SOFTWARE & TECH

How To Make Contact Lens Solution

Published: November 20, 2026 | Index ID: #-

Introduction

If you wear contact lenses, you know that keeping them clean and hydrated is essential for both comfort and eye health. The solution you use every night to rinse, disinfect, and store your lenses is something you probably take for granted—until you run out and the nearest store is closed. In that moment of panic, the thought might cross your mind: **how to make contact lens solution**at home. After all, it's just salt water, right? Unfortunately, the answer is far more complex—and dangerous. This article will explore what contact lens solution really is, why homemade versions are risky, and what you should do if you ever find yourself without a bottle. We will also cover the science behind the product, common ingredients, and emergency alternatives that are safer than attempting a full DIY solution.

Understanding Contact Lens Solution

Contact lens solution is not simply salted water. It is a carefully formulated sterile liquid designed to perform multiple critical functions:

- Cleaning – Removes debris, protein deposits, and lipids from the lens surface.
- Disinfecting – Kills harmful microorganisms such as bacteria, fungi, and viruses.
- Rinsing – Flushes away loosened debris and residual cleaning agents.
- Wetting & Lubricating – Makes the lens comfortable on the eye and prevents drying.
- Storing – Keeps the lens hydrated and sterile between uses.

Commercial solutions are manufactured under strict sterile conditions, with precisely balanced pH levels (typically around 7.0–7.6), osmolality that matches tears, and preservatives that prevent contamination over time. Attempting to replicate this at home with kitchen ingredients invites serious risks.

Why Making Your Own Contact Lens Solution Is Dangerous

Lack of Sterility

Even if you boil water and use clean containers, your home environment is not a laboratory. It is nearly impossible to achieve the sterility required for a product that will come into direct contact with your cornea. Tap water, even if boiled, can contain minerals and endotoxins that irritate the eye. More importantly, home-prepared solutions are prone to bacterial and fungal contamination within hours.

Incorrect Ionic and pH Balance

Your tears have a specific salt concentration (about 0.9% sodium chloride) and pH level. Homemade solutions often have too much or too little salt, leading to stinging, dryness, and even corneal damage. An improper pH can cause the lens material to warp or become uncomfortable.

No Disinfecting Power

Most DIY recipes for contact lens solution are essentially saline—salt water. Saline can rinse a lens, but it does not kill microbes. Storing your lenses overnight in non-disinfecting solution allows bacteria to multiply, putting you at high risk for eye infections like keratitis, which can lead to vision loss.

Lack of Preservatives

Commercial solutions contain preservatives such as polyquaternium-1 or aldox to prevent microbial growth after the bottle is opened. Without these, your homemade solution would need to be used immediately and discarded, making it impractical for regular use.

Common Ingredients in Commercial Contact Lens Solutions

To understand why DIY attempts fail, it helps to know what goes into a quality product. Typical active and inactive ingredients include:

- Sodium Chloride – Provides the right osmotic pressure (tonicity) to match tears.
- Boric Acid / Sodium Borate – Buffer systems that maintain a stable pH.
- Disodium EDTA – Helps remove calcium deposits and enhances preservative effectiveness.
- Poloxamine / Tetronic – Surfactants that break down lipids and proteins.
- Polyquaternium-1 / Aldox / PHMB – Antimicrobial preservatives.
- Hydroxypropyl Methylcellulose (HPMC) – Lubricant that increases comfort.

Each ingredient has a specific function, and the proportions are carefully calculated to ensure safety and efficacy. Mixing these from scratch is not only impractical but also dangerous without proper pharmaceutical training.

The “DIY” Recipes That Exist Online (And Why They Are Unsafe)

A quick internet search for **how to make contact lens solution**will yield various recipes, most of which fall into two categories:

1. Saline Solution with Salt and Water

The most common “recipe” involves dissolving non-iodized salt in distilled water, sometimes boiling it. While this can produce a saline liquid, it is not sterile after preparation, lacks preservatives, and does not disinfect. Using it for more than a quick rinse is dangerous.

2. Boiling Water and Cooling

Some sources suggest simply using cooled boiled water as a temporary substitute. This is even worse—plain water is hypotonic, meaning it will cause the lens to swell and change shape, and it will not kill pathogens. Storing lenses in water is a leading cause of *Acanthamoeba* keratitis, a severe and hard-to-treat eye infection.

These recipes may appear in forums or blogs, but they are never endorsed by eye care professionals. The potential consequences—corneal ulcers, scarring, or even blindness—far outweigh any convenience.

How to Make a Saline Rinse (For Emergency Use Only)

If you absolutely must create a temporary rinse because you have no other option (e.g., you are in a remote location and need to remove a particle from your eye), you can prepare a sterile saline solution. **Important: This is not a substitute for disinfecting solution and should never be used for overnight storage.**Use only for a quick rinse of the lens before insertion, and discard the solution immediately. Follow these steps with extreme caution:

1. Wash your hands thoroughly with soap and water.
2. Boil 1 cup (240 ml) of distilled or purified water in a clean pot for at least 5 minutes to sterilize it.
3. Add 1/2 teaspoon of non-iodized salt (pure sodium chloride, without anticaking agents). Stir until fully dissolved.

4. Let the solution cool to room temperature in a covered sterilized container.
5. Use immediately. Do not store for later use. Discard any leftover solution after one use.

This mixture is only isotonic and sterile at the moment of preparation. It does not disinfect, so it must not be used as a storage solution. The safest approach is to never rely on homemade products for regular lens care.

Proper Contact Lens Care Routine

To keep your eyes healthy, follow these eye doctor-recommended practices:

- Always use fresh commercial solution. Never reuse or top off old solution in the lens case.
- Rub and rinse your lenses. Even with “no-rub” solutions, gently rubbing the lens in your palm with a few drops of solution helps remove deposits.
- Store lenses in a clean case. Rinse the case with fresh solution (not water) and let it air dry. Replace every three months.
- Never use tap water, saliva, or saline only. Only multipurpose or hydrogen peroxide-based solutions are designed for disinfection.
- Follow the recommended replacement schedule. Daily, bi-weekly, or monthly lenses should be discarded on schedule.

Alternatives If You Run Out of Solution

If you find yourself without contact lens solution, here are safer steps than attempting a homemade solution:

- For soft contact lenses: If you have no solution, the safest option is to discard the lenses and use a new pair (if available). Do not store them in water or homemade saline.
- For rigid gas permeable (RGP) lenses: You can store them for a short time (a few hours) in sterile saline only if it is a commercial sterile saline product. Homemade saline is not recommended.
- Visit a pharmacy or optometrist: Purchase a small travel-size bottle of solution. Many stores sell single-use packets.
- Use lubricating rewetting drops: If you just need to moisten a lens before insertion, sterile saline rewetting drops are generally safe for that purpose, but they are not disinfectants.

Frequently Asked Questions

Can I use hydrogen peroxide as contact lens solution?

Only if you buy a specific hydrogen peroxide-based contact lens solution (like Clear Care). Do not use household hydrogen peroxide—it is too strong and requires a neutralization step that is only achieved with the special case provided.

Is it safe to use distilled water in an emergency?

No. Distilled water, though purer than tap water, is not sterile after opening and can still cause lens swelling and contamination. It should never be used for storage.

What if I only need a rinse to remove a dust speck?

Use commercial sterile saline from a sealed unit. If that is not available, flush your eye with clean water (not the lens), but do not rinse the lens with anything other than an approved solution.

Can I make a disinfecting solution by adding rubbing alcohol?

Absolutely not. Alcohol will damage the lens material and cause severe eye irritation. Never add any chemical to a

homemade solution.

Conclusion

While the question of **how to make contact lens solution**might arise from necessity or curiosity, the answer is clear: do not do it. The risks of infection, corneal damage, and vision loss are too high. Commercial contact lens solutions are affordable, widely available, and thoroughly tested for safety. If you ever run out, the best course of action is to discard your lenses or purchase a small bottle from a nearby store. Your eyes are irreplaceable—treat them with the care they deserve by using only approved, sterile products. Remember: a little inconvenience is far better than a trip to the emergency room.

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