remove this solution thoroughly before adding fresh solution.

- **Clean contact lens case:** Contact lens cases should always be cleaned with fresh solution – not water. Then leave the empty case open to dry. Replace lens cases regularly- at least every three months. Do not use cracked or damaged lens cases. Lens cases can be a source of contamination and infection.

- **Location:** Consider keeping your contact lenses outside the bathroom, to reduce the risk of water contamination.

For more information on do's and don'ts: [AKeyefoundation.com/contact-lens-wearer](http://AKeyefoundation.com/contact-lens-wearer).

### Swimming and contact lenses

We encourage people not to swim with contact lenses in at all due to the risk of AK. Many people have contracted AK by swimming with contact lenses in. You can get prescription goggles. If you do swim with contact lenses, your best option is to use swimming goggles or a correctly fitted snorkeling mask

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to prevent water coming close to your eyes, which will reduce but not eliminate the risk of infection. Throw away these contact lenses right after.

### How is AK diagnosed?

Early diagnosis is key for effective treatment of AK. AK is often incorrectly diagnosed as bacterial or viral keratitis. This can cause poor treatment and pain management. For example, many cases of AK have been misdiagnosed as herpes simplex keratitis which is treated with steroids. This treatment can hide AK symptoms, and once stopped the infection can become worse.

### AK is diagnosed based on a combination of:

- History
- Symptoms
- Scraping samples from the cornea for cultures or PCR. Your eye will be numb from a drop given by your eye doctor, and the eye doctor will take sample cornea cells for testing. The samples are then sent to a laboratory to check for signs of AK, be aware of false negative. This will hurt, sting or burn after the procedure for several days.
- Confocal microscopy – Imaging of the cornea using a special machine.

### What are the treatment options for acanthamoeba keratitis?

If you are receiving treatment for an eye condition and symptoms continue, especially increased pain and light sensitivity or worsening vision, then return to your eye doctor as soon as possible. If you are not already being seen by a cornea specialist, you should make every effort to see a cornea doctor that specializes in infections of the cornea.

Diligence and early detection will increase the chances of successful treatment and prevent vision loss.

- AK is treated with both eye drops and oral medications. Anti-amoebic [uh-mee-buhk] eye drops and pain killers, eye drops, pain killers, and other necessary medications will be prescribed your eye doctor. You will often be on treatment for several weeks and in many cases, several months.
- AK treatment may initially cause your inflammation to get worse, up to a few weeks. This is part of the healing process<sup>3</sup>.
- If your infection does not improve with the above treatments, you may need to undergo a corneal transplant, where all or part of the cornea is removed and then replaced with healthy donor tissue. In some cases, the infected eye may need to be removed.

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## Questions to ask your eye doctor about AK:

1. How can I protect myself against AK?
2. What parts of my eye are affected, and can it spread to other parts of my body?
3. What complications could I experience with AK?
4. Can my AK be treated, and what are my options?
5. Could I lose my vision from my AK infection?
6. How can I manage my pain from AK?
7. What are my options for mental health services?
8. Could I relapse from infection after treatment?

- Even if treated, AK may be in the hibernating stage and resist treatment. This could cause a relapse in infection or potential drug resistance, so be sure to follow up with your eye doctor.

## Is there anything you can do if you lost vision to AK?

If you or someone you know has lost some sight due to AK, there are professionals who can help you with this transition, including low vision specialists. A low vision specialist may help you determine tools and skills that can assist you in performing everyday activities with greater ease by maximizing the use of the vision you still have. This can be done with lenses, lighting, assistive technology or devices, and visual and non-visual skills. You will undergo a full vision evaluation, which will also include education, and counseling to support your mental wellness. A low vision specialist will help determine the right plan based on your needs. Ask your eye doctor to recommend a low vision specialist.

## Visit these support resources if you have lost some sight due to AK:

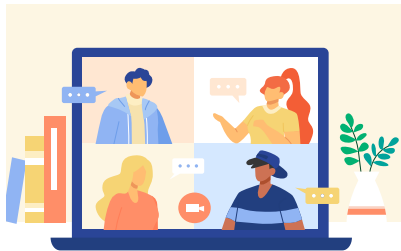
### Living Well with Low Vision

Living Well with Low Vision is an online resource to educate those with loss of vision on how to maintain their independence and quality of life. [LowVision.PreventBlindness.org](https://www.preventblindness.org/low-vision)

### ASPECT Patient Empowerment Program

Prevent Blindness developed the ASPECT Program—Advocacy, Support, Perspective, Empowerment, Communication, and Training—to engage individuals in their eye health through storytelling and advocacy in a virtual group setting. The program aims to equip participants with knowledge, skills, and confidence to become advocates for vision and eye health – at the individual, peer-to-peer, community, state, or national level. To learn more about the ASPECT Program, visit [PreventBlindness.org/aspect](https://www.preventblindness.org/aspect).

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### How does AK affect mental health?

AK can cause loss of vision. For some, loss of vision can lead to feelings of depression, anxiety, and loss of independence.

Some individuals may notice a change in their desire to socialize with others, need for isolation in dark rooms, or increased frustration with the additional time it may take to accomplish tasks of daily living. Not everyone who has vision loss will experience mental health symptoms, but if you do, there is help available.

### To help support your mental health as you deal with AK:

- **Talk to your primary care doctor, mental health professional, or eye doctor:**

Talk to your doctor about any changes to your emotional well-being. Ask your eye doctor questions on how AK will affect your daily life and work. Seek assistance on how to deal with the changes in your life and consider using vision rehabilitation to maximize the use of the vision you do have.

- **Seek support:** Look for support groups of others who are going through AK. See resources below for AK support groups. ***You are not alone in this!***
- **Connect with others and the things that bring you joy:** Stay connected with friends and family to keep you from feeling isolated. Over time, you can find new ways to do the things you love or to discover new hobbies that bring you happiness.
- **Exercise:** Exercise can improve symptoms of depression and anxiety and help you feel better. Talk to your health care professional to determine what exercise routine may work best for you, especially if you have changes to your vision due to AK.
- **Seek vision rehabilitation:** Ask your eye doctor to recommend a low vision specialist. The specialist can help to maximize the use of the vision you have and teach skills to perform tasks differently with your vision loss.



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To learn more about your mental health as you deal with AK, check out the following resources:

- **Vision Loss and Mental Health** [CDC.gov/Vision-Health/About-Eye-Disorders/Vision-Loss-Mental-Health.html](https://www.cdc.gov/Vision-Health/About-Eye-Disorders/Vision-Loss-Mental-Health.html)
- **Centers for Disease Control and Prevention (CDC):** The Mental Health of People with Disabilities [CDC.gov/ncbddd/DisabilityandHealth/Features/Mental-Health-for-All.html](https://www.cdc.gov/ncbddd/DisabilityandHealth/Features/Mental-Health-for-All.html)
- **American Psychological Association:** Depression [APA.org/Topics/Depression](https://www.apa.org/topics/depression)
- **National Alliance on Mental Illness (NAMI):** Signs and symptoms [NAMI.org/About-Mental-Illness/Warning-Signs-and-Symptoms](https://www.nami.org/About-Mental-Illness/Warning-Signs-and-Symptoms)

## Resources:

If you have AK, the information and resources below can guide you through your journey.

### Join the Acanthamoeba Keratitis Support Group Today

Are you, or someone you know, experiencing Acanthamoeba Keratitis? Know that you are not alone. Through this dedicated support group, you will find a safe space where you can share your experiences and connect with others who understand. Gain valuable insights from real patient experiences and learn how to advocate for your proper care.

Join the support group: [Facebook.com/Groups/AcanthamoebaKeratitisSupportGroup](https://www.facebook.com/Groups/AcanthamoebaKeratitisSupportGroup) or scan the QR code.

**AK Eye Foundation:** [AKeyeFoundation.com](https://www.akeyefoundation.com)

**CDC Website:** [CDC.gov/Parasites/Acanthamoeba/gen\\_info/Acanthamoeba\\_Keratitis.html](https://www.cdc.gov/Parasites/Acanthamoeba/gen_info/Acanthamoeba_Keratitis.html)



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## Citations:

- [1] Zhang, Y., Xu, X., Wei, Z., Cao, K., Zhang, Z., & Liang, Q. (2023). The global epidemiology and clinical diagnosis of Acanthamoeba keratitis. *Journal of infection and public health*, 16(6), 841–852. <https://doi.org/10.1016/j.jiph.2023.03.020>
- [2] Faselow, N., Sirajuddin, N., Yin, X. T., Huang, A. J. W., & Stuart, P. M. (2021). Acanthamoeba Keratitis, Pathology, Diagnosis and Treatment. *Pathogens (Basel, Switzerland)*, 10(3), 323. <https://doi.org/10.3390/pathogens10030323>
- [3] Lorenzo-Morales, J., Martín-Navarro, C. M., López-Arencibia, A., Arnalich-Montiel, F., Piñero, J. E., & Valladares, B. (2013). Acanthamoeba keratitis: an emerging disease gathering importance worldwide?. *Trends in parasitology*, 29(4), 181–187. <https://doi.org/10.1016/j.pt.2013.01.006>