

## Shining a Light on Sunglasses

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### **I've already got a pair of sunglasses. Why should I read this?**

Finding sunglasses which look good on your face can be a challenge, so it's tempting to latch onto a single pair until they go missing or become marred with scratches. Considering that sunglass lenses can be tailored to various activities and lighting conditions, you might consider adding a pair or two so that you can protect your vision in varying situations.

### **How do sunglasses protect my eyes?**

Sunglasses play the important role of shielding your eyes from harmful ultraviolet (UV) radiation present in sunlight. Two types of ultraviolet rays – UV-A and UV-B – can cause damage to eyes, leading to medical problems like macular degeneration, cataracts and photokeratitis (a condition similar to a corneal sunburn).

Be careful when selecting sunglasses, as not all will block sufficient levels of UV-A and UV-B. Look for lenses which will block 99% or more of each type. If the manufacturer doesn't clearly state the level of UV protection, it's probably best to select another pair. In fact, dark sunglasses without solid UV-protection can make matters worse by causing your eyes' irises to open wide and let even more damaging ultraviolet rays inside. The American Optometric Association has more information on sunglasses and UV protection ([www.aoa.org/uv-protection.xml](http://www.aoa.org/uv-protection.xml)).





Shatter-resistant lenses protect the eye from physical damage, such as from flying gravel while cycling. The more physical coverage your sunglasses provide, the better your protection from flying debris. A pair with good side coverage is

Glasses which wrap around the side of the face provide added protection from the sun's rays.

desirable; this explains the wraparound look popular in athletic sunglass models.

### **What color of lenses should I buy?**

Lens color can make a large difference in effectiveness depending on lighting conditions and activity type. Sunglasses in shades of gray are great for general purpose use and don't interfere with your ability to accurately perceive colors. Sunglasses in yellow, amber and brown increase contrast but may negatively affect color fidelity. Lighter variations of these warm tones are great for overcast days or in dim lighting conditions. For more information on lens color, take a look at the handy guide at All About Vision [allaboutvision.com/sportsvision/lens-tints-chart.htm](http://allaboutvision.com/sportsvision/lens-tints-chart.htm).

### **What is VLT?**

VLT stands for *visible light transmission*. This refers to the amount of visual light that a lens allows to reach the eye. A pair of empty frames would have a VLT of 100%, while a black eye mask would have a VLT of 0%. For general use, most people find that sunglasses with a VLT of 15%–30% are great. Lenses with VLT ratings of less than 10% are best reserved for conditions of extreme brightness, such as on sunny days with a lot of snow cover.

### **What should I know about prescription sunglasses?**

People often get their prescription sunglasses directly from an optometrist. The selection process is similar to that for regular glasses—you pick out a pair of frames and the optometrist will order lenses of the proper prescription strength. You will be given the opportunity to select a VLT level and tint color. Most optometrists will also offer anti-reflective and anti-scratch coatings when you order. Due to the customized nature of these requests, it's not usually possible to return prescription sunglasses for a refund.

## What materials are used in sunglass lenses?

- **Plastic** lenses (sometimes called CR-39) are extremely lightweight. While they offer good scratch resistance, they may shatter upon impact; this limits their usefulness for sports and other active pursuits.
- **Polycarbonate** lenses are both lightweight and shatter-resistant, making them popular sporting choices. They are prone to scratching unless treated with protective coatings, so it's best to keep them in a case when not in use.
- **Glass** lenses are optically superb and exceptionally scratch-resistant, but they are quite heavy and likely to shatter on impact.

## What special features are available?

- **Interchangeable lenses** allow you to gain the functionality of another pair of sunglasses without the expense. A few of the many companies offering sunglasses with interchangeable lenses are Oakley (*Oakley.com*), Smith Optics (*SmithOptics.com*), Bollé (*Bolle.com*) and Tifosi Optics (*TifosiOptics.com*).
- **Photochromic lenses** vary their darkness based on the amount of light hitting them. While you're indoors, they let a lot of light through, but when you step out into a bright summer's day, they will darken significantly. This can be a useful feature, but sometimes the transition takes place over a few minutes, so the impatient need not apply.
- **Non-slip nose pads** give your sunglasses a fighting chance of staying on your face when your head moves suddenly. Sporting enthusiasts should make this feature a priority.
- An **anti-reflective coating** on the inside of your lenses can reduce glare and eliminate the odd phenomenon of looking through a mirror image of your eyes at the scene beyond.



Sunglasses with Interchangeable lenses, such as these by Smith Optics, offer flexibility and economy to wearers.

- **Glacier Glasses** provide extra side and top coverage to eliminate the excessive glare and UV radiation you receive in exceptionally bright conditions (like on a glacier). This extra coverage usually comes via flexible leather shields which wrap around the sides of the glasses.



Glacier glasses, such as this pair from Julbo ([julbousa.com](http://julbousa.com)), provide extra protection for very bright conditions.

- **Polarized lenses** reduce reflected light from nonmetallic surfaces, which allows them to minimize glare from roads, water, snow and ice. In many cases, the reduction in glare is dramatic, resulting in less eye fatigue. They command a premium price, though – often 15%–30% higher than non-polarized versions of the same model.

Users of electronic devices should be aware that wearers of polarized sunglasses may experience problems in viewing LCD (liquid crystal diode) displays. This can impact mobile phones, GPS units, ATM machines, or instrument panels on cars, boats and planes.

### Where can I get a good deal on sunglasses?

Online outdoor discount retailers frequently have good prices. Give these companies a try if you're looking for name-brands:

- **Campmor:** [Campmor.com](http://Campmor.com)
- **REI Outlet:** [REIoutlet.com](http://REIoutlet.com)
- **Altrec Outlet:** [Outlet.Altrec.com](http://Outlet.Altrec.com)
- **Department of Goods:** [DepartmentOfGoods.com](http://DepartmentOfGoods.com)

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