






Does color/lens tint affect eye protection?

The amount of UV protection sunglasses provide is unrelated to the color and darkness of the lenses. A light amber-colored lens can provide the same UV protection as a dark gray lens. Your optician can verify that the lenses you choose provide 100 percent UV protection. But for HEV protection, color *does* matter. Most sunglass lenses that block a significant amount of blue light will be bronze, copper or reddish-brown.

LENS TINT GUIDE

COLOR	GUIDE
Yellow or Orange 	Heightens contrast in overcast, hazy, low-light conditions outdoors or for indoor sports. Filters blue light for sharper focus.
Amber, Rose or Red 	Heightens contrast in partly cloudy and sunny conditions, but causes significant color imbalances.
Dark Amber, Copper or Brown 	Blocks high amounts of blue light to heighten contrast and visual acuity. Particularly useful to improve contrast on grass and against blue skies.
Green 	Heightens contrast (mildly) while preserving color balance.
Gray 	Reduces overall brightness while preserving 100 percent normal color recognition.



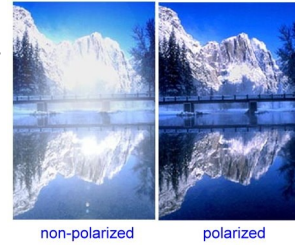
Do kids need to wear sunglasses too?

Make sure your kids' eyes are protected from the sun. The risk of damage to our eyes and skin from solar

UV radiation is cumulative, meaning the danger continues to grow as we spend time under the sun throughout our lifetime.

Does POLARIZED sunglasses give better protection?

Normal sunglasses decrease the intensity of everything by the same amount. Polarized sunglasses can selectively eliminate the reflection of light coming from a highly reflective surface.



They are designed to reduce the glare from surfaces like water, snow, and glass. These kind of lenses can be highly useful for sports, driving, and fishing. It helps the participant in these activities to see more clearly, and so avoiding potential hazards. While they may be somewhat more expensive than conventional sunglasses, some consumers prefer polarized sunglasses because they selectively block out glare, rather than making the whole field of vision dimmer.

POINTS TO PONDER:

- ☀ Generally, UV light is most intense at mid day, (10:00am to 2:00pm), but eye protection is needed whenever you're outside for a prolonged period of time, even if it's gray and overcast.
- ☀ Your eyes can be harmed by UV light sources other than the sun, such as welding lamps and tanning booths, so eye protection is equally essential for such exposure.
- ☀ Similar to skin burn, eye surface burns usually disappear within a couple of days, but may lead to further complications later in life so... PROTECT YOUR EYES!



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We all know the importance of using sunscreen to protect our skin from sun's harmful rays, but what about our eyes?

How well do you protect your eyes?

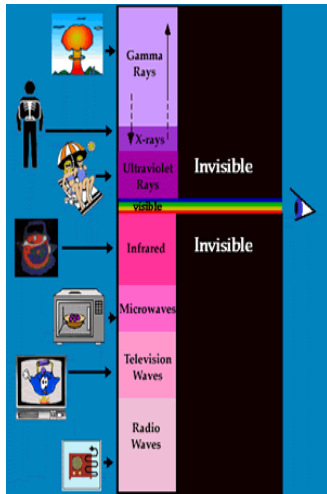
OPHTHALMOHELIOSIS, or sun-related eye conditions represent a significant problem to the eye health. The sun is a natural source of UV energy. Aside from skin, the organ most susceptible to sunlight-induced damage is THE EYE. Ultraviolet rays without protection may cause eye conditions that can lead to vision loss, such as cataracts and age-related macular degeneration. New research suggested that the sun's high-energy visible (HEV) radiation — also called "blue light" — may increase your long-term risk of macular degeneration. People with low blood plasma levels of vitamin C and other antioxidants appear at risk of retinal damage from HEV radiation. The more exposure to bright light, the greater the chances of developing these serious eye problems.



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What is UV (Ultra Violet) ?

Ultraviolet, also known as UV, is an invisible part of the electromagnetic spectrum, with a wavelength shorter than a visible light. The name means "beyond violet", (from the Latin word *ultra* meaning "beyond"). It is named as such because its spectrum consists of electromagnetic waves with frequencies higher than those that humans can identify as color Violet.



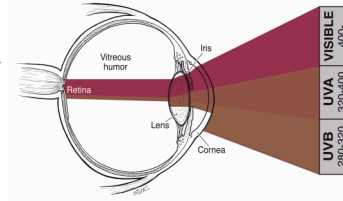
The **three categories** of invisible high-energy UV rays are:

UVC rays. These are the highest-energy UV rays and could potentially be the most harmful to your eyes and skin. Fortunately, the atmosphere's ozone layer blocks virtually all UVC rays.

UVB rays. These have slightly longer wavelengths (280–315 nm) and lower energy than UVC rays. These rays are filtered partially by the ozone layer, but some still reach the earth's surface.

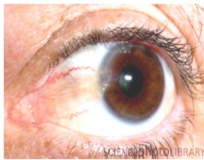
UVA rays. These are closer to visible light rays and have lower energy than UVB and UVC rays. UVA rays can pass through the cornea and reach the lens and retina inside the eye.

HEV Radiation. As the name suggests, high-energy visible (HEV) radiation, or blue light, is visible. Although HEV rays have longer wavelengths (400–500 nm) and lower energy than UV rays, they penetrate deeply into the eye and can cause retinal damage.

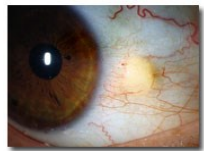


What are the harmful effects of UV?

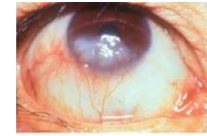
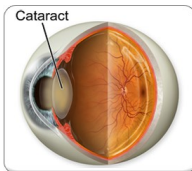
PTERYGIUM. A triangular growth on the clear, thin tissue (conjunctiva) that lays over the white part of the eye (sclera). The growth can encroach over the cornea which can produce sub-optimal vision.



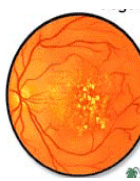
PINGUECULA. A yellowish, raised area seen on the conjunctiva. This growth does not affect vision, but may cause irritation if it becomes elevated. In rare cases, the pinguecula may gradually extend over the cornea, forming a pterygium.



CATARACT. A clouding that develops in the crystalline lens of the eye or in its envelope, varying in degree from slight to complete opacity and obstructing the passage of light. It typically progresses slowly to cause vision loss and are potentially blinding if untreated.



PHOTOKERATITIS. A burn of the cornea (the clear front surface of the eye) by UV B rays. Also called **RADIATION KERATITIS** or **SNOW-BLINDNESS**. Symptoms include tearing, pain, redness, swollen eyelids, headache, a gritty feeling in the eyes, halos around lights, hazy vision, and temporary loss of vision. These symptoms may not appear until 6-12 hours after the UVB exposure. It is similar to "Arc eyes" (corneal burns resulting from exposure to the bright electric arc created when welding metals).



MACULAR DEGENERATION. A loss of vision in the center of the visual field (the macula in the retina) because of damage to the retina. European study published in October 2008's issue of *Archives of Ophthalmology* states HEV radiation — especially when combined with low blood plasma levels of vitamin C and other antioxidants, is associated with the development of this condition.

How can I protect my eyes?

Wearing good quality sunglasses when you are outdoors is the best way to protect your eyes from the sun's harmful UV and HEV rays. They don't have to be expensive to offer the right kind of UV protection. Look for sunglasses that block 100 percent of UV rays and that also absorb most HEV rays. To protect as much of the delicate skin around your eyes as possible, try at least one pair of sunglasses with large lenses or a close-fitting wraparound style.



In addition to sunglasses, wearing a wide-brimmed hat on sunny days can reduce your eyes' exposure to UV and HEV rays by up to 50 percent.