

# How to Choose and Take Care of Your Contact Lenses

## Classification of Contact Lenses 1: Types of Lenses

Types	Property	Advantages	Disadvantages
Hard Contact Lenses	<ul style="list-style-type: none"> <li>● Non-Oxygen permeable</li> <li>● Made of Acrylic Film</li> </ul>	<ul style="list-style-type: none"> <li>● Hard and solid: not easily distorted, smashed and worn</li> <li>● Comparatively durable</li> <li>● Less likely to breed germs</li> </ul>	<ul style="list-style-type: none"> <li>● Shorter wearing time, 8 hours per day</li> <li>● Easily dislodged, causing discomfort and blurred vision</li> </ul>
Rigid Gas Permeable Lenses	<ul style="list-style-type: none"> <li>● Oxygen permeable</li> <li>● Made of oxygen permeable plastics</li> </ul>	<ul style="list-style-type: none"> <li>● Wearing time is 12 to 14 hours per day (longer than that of hard contact lenses)</li> <li>● Stay firmly on the cornea, less likely to dislodge and cause discomfort</li> </ul>	<ul style="list-style-type: none"> <li>● Comparatively fragile</li> <li>● More likely to accumulate dirt and get worn</li> <li>● Care procedure more complicated than that of hard contact lenses</li> </ul>
Soft Contact Lenses	<ul style="list-style-type: none"> <li>● Oxygen permeable</li> <li>● Made of water absorbent plastics</li> <li>● The thinner or the higher water content, the more oxygen permeable</li> </ul>	<ul style="list-style-type: none"> <li>● Comfortable, easy to adapt</li> <li>● Longer wearing time, 12 to 16 hours per day</li> <li>● Less likely to dislodge and cause discomfort</li> </ul>	<ul style="list-style-type: none"> <li>● Not easy to detect cracks</li> <li>● Prone to tearing by nails</li> <li>● Care procedure more complicated and more likely to breed germs</li> <li>● Shorter life span, need to be replaced every 12 – 18 months</li> </ul>

## Classification of Contact Lenses 2: Wearing Time

Types	Wearing Time	Characteristics of Lenses
Daily-wear Contact Lenses	<ul style="list-style-type: none"> <li>● 12 to 16 hours per day</li> </ul>	<ul style="list-style-type: none"> <li>● No wearing when sleeping</li> <li>● They can be hard contact lenses, rigid gas permeable lenses or soft lenses</li> </ul>
Extended-wear Contact Lenses	<ul style="list-style-type: none"> <li>● Ranging from one day to continuous wearing for 7 days, depending on individual cases</li> </ul>	<ul style="list-style-type: none"> <li>● Higher oxygen permeability, some people can wear them when sleeping</li> <li>● Either rigid gas permeable lenses or soft lenses</li> </ul>
Disposable Contact Lenses (including 1-day, 2-week and 1-month)	<ul style="list-style-type: none"> <li>● Ranging from one day to continuous wearing for 7 days, depending on individual cases</li> </ul>	<ul style="list-style-type: none"> <li>● Higher oxygen permeability, some people can wear them when sleeping</li> <li>● Each pair of lenses will be discarded or replaced after wearing for one day or up to one month: Lenses that are removed and cleaned daily can be used for up to one month, while those worn continuously for 7 days need to be replaced weekly.</li> <li>● Must be soft contact lenses</li> </ul>

## How to Choose Contact Lenses

Selection of ordinary eyeglasses can be determined according to personal preference. For contact lenses, you need to have your eyes checked by a registered optometrist and then select according to your needs. Some generalized advice is listed below for reference:

1. Hard lenses are non-oxygen permeable, so they are generally not recommended for wearing. Whether to choose rigid gas permeable lenses or soft lenses depends on three major principles: health, comfort and clear vision.
2. Choose daily-wear contact lenses if possible. If you choose extended-wear contact lenses, you should still remove them every day before sleeping. Wearing contact lenses for a long period of time without removal will have adverse impact on your eyes.
3. People who work irregular hours or need to wear contact lenses for 24 hours continuously can consider extended-wear contact lenses. However, they should consult an optometrist first and remove the lenses before sleeping if possible.
4. It is better for soft contact lens users to choose disposable contact lenses, although the cost may be higher.
5. Athletic persons should choose soft contact lenses. As the eyes are in quick motion during sport activity, rigid gas permeable lenses may easily dislodge. In addition, if a sport injury occurs, the trauma caused by soft contact lenses to the eye is comparatively smaller.

## How to Take care of Your Contact Lenses

Contact lenses should be cleansed, rinsed and disinfected every day and none of the three steps can be missed.

1. **Cleaning:** Different cleansers should be used for different types of lenses. For soft contact lenses, put the lens in your palm, shake the cleanser and add one or two drops onto the lens. Rub it gently with your middle finger to remove the dirt. After cleaning one side of the lens, turn it over and clean the other side. It takes 1-2 minutes to clean one lens. For hard contact lenses, apply the cleanser, hold the lens and rub it with your index finger and thumb so that both sides of the lens can be cleansed simultaneously.
2. **Rinsing:** The purpose of rinsing lenses is to thoroughly wash away the cleanser, which is detrimental to the eye. You can use tap water to rinse hard contact lenses or rigid gas permeable lenses. Soft contact lenses must be rinsed with bottled sterile saline, not home-made saline or tap water. For rinsing, put the cleansed lens on your palm, add some tap water or sterile saline onto the lens and rub it with your middle finger to wash away the cleanser.
3. **Disinfecting:** After cleaning, the lenses should be put in a storage solution for disinfection. It is relatively simple to disinfect hard contact lenses or rigid gas permeable lenses as you only need to place them in the storage solution. However, disinfecting soft contact lenses is more complex and below are three methods:—
  - **Heat disinfection:** Put the cleansed and rinsed lenses into the lens case, add some sterile saline into the case before heating it to 80 degrees Celsius for 15 minutes. The disinfection procedure is then complete. The lenses can be used after cooling down. The advantages of this method are that it is effective and no eye allergy or discomfort will be caused as only sterile saline is used in the process. The disadvantage is that the heat may cause damage to the lenses and shorten their life span. Usually, the lenses have to be replaced within a year.
  - **Hydrogen peroxide disinfection:** Put the cleansed and rinsed lenses into hydrogen peroxide solution for disinfection. As hydrogen peroxide is detrimental to the eye, the lenses disinfected by hydrogen peroxide solution have to go through a neutralization process before wearing. There are many ways for neutralization, such as to take the lenses out of the hydrogen peroxide solution and put them into a neutralizing solution. Or you can put a neutralizing pill or a neutralizing metal ring into the hydrogen peroxide solution with the lenses. The whole disinfection and neutralization process can last from tens of minutes to several hours. The advantage is that eye allergy can be avoided if the hydrogen peroxide is completely neutralized. The disadvantage lies in the complexity of the process, which includes disinfection and neutralization, and neither of them can be omitted. What's more, the lenses must never be used before the neutralization process is completed.
  - **Chemical disinfection:** Put the cleansed and rinsed lenses into a disinfection solution where its chemical components can disinfect the lenses. The process generally takes 4 to 6 hours. The advantages are its simplicity and the fact that the lenses can be worn immediately after being taken out of the solution if necessary. The disadvantage is that the chemical components can diffuse into the lenses. While wearing the lenses, the chemicals may cause discomfort to people who are sensitive to them.

### Removing Protein:

Apart from daily cleansing, rinsing and disinfecting, soft contact lenses and rigid gas permeable lenses also require protein removal on a weekly basis. Firstly, dissolve a protein-removing pill in sterile saline before putting the cleansed and rinsed lenses into the protein removing solution for 20 to 40 minutes. The lenses should then be taken out for cleaning and rinsing again before disinfecting. The purpose of using the protein remover is to remove the build up of protein from tears. This is particularly important for those who have chosen heat disinfection, where the protein removing process must be conducted weekly. The reason is that heat can denature the transparent protein previously deposited on the lenses, forming another kind of opaque protein and resulting in a permanent damage to the lenses.

## How to Choose Care Procedure for Contact Lenses

Similar to your choice of contact lenses, you must consult a registered optometrist first before choosing a suitable care procedure for your contact lenses. Some general points are listed below for reference:

1. Caring procedures for hard contact lenses and rigid gas permeable lenses are relatively simple and consistent, not many steps to follow.
2. Soft contact lens users who are sensitive to chemical disinfection solution can switch to hydrogen peroxide or heat disinfection.
3. Heat disinfection may cause damage to the lenses, particularly extended-wear contact lenses.
4. Users who find hydrogen peroxide disinfection complicated and difficult to follow may choose chemical disinfection which is simpler.
5. Hydrogen peroxide disinfection should not be used on coloured soft contact lenses because they will be bleached by the hydrogen peroxide.