

Sunglasses Safety FactSheet

HS05-045B (10-08)

Sunglasses aren't just fashion accessories. They are a necessary protection for the eyes. Most consumers know about the danger of sun exposure to the skin, but many are unaware that the sun's rays can damage the eyes. To correctly shield the eyes, the right type of sunglasses must be worn, especially since wearing the wrong type can cause more damage than not wearing glasses at all.

The eyes are susceptible to being burned by sun-rays. The cornea, lens, and retina are all vulnerable to overexposure of ultraviolet (UV) rays. Over time these UV rays—invisible to the human eye—can harm the eye if left unprotected. Workers who are heavily exposed to sunlight should protect their eyes with UV-blocking sunglasses.

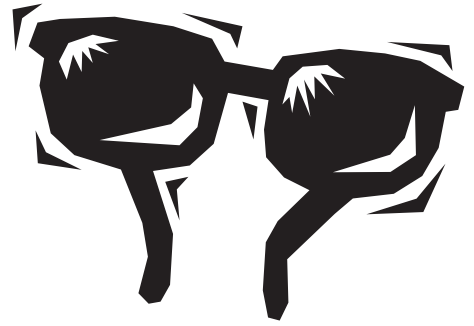
Sunglasses help in two important ways. They filter light and protect the eyes from damaging UV rays. Long-term exposure to UV rays can lead to cataracts, macular degeneration, or skin cancer around the eyelids. Sunglasses should be worn outdoors to protect the eyes.

Choosing Sunglasses to Protect Your Eyes

It is important to look for the clear substance in sunglasses which blocks harmful ultraviolet light. Tinted glasses without UV protection cause more harm than wearing no glasses. Individuals can protect their eyes by simply wearing sunglasses that block out 99 to 100 percent of UV. Such glasses protect the eye from both UV-A—and the more harmful—UV-B rays. Studies show that exposure to ultraviolet light can contribute to a number of ocular complications, including: photokeratitis or “snow blindness”; cataracts; pterygium (an abnormal growth on the eye's surface); macular degeneration; and even cancer. Tinted contact lens do not protect against harmful rays.

Some tips for protecting the eyes in the sun.

- Wear a wide-brimmed hat or cap. This keeps out sunlight from directly overhead, which can slip past sunglasses.



- Never look directly at the sun, even through sunglasses, because doing so can cause permanent damage to the eyes.
- Wear sunglasses and a hat if taking medications that increase the sensitivity of the eyes to light, such as tetracycline (Achromycin V, Sumycin) or allopurinol (Aloprim, Zylprim).
- Know that if you have an eye disease such as macular degeneration, you're at increased risk of UV-related eye damage.

Choose Your Color Wisely

Different lens tints filter different wavelengths of light. Some may enhance or distort colors and affect contrast. Select tint based on need.

- Green—Allows true color perception and good contrast in bright light; reduces eyestrain in bright light.
- Gray—Allows true color perception, but does not enhance contrast; good for cycling or running.
- Brown—Good in hazy sun, enhances contrast; good for high-glare environments.
- Amber—Brightens cloudy, hazy, or foggy skies; excellent for contrast; minimizes eyestrain; distorts color (images look yellow-orange).
- Yellow—Improves contrast and depth perception in low light; good for overcast days.
- Red—Excellent depth perception in low light; contrast objects against blue or green backgrounds.
- Mirrored—Reflects high-intensity light to reduce glare; available in various colors.

Q: Am I at risk for eye problems caused by UV rays?

A: Everyone is at risk for eye problems caused by the sun. Even children are at risk for damaging their eyes. The risk of sun related eye problems is higher for people who:

- spend long hours in the sun;
- have had cataract surgery;
- have certain retina disorders; or
- are on certain medicines, such as tetracycline, sulfa drugs, birth control pills, diuretics, and tranquilizers that increase the eye's sensitivity to light.

Q: What type of sunglasses should I get?

A: When buying sunglasses, look for a label that tells how much UV radiation the lenses of the sunglasses reflect. Experts say that sunglasses should block 99-100 percent of both UV-A and UV-B rays. They need to cover the entire eye area, including eyelids.

Q: What type of glasses should I wear while working?

A: While conventional sunglasses may protect the eyes from glare, they do a poor job of protecting eyes from the industrial hazards of chemical splashes, flying objects, and dust. In fact, conventional sunglasses can present their own hazards in the workplace. It is a fact that the frame and lenses used in safety sunglasses are stronger than the frame and lenses used in conventional sunglasses. When an object strikes the lens of the safety sunglasses it is very unlikely that the lens would dislodge. This is not true of conventional eyewear, especially those types with wire frames. When an object strikes the lens of conventional sunglasses, the lens shatters, showering the wearer's eye with shards of glass or plastic. With a pair of approved safety sunglasses, the lens may break, but it will not shatter back into the eye.

Safety sunglasses can also have shields to reduce the risk of foreign objects reaching the eye from the sides, top, or bottom. Regular sunglasses do not. Because sunglasses have a darkened lens, some people mistakenly believe these glasses will provide the needed protection when welding, brazing, or cutting. A darkened lens will not protect eyes from the infrared (IR) and ultra-violet (UV) radiation. Wearing glasses with darkened lenses that are not made for

industrial applications can actually be more dangerous than wearing no glasses at all. This is because the eye attempts to compensate for less light by opening the pupil wider. In turn, this allows more of the damaging radiation in. For adequate protection from the visible light produced by welding, the lens must be a specific shade. Sunglasses are not welding/cutting goggles.

Q: What should you look for when selecting safety sunglasses?

The following are tips for purchasing safety sunglasses:

- check for Z87.1 designation;
- glasses should be lightweight and adjustable;
- label should indicate 99 or 100 percent UV protection;
- look for sunglasses that are close fitting to prevent UV rays from filtering in;
- look for larger lenses or wrap-around sunglasses to prevent light or other harmful substances from entering the eye;
- don't be misguided by price—higher priced safety sunglasses usually reflect fashion, not UV protection; and
- know that dark-colored sunglasses don't necessarily provide better protection, because the chemical coating applied to the lens responsible for UV protection is clear.

Remember, your sunglasses will not make you look better, see more comfortably or protect your eyes when they are in your purse, pocket or on the dashboard of your car. Protect your eyes whenever you go outside, no matter how briefly.

Remember to practice safety. Don't learn it by accident.

This fact sheet was published with information from the Mayo Clinic, Prevent Blindness America, and the Texas Department of Insurance, Division of Workers' Compensation (TDI-DWC), and is considered factual at the time of development.