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Ultraviolet Light and Your Eyes

“Summertime, and the livin’ is easy” goes the song and while that applies well to extended daylight hours, BBQ’s, and swimming, it doesn’t always apply well to our eyes. Summertime is also a time of peak ultraviolet (UV) levels, combined with increased exposure with our outdoor summertime activities.

Ultraviolet is invisible light that we receive, whether we know it or not. It is related to visible light, but it is not the same thing - it is a higher energy light, which is divided into subgroups UV-A and UV-B. UV-A rays produce suntans, but also cause wrinkles with longtime exposure. UV-B causes sunburns and is possibly more damaging to the eyes.

There is controversy about just how relevant each subgroup is to eye damage and what sort of eye damage can result. For our purposes, UV protection regardless of subgroup is important. Eye damage from UV exposure includes yellow bumps on the white of the eye; tumors on the eyelids; “snow blindness” or irritation of the sensitive front eye surface; cataracts (clouding of the lens inside the eye); and possibly retinal damage.

Ultraviolet light occurs year round, but is at a peak in the summer (especially between the hours of 10am to 2pm) and on clear, bright days. Heavy overcast reduces UV, but light haze or thin clouds will not. Higher elevations and/or reflective surfaces - such as snow, sand or water - will greatly increase the amount of delivered UV.

Who is at risk?

Those who spend time outdoors (and, while we often overlook the need for UV protection for kids, we really shouldn’t!) Photosensitizing medications, such as tetracycline, doxycycline, psoralens, allopurinol, and phenothiazine may intensify the effect of UV on eye tissues as well as skin. There are other photosensitizing meds and you should ask your pharmacist if there are concerns. Generally, outdoors is where significant UV exposure exists and ordinary indoor lighting is not a big consideration (except for tanning beds).

How do we protect our eyes from UV?

Besides avoidance – staying indoors especially at peak UV times, and wearing broad brimmed hats – we can protect against UV exposure with wraparound sunglasses or properly treated ordinary glasses. It is not necessary for a lens to be dark in order to block UV – indeed, clear glasses with appropriate treatments can be very effective at UV blockage. Ordinary clear glasses with plastic lenses are passable absorbers for lower amounts of UV. But in more challenging environments, either the lenses need to be treated with a UV blocking chemical or else manufactured with a material which is inherently UV blocking. Polycarbonate is such a material. Alternatively, lenses made with the Transitions ® darkening tint are very good UV blockers. Make sure that the glasses fit reasonably close to your eyes to lessen the problem of light sneaking in from the side.

Many soft contact lenses are made with materials which are UV blocking. The FDA has established standards for UV blocking in contact lenses. They are known as FDA Class I and FDA Class II. The class I blocker is for challenging environments such as mountains or beaches. Class II is for general purposes.

So, enjoy your summer! But keep in mind that invisible UV threat, and remember that UV damage is cumulative.