

INFORMATION BULLETIN



CONSTRUCTION SAFETY ASSOCIATION OF ONTARIO

IB015
July 1993

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Ultraviolet Radiation

INTRODUCTION

Ultraviolet (UV) radiation is beaming down on us from the sun every day. There is growing concern about the depletion of the ozone layer in the earth's atmosphere. This may result in future increased ultraviolet radiation exposures.

UV radiation is invisible to the eye but its effects can be seen and felt on the skin after overexposure. Overexposure to UV radiation can lead to a painful reddening of the skin commonly known as sunburn. The skin may tan by producing melanin. This dark pigment blocks some damaging rays. However, protection is far from complete and skin damage still results. A dark suntan has long been associated with health and good looks but it really indicates damaged skin.

HEALTH EFFECTS

Chronic or long-term exposure to UV radiation has been found to be related to a number of health effects, including skin cancer, premature wrinkling of the skin, and eye problems.

Blistering sunburns suffered during childhood and adolescence are believed to be the trigger for a dangerous form of skin cancer called melanoma. For people with three or more blistering sunburns before the age of 20, the risk of developing melanoma is four to five times that of someone who has had no blistering sunburns. People who worked

outdoors for three or more years as teenagers have triple the average risk of melanoma. Heredity is also a factor, since 10% of all cases run in families. People with fair skin, blond or red hair, or marked freckling of the upper back are more likely to develop melanoma.

Skin aging

UV radiation exposure can cause sunburn, extra production of melanin, thickening of the skin's outer layer, and damage to dermal connective tissue. It is also the primary trigger for non-melanoma skin cancers.

Some UV radiation penetrates more deeply to damage the underlying structures of the skin and accelerate skin aging.

Every exposure to ultraviolet rays is stored in our skin. Unlike tans, which fade in the winter, the damage done by ultraviolet exposure is cumulative.

Eye damage

UV radiation can damage the eye. A recent study of Chesapeake Bay fishermen who spend large amounts of time on the water found that men who did not protect their eyes from the sun had more than three times the rate of the most common forms of cataracts compared to fishermen who regularly took precautions.



Environment Canada UV Index

UV CATEGORIES	UV INDEX RANGE	AVERAGE TIME TO SUNBURN
Extreme	9.0 or higher	less than 15 minutes
High	7.0 to 8.9	around 20 minutes
Moderate	4.0 to 6.9	around 30 minutes
Low	less than 4.0	more than 1 hour

UV INDEX

Environment Canada is now making available the ultraviolet index (see above). You may hear this quoted on radio and television. The index measures the intensity of ultraviolet radiation under sunny and light cloud cover conditions. The index is given as a number under several UV categories.

In rainy conditions or heavy/thick overcast cloud conditions, the UV index will generally be less than 4.0, in the low category. Hot hazy days in summer may result in very intense UV because low ozone levels are associated with this type of weather. White surfaces such as sand, concrete, and snow can reflect large amounts of UV upward, resulting in extreme UV exposure.

PROTECT YOURSELF

To protect yourself from ultraviolet light, cover up exposed skin, wear your hard hat, wear tinted safety glasses with UV protection, use

sunscreen, and minimize direct sun exposure during late morning and early afternoon when the sun's rays are most intense.

Everyone planning to spend any length of time in the sun should wear sunscreen. Used correctly, sun screens will reduce the intensity of skin damage by blocking out ultraviolet rays.

Sun screens should be labelled according to their sun protection factor (SPF). This indicates the amount of protection offered against the sun's harmful ultraviolet rays. The higher the SPF number the greater the protection. If you select an SPF of 15, this means you can stay out in the sun 15 times longer than if you are wearing no sunscreen and still get the same amount of redness.

Broad spectrum screens with an SPF of 15 or greater should be used. Apply sunscreen 15 to 30 minutes before you venture out and re-apply generously every two to four hours.

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