Being out in the light can leave you in the dark - UV radiation and you

The sun emits different types of electromagnetic radiation, most of which are visible (HEV) light, UV rays, and infrared rays. While UV rays make up only a very small portion of the sun's rays, they are the main cause of the sun's damaging effects on the eyes. UV rays are an overload of energy, which travel through an empty space, creating an imbalance in the chemical structure of the body's molecules, causing cell damage and deformities.

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Eye problems

As UV rays travel with sunlight, the rays can pierce through the thin layer of skin on the eyelids when the eyes are closed or partially closed, making it possible for the rays to reach the eye. The transparent lens and cornea help to protect the eyes by filtering the UV rays, but if direct light continuously reaches the eyes over long periods, this can lead to serious eye problems including:

- **Cataracts:** The most common form of treatable blindness worldwide, cataracts are the cause of clouding that makes it difficult for the eye to see.
- **Eyelid cancers:** The US Skin Cancer Foundation recently reported that eyelid cancers make up 5-10% of all skin cancers. The cancer usually occurs in the lower part of the eyelid, which is most exposed to the sun. It carries the risk of spreading to the eye itself and even affecting surrounding muscles that can later deform parts of the face.
- **Intraocular melanoma:** This is the most common form of eye cancer that can either result in dark specs on the iris, hazy vision, or a change in the pupil's shape. The cancer may only be in the eye or it may spread (metastasize) to another location in the body, most commonly the liver. Persons who have fair skin and blue eyes are most affected.
- **Macular degeneration:** Also known as age-relate macular degeneration (AMD), this condition is one of the leading causes of vision loss. It is the result of long-term damage to a small spot near the centre of the retina, the part of the eye needed for central vision. AMD is one of the results of the sun's high-energy visible (HEV) radiation, also known as blue light. Unlike UV radiation, HEV rays are visible and people with low levels of vitamin C and other antioxidants are more likely to suffer from retinal damage and AMD from HEV radiation.
- **Harmful growths on the surface of the eye:** Apterygial, benign growths on the conjunctiva (the protective membrane that spans across the outside of the eye), usually occur at a later stage in life. These growths can negatively affect sight and may need to be removed surgically.
- **Keratitis (sunburn of the cornea):** This is the result of over exposure to UV rays, either from the sun or tanning equipment. In this case, it is recommended that polarised lenses and protective eyewear are worn when sun bathing and even during a tanning session at the salon.
- **Photo keratitis:** When the eyes are exposed to high, short term dosages of UV rays, this can cause a painful inflammation of the cornea, also known as 'snow blindness' and can cause instant vision loss for 24 to 48 hours.

Are polarised lenses your best weapon against harmful radiation? According to Andre Horn, assistant MD at Mellins i-Style, tinted sunglasses may help to darken glare from the sun. Sharp light however can still obscure your vision and the lenses do not necessarily protect the eyes from harmful radiation.

"The best solution for protecting your eyes against damaging rays are polarised lenses that can block 100% UV radiation and absorb other detrimental light." Polarisation occurs when sunlight 'ripples' into various directions and hits a surface to cause a flux of light that reflects into one direction. When reflected from surfaces such as water, sea sand, the windshields of oncoming cars or wet pavements and roads, the polarised light can cause a blinding effect once it reaches your eyes. Polarised lenses eliminate much of these types of glare to improve contrast, make colours more brilliant and ensure outstanding vision, even under extreme light conditions. "These lenses also protect you from eye fatigue because your eyes no longer have to adjust to constantly changing light conditions."

To protect your eyes from the sun's harmful rays when outdoors, make sure that you are equipped with good quality polarised sunglasses that can block 100% UV rays and absorb most HEV rays. It is also a good idea to keep your sunglasses on in the shade, as although these cooler areas may reduce the effect of the damaging rays, it does not provide complete protection.

For more information, go to www.mellins.co.za.