

# Are You UV Protected?



## Can eye diseases be caused by or affected by sunlight?

The answer is YES. UV can play a large role in the development of various ocular disorders including cataract, pterygium, skin cancer around the eye, photokeratitis\keratitis, corneal degenerative changes, and macular degeneration.

Cataracts are a major cause of visual impairment and blindness worldwide. Cataracts are a cloudiness of the lens which occurs over a period of many years. Research indicates that UV radiation is a cause factor for cataract development.

Macular degeneration is the major cause of reduced vision in the United States among people over age 55. Exposure to UV and intense violet/blue visible radiation is damaging to retinal/macular tissue in laboratory experiments, causing speculation that chronic UV exposure may contribute to aging processes in the retina.

Pterygium is a growth of tissue on the white of the eye that may extend onto the clear cornea. It has the potential to block vision. Pterygia are seen more commonly in people who work outdoors in the sun and wind, and its prevalence is related to the amount of UV exposure. It can be removed surgically, but often recurs, and can cause cosmetic concerns and visual loss if untreated.

Cancer of the skin, including the eyelids and facial skin is a well known consequence of excessive UV exposure.



## Who is at risk?

Everyone! No one is immune to sunlight-related eye disorders. Every person in every ethnic group, of any age is susceptible to ocular damage from UV radiation that can lead to impaired vision.



## What factors increase the risk?

Any factor that increases the eyes sunlight exposure will increase the risk for ocular damage from UV radiation. Individuals whose work or recreation involves lengthy exposure to sunlight are at greatest risk.

Since UV radiation is reflected off surfaces such as snow, water and white sand, the risk is particularly high on the beach, while boating or at the ski slopes. The greatest exposure occurs during the mid-day hours, from 10 a.m. to 3 p.m. and during summer months

Since the human lens absorbs UV radiation, individuals who have had cataract surgery are at increased risk of retinal injury from sunlight unless a UV absorbing intraocular lens was inserted at the time of surgery.



### How to protect your eyes from UV radiation?

UV radiation reaches the eye not only from the sky above but also from reflections from the ground. Protecting yourself from sun light can be done by using both a brimmed hat or cap and UV absorbing eyewear. UV sunglasses provide the greatest UV protection, particularly when they have a wraparound design.

Ideally, all types of eyewear, including prescription spectacles, contact lenses and intraocular lens implants, should absorb the entire UV spectrum (UVB and UVA). UV filters do not interfere with vision. Polarization or photosensitive darkening are additional sunglass features that are useful for certain visual situations, but do not, by themselves, provide UV protection.



### So what type of suntan lotion for my eyes should I buy?

Look for sunglasses that protect you from 99% to 100% of both UVA and UVB light. This includes those labeled as "UV 400," which refers to protection from 400 nanometers (all of UVA and UVB). You may want to consider [wraparound sunglasses](#) to prevent harmful UV rays from entering around the frame and protect more of the skin around your eyes. The degree of darkness has no effect on UV rays. Tint and color are your choice of how you want to see the world. Gray and brown are popular because they distort colors the least. Other tints may be chosen for their color-enhancing properties; for example, yellow lenses are popular with people who suffer from macular degeneration or cataracts because they work well in low light, reduce haze and increase contrast for a sharper image. Polarized lenses are best to reduce glare from the water.

Stay Protected from UV!

80% of harmful UV exposure happens before the age of 18

The harmful rays emitted from the sun are called Ultraviolet radiation (UV) rays. There are three types of UV rays: UVA, UVB, and UVC.

- ✓ UVA rays: *long-wave solar rays of 320 - 400 nanometers*  
These are present year-round, are relatively constant in their intensity, and penetrate the skin more deeply than UV-B. They contribute to premature aging and/or wrinkling, sunburn and skin cancer and, since they are present all year long, there is a need for year-round sun protection.
- ✓ UVB rays: *short-wave solar rays of 290 - 320 nanometers*  
These are the "burning rays", you know that they have affected you when your skin starts to turn pink or tan. They are at their strongest intensity between the hours of 10 a.m. and 3 p.m. and more damaging during the summer than in winter. These rays are the most common cause of eye problems.
- ✓ UVC rays: *very-short solar rays of 200 - 290 nanometers*  
UV-C are in the shortest part of the UV spectrum and are the most powerful and harmful rays. Fortunately, they are filtered out by the ozone layer and don't reach the Earth. This is why it is so important to maintain and protect our ozone layer.