

Contact Lens Solutions

(Optical Seminars Course # HS-14)

by

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Course Objectives

Upon completing this one-hour home study module, participants should:

1. Be less confused by the dizzying array of available contact lens products.
2. Take more seriously the care of contact lenses and be better able to communicate a seriousness of purpose to their patients.
3. Learn and apply the standard five-step process to soft contact lens care.
4. Learn and apply the standard six-step process to gas permeable contact lens care.
5. Have acquired a better working knowledge of the different general characteristics of contact lens solutions and other related terms.
6. Understand what different chemical ingredients are routinely added to contact lens solutions, and why.
7. Be able to more effectively communicate the different characteristics of specific contact solutions routinely used by their patients.
8. Achieved a minimum score of 70% on the final assessment.

Introduction



One day soon, perhaps all contact lens wearers will wear their lenses for the prescribed time, throw them out and put in new ones. I believe that will eventually become the universal standard of care for all contact lens wearers. For some wearers, that is already reality. Until that time, most wearers must still perform a certain regimen to ensure clean lenses, crisp vision, and healthy eyes.

I promise you this is a true story: I recently answered the phone and on the other line was a frantic (that's an understatement) mother. Apparently, her teenage daughter had been overwearing her soft contact lenses, so the mother called her husband and asked him to pick up some contact solution for the girl. He did. But rather than purchasing her usual solution (he recognized it by the box design), he purchased one that was \$1.50 cheaper. Long story short, it was some hydrogen-peroxide based cleaner. Instead of reading the directions, and even though the bottle had a red tip, the girl generously squirted the solution directly into her eye. That should be enough said, but if you are new to the profession and don't have a lot of experience with contact lenses, I encourage you to Google, "What happens if you squirt a lot of hydrogen peroxide in your eye?" Even though it was her day off, I was able to contact (no pun intended) our independent optometrist (who luckily has many years of experience with contact lenses) who met the family there within the hour. A half hour and a couple of pharmaceutical prescriptions later, it turned out okay. While that is indeed a true story, it is happily an unusual one. Perhaps more common:

Imagine a typical, first-time contact lens wearer. He just realized that he forgot to pack the contact lens solutions before he left on his important business trip. It's late in the evening, and the only store open is the local Wal-Mart Supercenter or the 24-hour CVS. He finds his way to the pharmacy department and is almost immediately overwhelmed with the selection: Opti-Free, Opti-Free Express, Replenish, Pure Moist, Supra-Clens, Bio-True, re-nu Fresh, re-nu Sensitive, re-nu Travel Kit. Just then he notices that most of these items have an equivalent Wal-Mart Equate brand which is selling for significantly less money. Blink, Revita-Lens, Complete, Unisol. Lions and tigers, and bears, oh my! The choices are truly mind-boggling. It might take a wizard to provide some answers here. Welcome to the sometimes-confusing world of contact lens solutions.

Although the vast array of choices may seem confusing or even overwhelming, the care of contact lenses is serious business, and if wrong choices are made, they could lead to adverse reactions that range between the two extremes of mild irritation...and blindness.

The most important decision a contact lens wearer should make is also one of the first: when it comes to how to clean and care for contact lenses, and what solutions to use to do just that, the patient should always follow the advice of his or her ECP (Eye Care Professional). That means the prescriber first and foremost, and the optician as well. These days, complying with instructions is easier than ever. Sometimes it's only one bottle of solution that can be used to clean, rinse, and even store the contact lenses. Sometimes, of course, it's more involved. Either way, the fact is that many patients willfully deviate from given instructions.

Let's take a minute to think about the information in the last paragraph. If you have any experience in the field whatsoever, the advice that patients should not switch solutions without first consulting their ECP came as no surprise. Likewise, patients who have been wearing contacts for any length of time have heard that admonition several times. And yet, some patients will readily purchase a generic or off-brand cleaner to save \$1.50. Why? Maybe it's because their ECP has never told them *WHY* that's not such a great-idea. Sometimes the difference between a highly effective optician (one whose patients follow given advice), and a not-so-effective optician (one whose advice goes in one patient's ear and out the other) is that the effective optician is the one who explains why; the one who connects the dots if you will. So instead of saying, "Now remember Ms. Williams, never switch cleaner or saline brands without first consulting with me or the doctor," a highly effective, serious-minded optician would probably say, "Now remember, Ms. Williams, never switch cleaner or saline brands without first checking with me or the doctor. After all, some products are not compatible with other products, or with your kind of contact lenses. Using incompatible products could ruin your contacts or even harm your eyes." Hopefully you see how much more likely the patient is to comply with your instructions in the latter example.

If a patient doubts the serious nature of the choices involving contact lens solutions, simply ask him to go home and Google "Bausch and Lomb recall of 2006." If he does, he would be hopefully shocked to read, "On March 6, 2007, Bausch & Lomb announced a recall of certain lots of ReNu MultiPlus contact lens solution due to an elevated amount of trace iron, which could potentially shorten the shelf life and discolor the product. The recall of the 12 lots throughout the United States, Canada, Latin America, Korea, and Taiwan covers approximately one million bottles of solution. The recalled lots are marked with the '2008-03' expiration date. Although there have been no reports of injury, the eye is susceptible to any number of conditions that can result in permanent disability. On November 22, 2006, the Food and Drug Administration and Advanced Medical Optics, Inc. alerted the medical community to a recall of 18 lots of Complete MoisturePLUS multipurpose contact lens care solution and Active Packs distributed throughout stores in the United States. These lots presumably contributed to increase in bacterial contaminations that lead to eye infections and microbial keratitis." That was an excerpt from the original reporting. As of 2018, more than 400 lawsuits had been brought claiming eye injury from using the recalled products. In fact, in 2023, a nationwide recall of certain contaminated eye drops (not typical contact lens care solutions) was issued after a strain of *Pseudomonas Aeruginosa* bacteria in products like EzriCare Artificial Tears caused dozens of

serious infections, vision loss, and multiple deaths in the U.S. This outbreak highlighted the risks of non-sterile ophthalmic products and led public health officials to warn consumers to stop using the affected eye drops immediately and seek medical help if symptomatic.

And then, just for kicks, Google “Bausch and Lomb recall 2021.” This one affected many other countries other than the United States, so we won’t go into detail on this one. Just know that several of their products that had been manufactured in Milan, Italy, were recalled because of deficiencies in the sterilization process of some of the component parts of their containers.



In short, to make sense of all the choices that face the patient when it comes to contact lens solutions, it helps to know what steps are required when it comes to the care of contact lenses – especially soft contact lenses.

Contact Lens Care – Soft Contact Lenses

It’s quite simple: Start with the contact lens for the right eye: clean, rinse, and disinfect. Repeat the process for the contact lens for the left eye. Okay, that’s a bit of an oversimplification, but maybe not. Let’s break it down into five easy steps for your patients. This is how you might verbally explain the process:

1. Clean the area where you will be working, and then thoroughly wash your hands (now connect the dots!) so that you won’t transfer any dirt, germs, or bacteria to your eyes. Don’t use any soaps with oils or moisturizers (dots...) because that film can transfer to the lenses. Rinse your hands thoroughly and dry them with a lint-free towel.
2. Always working with the same side (right or left) first, remove one lens and clean it with the recommended cleaner. Cleaning is the step that removes any eye-produced products (such as mucin), dirt, cosmetics or other debris that may have built up on the lens during wear. Not properly cleaning contacts will eventually lead to lens discomfort, and possibly impaired vision. It is interesting to note that the FDA (Food and Drug Administration) recommends rubbing the lens in the palm of your hand during this step, even if you are using a “no rub” advertised product. (A colleague of mine, the late Earl Dowding, O.D. used to be fond of telling his patients who wanted to use a no-rub regimen, “Okay, but think about it: If you were taking a shower, would you get cleaner if you just applied liquid soap to your body and rinsed it off, or if you rubbed your body with a washcloth?” He made a good point.)



3. Once the lens is cleaned it then needs to be rinsed. This is an important, sometimes overlooked or rushed step, in that the rinsing is what removes and washes away all the loose particles you produced during the cleaning process (step 2).
4. Disinfect by placing the cleaned and rinsed lens in a *clean* or brand-new lens case and fill it with *fresh* solution. Patients sometimes leave the old solution in the case, place the clean lens in the case, then “top it off” with fresh solution. Not a good idea. This disinfecting process kills microscopic organisms that can be missed in the cleaning process. The minimum disinfection time varies from product to product, so check the instruction sheet that came with your system.
5. Repeat steps two through four for the other lens.

If your lenses are not disposable or frequently replaced, you may sometimes wear the same lenses for more than a year before replacing them. Of course, a patient should follow the wearing schedule as closely as she follows the cleaning regimen. With lenses that are used for a long time, cleaning, rinsing, and disinfecting may not be enough. While some protein may be removed by standard cleaning, some protein deposits may be left behind on the lens. That is why the ECP may suggest additional cleaning specifically designed to remove protein left behind by standard cleaning. The longer contact lenses are worn before replacing them, the more likely it is that there will be some protein build-up. For example, if the patient wears lenses that are thrown away once a week, it is not likely she will need a protein remover, but if she goes a year...she almost definitely will. Protein removers come in the form of enzymatic cleaners, or daily protein-removal liquids.

If dryness or irritation occurs, a patient should seek relief by using recommended lubricating or rewetting drops. Additionally, sometimes patients develop allergic reactions to the chemicals present in some solutions (this happens less frequently these days). If it does happen, the patient does not need any additional cleaning supplies. He or she should consult the ECP, who will likely direct the patient to switch to a “preservative-free” product.

Contact Lens Care – Gas-Permeable Lenses

Though less popular than soft contact lenses, gas permeable contacts generally provide sharper vision — especially for patients who have astigmatism or certain higher-order aberrations. Custom-made from a rigid oxygen-permeable material, gas permeable contact lenses (also called GP or RGP contacts) are more resistant to proteins and other deposits, making them easier to keep clean. Also, GP lenses tend to last much longer than soft contacts, reducing lens replacement costs. Lens care systems for GP lenses are like those for soft lenses and usually consist of either the combined use of separate cleaning and disinfecting/storage solutions; or a single, multi-purpose solution for cleaning, disinfecting and storage. In the past, GP lenses often were rinsed with tap water after cleaning. Prescribers now recommend against this practice, because microorganisms in tap water can cause eye infections, including *Acanthamoeba* keratitis. Rinsing gas permeable contacts should be done only with multi-purpose solution or sterile saline. Never rinse GP lenses in tap water or moisten them with saliva.

According to allaboutvision.com, gas-permeable lens wearers should follow the following, six-step process for cleaning and disinfection:

1. Thoroughly wash and dry your hands.
2. Start with your right lens. Remove it and place it in the palm of your hand.
3. Apply a few drops of cleaning solution (or multi-purpose solution, if that's what you're using). Gently rub the lens using a back-and-forth motion.
4. Rinse the lens. Gently rub the lens with your index finger, and then rinse again.
5. Store the lens in a clean case filled with fresh storage solution.
6. Repeat this process for your left lens.

“In some cases, an eye care professional may also recommend adding an enzymatic cleaner to the regular lens care regimen to help remove protein deposits. When recommended, enzyme cleaning typically is performed weekly.”

“GP wearers may also choose to use a rewetting solution while wearing their lenses. These solutions act as a lubricant to increase the comfort of your GP lenses.

It's also important to clean, rinse and air-dry the contact lens case after each use. Some eye care professionals recommend using the multi-purpose lens care solution, not water, for this process. Because lens storage cases can easily become contaminated with bacteria and other organisms, most eye doctors recommend replacing gas-permeable lens cases at least every three months.

Many cleaning solutions designed for soft lenses cannot be used on GP lenses. Patients should not switch solutions or use a product that was not recommended by an eye care professional.

Using generic or store brands, for example, can be a problem. These solutions may be inappropriate for specific GP lens material, and may cause eye redness, burning and possibly an eye infection.

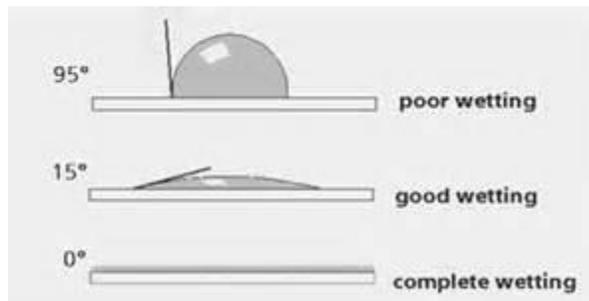
Taking proper care of GP contact lenses will increase the comfort and lifetime of the lenses, reduce the risk of eye health problems and keep the lens-wearing experience pleasant and worry-free.”

Contact Lens Solutions - General

- **Saline.** Saline solutions are generally used for rinsing and storing contact lenses. Sometimes saline is also used in conjunction with enzymatic cleaners (see above). Simple saline should not be used for cleaning or disinfecting.
- **Daily Cleaner.** This is what is used in the cleaning process. A few drops of the daily cleaner should be placed in the palm of the hand. The contact lens is then placed in the cleaner and rubbed for the recommended time – usually 15-20 seconds. Rub both sides, using a back-and-forth, as opposed to a swirling motion. Once cleaned, the lens needs to be rinsed and disinfected.
- **MPS or Multi-Purpose Solution.** This is a solution that has been designed (as its name implies) for all three purposes: cleaning, rinsing, and disinfecting. When using an MPS, lenses should be cleaned exactly as described in the previous paragraph, rinsed for as long as necessary, and disinfected...all with the same MPS solution. Patients using an MPS regimen, may need other products (e.g. enzymatic cleaners or rewetting drops), but for cleaning, rinsing, and disinfecting, this one MPS is all that is needed.
- **Hydrogen-Peroxide Systems.** Many ECPs believe that a hydrogen-peroxide (H₂O₂) based cleaning regimen is the best system to ensure clean lenses and healthy eyes. It is also a great alternative for patients who do experience sensitivity with other solutions. It is also very good at killing *Acanthamoeba*. Of course, it takes a little more care and seriousness of purpose to use, as hydrogen peroxide itself can harm the eyes, causing burning, stinging, itching, and even corneal damage. With most H₂O₂ systems, the lenses are placed in a container, rinsed, and then filled with the H₂O₂ cleaning and disinfecting solution. Once the cleaning process is complete, the solution **MUST** be neutralized. Some cleaners come with a built-in neutralizing disc at the bottom of the container. Other systems require the introduction of a neutralizing tablet. During this neutralizing step, the potentially harmful hydrogen-peroxide solution is changed into a solution of harmless oxygen and water, which makes it safe for the lenses to be placed back in the eyes.
- **Thermal or Ultrasonic Cleaners.** Mostly seen overseas, these devices use heat and/or ultrasonic waves to achieve a clean, wearable lens. Patients should follow the advice of the lens manufacturers and the unit manufacturers when using any such device.

Additional Terms/Information:

- **Cleaner/Surfactant** – Removes dirt, some mucin (protein molecules), debris, make-up, etc.
- **Disinfectant** – Kills organisms – specifically, three different organisms: Staphylococcus aureus, Pseudomonas aeruginosa, and Staphylococcus marcescens, and two different fungi: Candida and Fusarium. Candida is the most common cause of fungal infections worldwide, and Fusarium is a fungus mostly associated with dirt and plants. These five organisms are usually what are used in FDA testing of contact lens cleaning products.
- **Buffer**. Keeps pH of solution as close to the pH of natural tears as possible. A buffer also aids in the efficacy of the cleaning and disinfecting agents. Common chemical buffers used include phosphates, borates, and citrates. These buffers help to control chemical reactions and reduce product degradation.
- **Wetting Agents**. Lubricates the lens surface and decreases the wetting angle - the angle at which a liquid effectively interfaces with a solid. (Wetting angles are measured in degrees between 0-180. A wetting angle of 0° denotes perfect wettability, while an angle of 180° represents perfect non-wettability. Angles between 0-90° are considered angles of high wettability, while angles between 91-179° are considered angles of low wettability.)



- **Protein Solubility**. Reduces protein deposits on the lens surface by suspending mucin away from the lens.
- **Chelator**. Prevents calcium-bound proteins from depositing on the lens surface, which aids in disinfection efficacy. A common chelator is EDTA (ethylenediaminetetraacetic acid), which chemically binds proteins and metals, may prevent lens deposits, and acts as a microbial preservative.
- **Demulcents**. Agents, such as hyaluronic acid, that soothes irritation by forming a film over an epithelial surface. The term “demulcent” is sometimes used interchangeably with the term “lubricant.”
- **MPS**. Multi-Purpose Solution. As previously discussed, one solution that cleans, rinses, and disinfects.

- **MPDS.** Multi-Purpose Disinfecting Solution. Same as MPS, with higher microbiocidal (kills bacteria and viruses) requirements.
- **FDA Stand-Alone Criteria.** This criterion evaluates the innate antimicrobial efficacy of a contact lens disinfectant within the recommended time. After inoculation, the solution must show three log kills for bacteria, and one log kill for fungi.
- **FDA Regimen Criteria (rub, rinse, and soak).** After inoculation of the lenses, the regimen must reduce the levels of bacteria and fungi from 1 million to less than 10 for the lenses in solution.
- **FDA No-Rub Requirement.** Both must show regimen antimicrobial and cleaning efficacy without rubbing.

Contact Lens Solutions – Specific



None of the information provided in this section is meant to promote one product over another. Rather, to provide information for educational purposes so that an optician may answer questions and provide more effective advice to his or her contact lens patients. Additionally, in taking the patient/consumer/laymen point-of-view the products discussed and the images shown were all on display at my local Walgreens in December 2025. The photo above was taken December 19, 2025.

➤ **OPTI-FREE® PureMoist® Contact Lens Solution.** This is described as an MPDS – a Multi-Purpose Disinfecting Solution, with HydraGlyde® Moisture Matrix. Talk about confusion! But to put it in terms the average consumer might appreciate, Alcon claims that this Moisture Matrix will “surround your lens in a cushion of moisture,” that will provide comfort that lasts “from morning till night.” Specifically, Alcon claims this happens for four reasons:

- It forms a cushion of moisture across the surface of the lens, which creates a barrier that reduces deposits and removes dirt.
- It is a multi-purpose disinfecting solution, which contains a proven dual disinfectant system to reduce harmful microorganisms that can cause eye infections.



- It disinfects all types of soft contact lenses, including silicone hydrogels, and is gentle enough for sensitive eyes.
- It reduces oily deposition for clear vision.

➤ **OPTI-FREE® RepleniSH®.** Also described as an MPDS, this one doesn't feature HydraGlyde®, this one features TearGlyde®, with “proven gentle cleaning agents to keep your lenses feeling comfortable throughout the day.” According to the manufacturer:

- The proprietary TearGlyde® reconditioning system works synergistically with your tears to create a shield of moisture that keeps your contact lenses comfortable all day.
- It is a multi-purpose disinfecting solution that contains a proven disinfectant system, which reduces harmful microorganisms that can cause eye infections.
- It effectively cleans by loosening and removing debris and particles that cling to your contact lenses.
- For use with all soft contact lenses including silicone hydrogel.



- **Bausch and Lomb Biotrue.** B&L claims that this MPS was “inspired by the biology of your eyes.” It does this by using a lubricant that is found in the eyes and is close to the natural pH of tears. Biotrue solution “helps prevent certain tear proteins from denaturing for clean contact lenses and fights germs for healthy contact lens wear.” B&L points out that both the Biotrue carton and the bottle are 100% recyclable. Biotrue is an example of bio-inspiration – a product inspired by biology. Other examples of this include an airplane wing inspired by a bird wing, flexible-soled sneakers inspired by the sole of the human foot, and Velcro fasteners inspired by the burs of the burdock plant.



- **renu fresh Multi-Purpose Solution.** “*renu* fresh multi-purpose solution rejuvenates your contact lenses, making it feel like you're putting in a fresh pair every day. *renu* fresh multi-purpose solution is proven to fight germs, clean lenses, and remove irritating protein deposits daily from your soft contact lenses for that fresh lens feeling every day. Daily use of *renu* fresh multi-purpose solution eliminates the need for a separate enzymatic cleaner or daily cleaner for many lens wearers.” It allows for safe storage for up to 30 days.
- **renu Advanced Formula Multi-Purpose Solution.** This solution is designed to work more closely with the chemical formulation of tears. It kills 99.9% of germs. It's proven to fight germs and clean, soft lenses, gently. It contains Dymed and poloxamine.

Poloxamine contains surfactant properties which increase the water solubility hydrophobic, oily substances, making them in effect, more hydrophilic.



- **ReNu MultiPlus Lubricating and Rewetting Drops.** These drops are to be used while wearing contact lenses. These lubricating drops contain an ingredient called povidone, a lubricating substance which provides moisturizing comfort. It can be used with daily, overnight, and disposable lenses.



- **OPTI-FREE® PureMoist® Rewetting Drops.** These drops can be used to reduce lens discomfort “anytime you need it.” As the name implies, it is most compatible with their PureMoist MPDS.

- Moistens contact lenses and removes the particles that may cause irritation.
- Helps prevent protein build-up.
- Can be used on silicone hydrogels and all types of soft contact lenses.



- **ReNu Lubricating and Rewetting Drops.** Used to minimize dryness and discomfort while wearing lenses. It can also be used with daily, overnight, and disposable lenses.



- **Sensitive Eyes Plus Saline.** This saline is used to rinse your contacts. It contains potassium, an ingredient found in human tears. This product does not clean or disinfect contact lenses, rather it should be used to rinse the lenses after using a daily cleaner. It can also be used to rinse lenses before and after using heat, chemical, or a hydrogen-based system. It can be used to dilute enzymatic cleaners, and to store lenses after thermal disinfection.

- **Boston Advance Comfort Formula Conditioning Solution and Boston Advance Cleaner.** According to its manufacturer, Bausch and Lomb, this product is the #1-recommended two-bottle lens care system for gas-permeable (GP) lenses. Boston Advance Comfort Formula Conditioning Solution dual disinfecting system delivers excellent protection against harmful microorganisms. It includes a patented cushioning system to soothe your eyes and provide lens-wearing comfort. Boston Advance Cleaner removes dirt and debris from your lenses, leaving your lenses clean, clear, and ready to be disinfected. Boston Advance Cleaner is visibly tinted and formulated for improved rinsing. The cleaner removes lipids and proteins, while coating and cushioning the lens for more comfortable insertion and wear.



- **Boston Simplus Multi-Action Solution.** Like the soft lens MPDS, Simplus offers the convenience of a one-bottle solution for GP lenses. It not only cleans, disinfects, and conditions GP lenses, it also removes protein with daily use, eliminating the need for weekly protein removal. There is no evening care rub regimen, just rub and rinse prior to use.

- **Boston Conditioning Solution and Boston Cleaner.** B&L claims this system for GP lenses is easy to use and gentle on the eyes. The cleaner removes lipids and proteins, while the conditioner reduces friction between the lens and the eye. In addition to being used for GP lenses, it may also be used on traditional hard contact lenses.
- **Boston One-Step Liquid Enzymatic Cleaner.** Used to help maintain maximum lens comfort, this enzymatic cleaner is used to remove protein deposits from gas-permeable lenses. Since it is liquid, it is meant to be used directly in the lens case, which makes it more convenient and saves time. Most prescribers recommend that GP lens wearers use an enzymatic cleaner at least once a week.



- **Boston Rewetting Drops.** Used for reconditioning and coating the lenses, Boston Rewetting Drops are to be used while wearing the lenses. It helps to remove particles that can cause not only discomfort but also blurred vision. B&L also claims that GP lens wearing time can be extended by using the drops.
- **Refresh Digital PF Lubricant Eye Drops for Eye Dryness.** Preservative-free formula acts fast to relieve dryness, burning, irritation, and discomfort in the eyes that may be due to digital device use. Delivers soothing hydration by supporting all three tear film layers and helps prevent tears from evaporating due to lipid layer deficiencies. Hydrocell technology enables hydration and maintains the volume of cells on the eye's surface. Each box contains 30 single-use vials.



- **COMPLETE® Multi-Purpose Solution Easy Rub® Formula.** Notice Abbott does not advertise this MPS as a “no-rub” solution, rather it is an “easy rub” formula. It promotes

healthy contact lens wear by killing a broad range of microorganisms and bacteria, to cut down on infections. When used as directed, this MPS has been found to be 99.99% effective against standard FDA panel microorganisms. Often times not available now under the “COMPLETE” name, it is available under generic packaging.

- **Blink® Contacts Lubricating Eye Drops.** Not to be confused with Blink Tears Lubricating Eye Drops (which are designed for use when *not* wearing contacts), this one is designed to replenish the tear film layer and provide relief from dry eye for contact lens wearers. It uses a peroxide-free preservative and promotes a healthy eye environment.



- **Blink® Triple Care Lubricating Eye Drops for Dry Eye.** BLINK® Triple Action Lubricating Eye Drops provide fast, soothing relief for dry eyes by moisturizing, stabilizing the tear film, and protecting the ocular surface. Designed for long-lasting comfort, they help refresh tired, irritated eyes caused by screens, contact lenses, or everyday environmental stress.
- **Oxysept® UltraCare® Formula Peroxide Disinfection System.** This is Abbott's peroxide-based cleaning system, which is why it is advertised as providing a “powerful disinfection efficacy against a broad range of microorganisms.” It has a minimum of six hours soak time.
- **CLEAR CARE® Solution.** This Alcon-made cleaning and disinfecting solution promises “pristine” results with pure, clean contacts, all without preservatives. It is a hydrogen peroxide system which provides gentle comfort for sensitive eyes.



- **AOSept® Plus.** The platinum standard in contact lens care – at least according to its manufacturer. AOSept® Plus is a convenient one bottle, no rub, no rinse, peroxide-based lens care solution without the preservatives found in many all-in-one solutions. With the power of peroxide, AOSept® Plus provides unsurpassed disinfecting efficacy and cleaning for improved lens comfort.
- **Clear Care Plus HydraGlyde Cleaning and Disinfection Solution.** For use with all soft & RGP lenses. With HydraGlyde moisture matrix. Sterile & preservative free. For use with all soft and RGP lenses. 3% Hydrogen Peroxide with HydraGlyde Moisture Matrix. Ideal for silicone hydrogel lenses. Long-lasting moisture for soft lenses.



- **Systane Balance Lubricant Eye Drops.** Systane® Balance Lubricant Eye Drops are specially formulated to relieve dry eye associated with meibomian gland dysfunction by restoring the eye's natural lipid layer. They provide long-lasting hydration and protection, helping to reduce tear evaporation and improve overall ocular comfort.



- **Clear Eyes Contact Lens Multi-Action Relief Eye Drops.** For use while wearing daily and extended-wear soft contact lenses These soothing eye drops feature a sterile, buffered solution that refreshes and lubricates eyes for up to 12 hours. Moistens lenses and helps remove particulate matter that can cause irritation and discomfort Helps protect against further irritations.

Conclusion

As stated earlier, the mention of these products should not be interpreted as any type of endorsement or promotion. It was simply, I hope, an objective reporting of what was on display at one of the nation's leading drugstores at a particular moment in time, along with the manufacturer's description of the product and its benefits. Realize also, that no store-brand or generic brands were discussed, which represents approximately 20% of the contact lens solution market.

Additionally, as I am writing this (December 2025), some of the products listed may have been discontinued when you participate in this module, while manufacturers may have added even more, improved products. From time to time, an extraordinary optician should take a few minutes to stay updated on all contact-lens-related solutions. Why? If we as front-line ECPs are unable to provide up-to-date and accurate information, our patients will seek answers elsewhere, which could potentially have an adverse impact on their overall eye health, as well as our reputation and practice. Good luck with the final assessment.

Final Assessment

1. What is the usual recommended “rub” time when using a daily cleaner?
 - a. 5-10 seconds
 - b. 10-15 seconds
 - c. 15-20 seconds
 - d. 20-30 seconds

2. The part of the cleaning process that is meant to kill microscopic organisms is the:
 - a. Cleaning
 - b. Rinsing
 - c. Disinfecting
 - d. Rubbing

3. Topping off old disinfecting or storing solution with new, fresh solution is:
 - a. A good way to maximize your cleaning budget
 - b. Not a good idea
 - c. Acceptable if less than 50% dilution
 - d. Part of the MDS regimen

4. If using a “No-Rub” regimen:
 - a. Lenses should never be rubbed
 - b. Lenses should never be rubbed with a back-and-forth motion
 - c. Use it each and every day
 - d. It’s still okay to rub the lenses

5. Explaining to the patient that thoroughly washing her hands is critically important...so that she doesn’t transfer germs to her eye...so she doesn’t get an eye infection, is an example of an ECP:
 - a. Connecting the dots for patients
 - b. Being an eye care professional
 - c. Demonstrating his optical knowledge to gain trust from a patient
 - d. Wasting his time

6. According to the author, a “sometimes overlooked,” yet important step, in the maintenance of soft contact lenses is:
 - a. Cleaning
 - b. Rinsing
 - c. Disinfecting
 - d. Storing

7. What is the difference between an MPS and an MPDS?
 - a. The MPS has more fungi kills than the MPDS
 - b. The MPDS has higher microbiocidal requirements than an MPS
 - c. The MPS is usually more expensive than the MPDS
 - d. More ECPs recommend an MPS than the MPDS

8. To meet the FDA Regimen Criteria, after inoculation of the lenses, the levels of bacteria and fungi must be reduced from 1,000,000 to less than:
 - a. 100,000
 - b. 1,000
 - c. 100
 - d. 10

9. Which MPDS features Hydra-Glyde Moisture Matrix:
 - a. OPTI-FREE Pure Moist Contact Lens Solution
 - b. OPTI-FREE RepleniSH
 - c. BLINK Contact Lens Lubricating Drops
 - d. B&L Biotrue

10. OPTI-FREE RepleniSH may be used with:
 - a. Hard and Gas Permeable lenses
 - b. Gas Permeable lenses only
 - c. Silicone hydrogel and all other soft lenses
 - d. Silicone hydrogel lenses only

11. Systane Balance Lubricant eye drops can provide relief from problems associated with ?
- Digital eye strain
 - Extreme dry eye
 - Pinguecula
 - Meibomian gland dysfunction
12. The substance in ReNu Multi-Plus Lubricating and Rewetting Drops which provides a high degree of moisturizing comfort is:
- Hydrogen peroxide
 - Povidone
 - Fusarium
 - Moisture-Loc
13. Boston Simplus should be used with:
- Hydrophilic lenses
 - Hydrophobic lenses
 - Silicone Hydrogel lenses
 - Gas permeable lenses
14. Which system is neither a rub nor no-rub system, rather an “easy rub” system?
- COMPLETE Multi-Purpose Solution
 - RevitaLens OcuTec
 - Blink-N-Clean
 - AO-Sept Plus
15. One of the reasons that most practitioners discourage the use of tap water to clean GP lenses is that the tap water may contain:
- Unwanted demulcents
 - Acanthamoeba
 - Chelators
 - H₂O₂

16. Although many ECPs believe it to be the most effective cleaning, which system potentially endangers the patient if not fully neutralized?
- Hydrogen peroxide-based systems
 - Enzymatic solutions
 - MPS systems
 - MPDS solutions
17. Which ingredient of a contact lens solution keeps its pH balance closest to that of human tears?
- Buffers
 - Chelators
 - Demulcents
 - Wetting agents
18. Which of the following wetting angles is closest to perfect wettability?
- 13°
 - 23°
 - 59°
 - 100°
19. EDTA (ethylenediaminetetraacetic acid) is an example of a common:
- Buffer
 - Chelator
 - Demulcent
 - Wetting agent
20. Which of these drops are designed to be used *while* wearing contact lenses?
- Replenish and Express
 - Systane and Clear Eyes
 - Bausch and Lomb
 - MoisturePlus and Oxysept

21. Which wetting angle represents perfect wettability?
- a. 0°
 - b. 45°
 - c. 90°
 - d. 100°
22. In what year did Bausch and Lomb issue a major recall for some of its Complete MoisturePLUS solutions?
- a. 2001
 - b. 2006
 - c. 2010
 - d. 2014
23. If a patient experiences what seems to be an allergic reaction to his or her contact lens solutions, what is the first thing to do?
- a. Change contact lens solutions immediately
 - b. Contact the ECP for recommendations
 - c. Add a weekly enzymatic cleaner to the regimen
 - d. Try a rewetting drop
24. Which of the following usually removes dirt, debris, and make-up?
- a. Fusarium
 - b. Surfactant
 - c. Buffer
 - d. Demulcent
25. Which term is sometimes used interchangeably with the term lubricant?
- a. Fusarium
 - b. Surfactant
 - c. Buffer
 - d. Demulcent

