



Acanthamoeba Infection

Acanthamoeba is a microscopic, free-living amoeba that is relatively common in the environment. This amoeba has been isolated from water (including natural and treated water in pools or hot tubs), soil, air (in association with cooling towers, heating, ventilation and air conditioner [HVAC] systems), sewage systems, and drinking water systems (shower heads, taps). Most people will be exposed to *Acanthamoeba* during their lifetime and will not get sick. However, *Acanthamoeba* is capable of causing several infections in humans.

- *Acanthamoeba* keratitis – A local infection of the eye that typically occurs in healthy persons and can result in permanent visual impairment or blindness.
- Granulomatous Amebic Encephalitis (GAE) – A serious infection of the brain and spinal cord that typically occurs in persons with a compromised immune system.
- Disseminated infection – A widespread infection that can affect the skin, sinuses, lungs, and other organs independently or in combination. It is also more common in persons with a compromised immune system.

How does infection with *Acanthamoeba* occur?

Acanthamoeba keratitis infection has been associated with contact lens use, although people who do not use contact lenses can become infected. Contact lens wearers who practice proper lens care can develop infection. However, poor lens hygiene or wearing contact lenses during swimming, hot tub use, or showering might increase the risk of *Acanthamoeba* entering the eye and causing a serious infection.

Acanthamoeba can also cause [disseminated infection](#) by entering the skin through a cut, wound, or through the nostrils. Once inside the body, amoebas disperse via the bloodstream to other parts of the body, especially the lungs and brain and spinal cord.

What are the symptoms of *Acanthamoeba* infection?

The symptoms of *Acanthamoeba* keratitis can be very similar to the symptoms of other more common eye infections. The symptoms, which can last several weeks to months, are not the same for everybody and might include:

- Eye pain
- Eye redness
- Blurred vision
- Sensitivity to light
- Sensation of something in the eye
- Excessive tearing

Who is at risk for infection with *Acanthamoeba*?

Although infection is very rare, people who wear contact lenses are at increased risk for *Acanthamoeba* keratitis. Practices among contact lens users that increase the risk of getting *Acanthamoeba* keratitis include:

- Improper storage and handling of lenses
- Improper disinfection of lenses (such as using tap water or homemade solutions to clean the lenses)
- Swimming, using a hot tub, or showering while wearing lenses
- Coming into contact with contaminated water
- Having a history of trauma to the cornea

How can I prevent infection?

These guidelines should be followed by all contact lens users to help reduce the risk of eye infections, including *Acanthamoeba* keratitis:

- Visit your eye care provider for regular eye examinations.
- Wear and replace contact lenses according to the schedule prescribed by your eye care provider.
- Remove contact lenses before any activity involving contact with water, including showering, using a hot tub, or swimming. Extended-wear contact lens users should discuss concerns with their eye care provider.
- Wash hands with soap and water and dry before handling contact lenses.
- Clean contact lenses according to the manufacturer's guidelines and instructions from your eye care provider.
 1. Use fresh cleaning or disinfecting solution each time lenses are cleaned and stored. Never reuse or top off old solution.
 2. Never use saline solution and rewetting drops to disinfect lenses. Neither solution is an effective or approved disinfectant.
- Store reusable lenses in the proper storage case.
 1. Storage cases should be rinsed with sterile contact lens solution (never use tap water) and left open to dry after each use.
 2. Replace storage cases at least once every three months.



Early inflammation due to *Acanthamoeba* keratitis. (Photo courtesy of Dan B. Jones, M.D.)