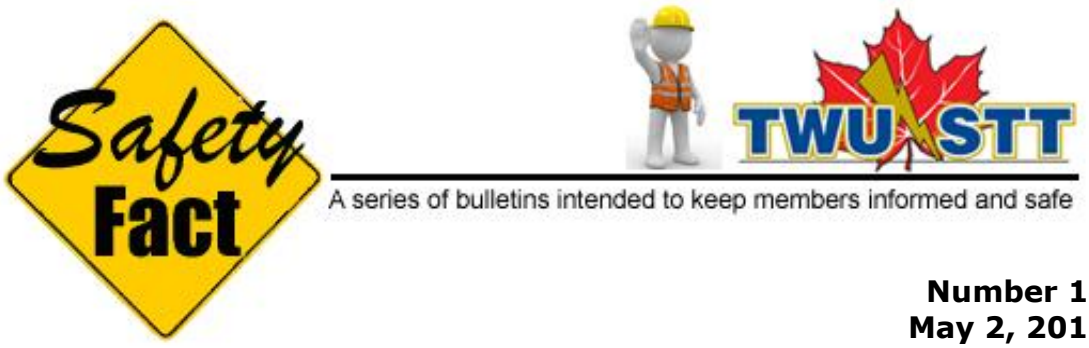

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Subject: Fun (and work) in the Sun this Summer

With summer around the corner, TWU members will be working, playing and just generally out enjoying the sun more often. The following is some important information from the Canadian Centre for Occupational Health and Safety about UV and the hazards associated with over exposure to radiation.

What is ultraviolet radiation?

Sunlight is the greatest source of UV radiation. Man-made ultraviolet sources include several types of UV lamps, arc welding, and mercury vapour lamps.

UV radiation is widely used in industrial processes and in medical and dental practices for a variety of purposes, such as killing bacteria, creating fluorescent effects, curing inks and resins, phototherapy and suntanning. Different UV wavelengths are intensities are used for different purposes.

Health effects of exposure to UV radiation

Some UV exposure is essential for good health. It stimulates vitamin D production in the body. In medical practice, UV lamps are used for treating psoriasis (a condition causing itchy, scaly red patches on the skin) and for treating jaundice in new born babies.

Excessive exposure to ultraviolet radiation is associated with different types of skin cancer, sunburn, accelerated skin aging, as well as cataracts and other eye diseases. The severity of the effect depends on the wavelength, intensity, and duration of exposure.

Effect on the skin

The shortwave UV radiation (UV-C) poses the maximum risk. The sun emits UV-C but it is absorbed in the ozone layer of the atmosphere before reaching the earth. Therefore, UV-C from the sun does not affect people. Some man-made UV sources also emit UV-C. However, the regulations concerning such sources restrict the UV-C intensity to a minimal level and may have requirements to install special guards or shields and interlocks to prevent exposure to the UV.

The medium wave UV (UV-B) causes skin burns, erythema (reddening of the skin) and darkening of the skin. Prolonged exposures increase the risk of skin cancer.

Longwave UV radiation (UV-A) accounts for up to 95% of the UV radiation that reaches the earth’s surface. Although UV-A is less intense than UV-B, it is more

prevalent and can penetrate deeper into the skin layers, affecting the connective tissue and blood vessels, which results in premature aging.

Effect on the eyes

The eyes are particularly sensitive to UV radiation. Even a short exposure of a few seconds can result in a painful, but temporary condition known as photokeratitis and conjunctivitis. Photokeratitis is a painful condition caused by the inflammation of the cornea of the eye. The eye waters and vision is blurred. Conjunctivitis is the inflammation of the conjunctiva (the membrane that covers the inside of the eyelids and the sclera, the white part of the eyeball) which becomes swollen and produces a watery discharge. It causes discomfort rather than pain and does not usually affect vision.

Examples of eye disorders resulting from UV exposure include "flash burn", "ground-glass eye ball", "welder's flash" and "snow blindness" – depending on the source of the UV light causing the injury. The symptoms are pain, discomfort similar to the feeling of sand in the eye and an aversion to bright light.

What can you do to protect yourself from UV radiation from the sun?

Ways to limit exposure the sun's UV radiation include avoiding working in the sun wearing protective clothing and hats, and applying sunscreens.

Protective clothing can include long pants, hats, and long-sleeved shirts. Some newer, sun-resistant fabrics are more efficient in blocking UV radiation.

Physical sunscreens (e.g., zinc oxide and titanium dioxide) are opaque products that reflect or block both UVA and UVB. Chemical sunscreens are non-opaque (i.e., you can see through them on your skin). They absorb UVA, UVB, or both. Wide spectrum sunscreens are intended to block both types of UV radiation.

Sunscreens are rated according to Sun Protection Factor (SPF), an index of protection against skin erythema (reddening of the skin). SPF ranges from 1-50 or more. The higher the SPF is, the more protection it offers from UVB radiation.

- SPF 15 sunscreen may absorb more than 92 percent of UVB radiation
- SPF 30 sunscreen may absorb 96.7 percent
- SPF 40 sunscreen may absorb 97.5 percent of UVB radiation

The following practices are recommended to minimize UV exposure when working outdoors:

- Avoid midday sun (10:00 a.m. – 3:00 p.m.).
- Wear clothing that is tightly woven to block sunlight.
- Wear a broad-brimmed hat that will shade your face, neck, and ears.
- Apply waterproof sunscreen with an SPF of 15 or higher to all sun exposed skin.
- Use UV protection sunglasses.

Keeping these simple precautions in mind will enable you and your family to safely enjoy the warmth and fun of summer weather.