

# Ensuring Safe Use of Contact Lens Solution

**N**ot emptying the solution out of your contact lens case after each use could cost you your sight. That's because solutions that are left over in the case after a disinfection cycle are essentially "dirty." Using fresh solution each time helps reduce the risk of problems.

"The solution no longer has the same effectiveness for disinfection as when it was freshly placed in the case," says Bernard Lepri, O.D., M.S., M.Ed., of the Division of Ophthalmic and Ear, Nose and Throat Devices in the Food and Drug Administration's (FDA) Center for Devices and Radiological Health (CDRH). "The leftover solution can have little disinfecting chemical left to kill bacteria and other micro-organisms that may contaminate your contact lenses and lead to serious eye infections."

"FDA regulations require that a manufacturer who wants to market a new contact lens solution demonstrate that it is just as safe and effective as an already marketed product," Lepri says.

In January 2009, FDA convened a workshop called "Microbiological Testing of Contact Lens Care Products," in collaboration with several eye care professional groups. Held at FDA's White Oak facility in Silver Spring, Md., the workshop aimed to gain consensus on test methods for



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evaluating contact lens solutions and the development of Acanthamoeba keratitis, a rare but serious eye infection that's caused by a parasite.

## Improving Guidance

FDA also convened a meeting of its Ophthalmic Devices Panel on June 10, 2008, to consider ways to improve contact lens safety. This group of outside experts gave input on updating the existing guidance for multipurpose contact lens care products. Multipurpose products are those that can be used to clean, disinfect, and rinse contact lenses.

FDA is revising the guidance document that specifically addresses the labeling and directions for use of contact lens care products and solutions.

Among the panel's recommendations on labeling and directions for use:

- Contact lens solution manufacturers should include a discard date on their products, in addition to the usual expiration date. Consumers should never use expired products. The discard date is the date the solution should be thrown out after opening.
- Contact lens wearers should rub and rinse their lenses for added effectiveness of cleaning and disinfection. This recommendation is consistent with advice from the American Optometric Association and the American Academy of Ophthalmology. The

direction to “Rub and Rinse” your lenses, based on the advice of your eye care professional, has always been part of “No Rub” consumer labeling for multipurpose care products.

### The Rub and Rinse Method

The rub and rinse method is similar to washing one’s hands. The multipurpose solution is placed on the lens in the palm of the hand. With the index finger of the opposite hand, the solution is rubbed over the surface of the contact lens for 5 to 10 seconds. The lens is turned over and the procedure is repeated.

Finally, a strong stream of the contact lens multipurpose solution is sprayed over both sides of the lens to remove any debris attached to the lens. Research has shown that this procedure helps remove more bacteria, protein, and other deposits from the surface of the lens.

This may contribute to better lens hygiene and safety. “The rub and rinse method is based on the same concept of hand washing,” Lepri says. “You get more dirt off of your hands by rubbing them with soap and then rinsing, rather than merely just rinsing.”

### About Eye Infections

Failure to use contact lenses and solution correctly can result in eye infections. Both bacterial and fungal infections can lead to serious consequences such as permanent loss of sight if left untreated.

Bacterial infections are more common than fungal infections. Characterized by severe pain, fungal infections are much more difficult to diagnose and treat. “Fungal infections are much more dangerous because they slowly proliferate within the cornea and are highly resistant to treatment,” Lepri says. “When a fungal infection occurs, it results in a corneal ulcer, which can lead to permanent blindness. Bacterial infections such as Pseudomonas are extremely rapid, result in corneal ulcers, and cause blindness—sometimes within as little as 24 hours if not diagnosed and treated promptly.”

The symptoms of an eye infection are: discomfort, excess tearing or other discharge, unusual sensitivity to light, itching, burning, or gritty feelings, unusual redness of the eyes, blurred vision, swelling, and pain.

How can you tell if you have an infection or if you are suffering from allergies? Typically, the major difference between infection and allergy is that allergy is accompanied by itching and watery discharge and will affect both eyes relatively the same.

Infection presents with severe pain, redness, mucus discharge, and blurred vision, and often affects one eye only. The best way to determine whether your symptoms are due to an infection or allergies is to consult your eye care professional as soon as possible after the onset of symptoms.

### Dos and Don’ts for Contact Lens Wearers

#### DO:

- Always wash your hands before handling contact lenses to reduce the chance of getting an infection.
- Remove the lenses immediately and consult your eye care professional if your eyes become red, irritated, or your vision changes.
- Always follow the directions of your eye care professional and all labeling instruction for proper use of contact lenses and lens care products.
- Use contact lens products and solutions recommended by your eye care professional.
- Rub and rinse your contact lenses as directed by your eye care professional.
- Clean and disinfect your lenses properly following all labeling instructions provided with your lens care products.
- Clean, rinse, and air dry your lens case each time lenses are removed. You may want to flip over your lens case while air drying so that excess solution can drain out of the case. Contact lens cases can be a source of bacterial growth.
- Replace your contact lens storage case every 3-6 months.

#### DON’T:

- Don’t use contact lens solutions that have gone beyond the expiration or discard date.
- Don’t “top-off” the solutions in your case. Always discard all of the left-over contact lens solution after each use. Never reuse any lens solution.
- Don’t expose your contact lenses to any water: tap, bottled, distilled, lake, or ocean water. Never use non-sterile water (distilled water, tap water, or any homemade saline solution). Exposure of contact lenses to water has been associated with Acanthamoeba keratitis, a corneal infection that is resistant to treatment and cure.
- Don’t put your lenses in your mouth to wet them. Saliva is not a sterile solution.
- Don’t transfer contact lens solutions into smaller travel size containers. This can affect the sterility of the solution which can lead to an eye infection. Transferring solutions into smaller size containers may also leave consumers open to accidentally using a solution that is not intended for the eyes. [FDA](#)

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### For More Information

Contact Lens Solutions and Products  
[www.fda.gov/MedicalDevices/ProductsandMedicalProcedures/HomeHealthandConsumer/ConsumerProducts/ContactLenses/default.htm](http://www.fda.gov/MedicalDevices/ProductsandMedicalProcedures/HomeHealthandConsumer/ConsumerProducts/ContactLenses/default.htm)

Focusing on Contact Lens Safety  
[www.fda.gov/ForConsumers/ConsumerUpdates/ucm048893.htm](http://www.fda.gov/ForConsumers/ConsumerUpdates/ucm048893.htm)

About Acanthamoeba Infection  
[www.cdc.gov/ncidod/dpd/parasites/acanthamoeba/index.htm](http://www.cdc.gov/ncidod/dpd/parasites/acanthamoeba/index.htm)