



Ultraviolet Rays And Eye Damage

By Dr. Corinne M. Knight

What is Ultraviolet Radiation? The sun continuously radiates energy across what is called the electromagnetic spectrum - from short wavelength gamma rays to long wavelength radio waves.

Thankfully, the earth's atmosphere stops most of this solar radiation from reaching the earth. UVR is one type of radiant energy which penetrates the atmosphere. It is of great concern not long for the damage it does to the skin (sunburn, skin cancer), but also for the damage it causes to the eyes.

Nowadays, the thinning of the ozone layer allows more UVR through to the earth's surface and, consequently, the potential risk for skin and eye damage is increasing. To make matters worse, UVR exposure is cumulative. It's not just your exposure to the sun today or tomorrow that counts, but also how much exposure you had as a child. It is estimated that 50% or more of one's lifetime sun exposure happens before the age of 18.

What can UVR do to the eyes? There are at least five disorders of the eye which may be caused or accelerated by too much exposure to the sun.

1. Photokeratitis:

This occurs when the UVR burns the cornea (the clear covering over the coloured part of the eye). Normally the eyelids and brows protect the eye from this uncomfortable and potentially debilitating condition. However, when UVR is reflected from below - from snow, white sand, water - the cornea is damaged. (The Inuit weren't making a fashion statement when they wore those bone glasses with only slits to look through!)

2. Pterygium / Pinguecula:

These fattening growths which appear on the outside surface of the eye are surprisingly common.

3. Cataracts:

This clouding of the lens inside the eye eventually happens to everyone. Cumulative exposure to UVR is one of the factors which contribute to this disorder which blurs vision.

4. Macular Degeneration:

This loss of function in the central part of the retina (back layer of the eye) causes blurry vision and may progress to the point of causing a significant handicap for which there is little treatment.

Evidence indicates that cumulative exposure to UVR and light at the "blue end" of the visible spectrum may be one factor implicated in this degenerative process.

5. Cancer:

Cancer of tissues around the eye.

Risk factors for ocular UVR damage:

Basically, the more time you spend in the outside (even cloudy days count) the greater the risk for UVR damage. This risk is increased not just in the summer, but also if you have:



- light coloured eyes;
- you are at higher elevations;
- closer to the equator;
- under a hole in the ozone layer;
- you are on the snow or water;
- at the beach;
- it's midday;
- you are on certain photosensitizing medications such as tetracycline;
- you have a family history of macular degeneration.

What to do about UVR exposure in the eye: The solution is quite simple - protect your eyes and eyes of your family. This is best achieved by wearing the appropriate sunglasses and a wide brim hat. If in doubt about the appropriateness of your sunglasses, just ask your eye doctor.