

7 WORKING IN OUTSIDE ENVIRONMENTS

Working in hot environments can be uncomfortable and also may adversely affect our health. How hot we feel depends on temperature, humidity, wind speed, and type of work.

7.1 Humidex

In the weather forecast, the degree of environmental heat is often given in terms of Humidex which is determined by taking into account the temperature and humidity of the ambient air.

<u>Humidex Range</u>	<u>Degree of Comfort</u>
2 - 29	Comfortable
30 - 39	Degrees of discomfort vary
40 - 45	Uncomfortable
46 and Over	Many types of labour must be restricted

7.1.1 Potential Health Problems

Heat Stroke: The most serious heat illness is heat stroke. Signs of heat stroke include dry, hot skin due to failure of sweating and complete or partial loss of consciousness. Heat stroke can be fatal and requires prompt first aid and medical attention.

Other Health Disorders

Less severe health problems include:

- **Heat Edema** - swelling of the ankles.
- **Heat Rashes** - tiny red spots on the skin that causes a prickling sensation during heat exposures.
- **Heat Cramps** - sharp pains in muscles resulting from the failure to replace salt loss from sweat.
- **Heat Exhaustion** - weakness, dizziness, visual disturbances, intense thirst, nausea, headache, vomiting, diarrhea, muscle cramps, breathlessness, palpitations, and tingling and numbness of the hands and feet.
- **Heat Syncope (Fainting)** - caused by loss of body fluids through sweating and by lowered blood pressure, due to pooling of blood in the legs while

working in a standing position.

If you notice any of the above symptoms, go to a cool place.

7.1.2 Preventing Heat Related Illnesses

Acclimatization - people who work regularly in hot environments develop a certain degree of tolerance (acclimatization) for heat. Most of the acclimatization occurs in the first three or four days, and complete acclimatization may require seven to eleven days.

Clothing - loose cotton clothing provides adequate protection in hot and humid conditions.

Work/Rest Schedule - a schedule of work-rest periods is generally recommended for working in hot conditions.

Drinking Water - you should drink plenty of cool 10 - 15 degrees C water or fruit drink every fifteen to twenty minutes even though you may not feel thirsty. Thirst is not an adequate indicator of the body's need for water.

7.2 Working in Cold Environments

Working in cold weather can be dangerous to the unprepared, and to people without adequate protective clothing. Two types of cold hazards are common: hypothermia and frostbite.

Hypothermia can be fatal. It results from the cooling of the deep inner body or "core" to a temperature below 34.5 degrees C due to prolonged exposure to cold. Persons exhausted during physical work are more prone to hypothermia. The victim can become listless, confused and make little or no effort to keep warm.

The hypothermia victim should be immediately warmed, either by being moved to a warm room or by the use of blankets. In severe cases of hypothermia, immediate medical care is necessary.

Frostbite is freezing of the body tissues as a result of extremely cold temperatures or contact with extremely cold metallic objects such as an automobile or fence.

Caution: Consumption of alcohol does not increase tolerance for cold. Instead, it increases the risk of hypothermia.

7.2.1 Effect of Wind

At any temperature, one feels colder when it is windy. The combined effect of cold and wind speed is expressed as "wind chill" or "equivalent chill temperature". For exposed skin, continuous exposure should not be allowed when ECT is -32 degrees

C or lower.

7.2.2 Protective Clothing

Multiple layers of lightweight loose fitting clothing provide better protection against the cold compared to single thin layer clothing. Eye protection must be separated from respiratory channels (nose and mouth) to prevent exhaled moisture from fogging and frosting eye shields. For work in wet conditions, the outer layer of clothing should be waterproof. Clothing should be kept clean. Dirt destroys its insulating ability. Clothing must be dry.

Gloves should be used below 4 degrees C for light work and -7 degrees C for moderate work. For work below -17.5 degrees C, mittens should be used. Felt-lined, rubber bottomed, leather-topped boots with removable felt insoles are best suited for heavy work in cold.

7.3 Ultraviolet Rays (UV)

In summer months, outdoor work may cause damage to the skin and eyes due to ultraviolet radiation exposure. UV rays are an invisible part of sunlight. Besides direct exposure to sunlight, harmful UV ray exposures are possible due to reflections from water, sand and concrete.

7.3.1 Effect on Skin

UV rays cause darkening of the skin, skin burns and erythema (reddening of the skin). Prolonged exposure increases the risk of skin cancer.

Certain substances increase the risk of damage due to UV radiation. These are known as photosensitizing agents. Such agents include certain medications, tranquilizers, cosmetics, plants, weeds, and coal-tar creosote.

7.3.2 Effect on the Eyes

The eyes are particularly sensitive to UV radiation. A short exposure can result in painful, but temporary conditions such as watering, blurred vision and pain.

7.3.3 UV Index

The Environment Canada Weather Service rates the UV intensity as UV index on a scale of 0 to 10.

UV Index Table

<u>Index</u>	<u>Category</u>	<u>Implications</u>
9 – 10	Extreme	Sunburns and skin damage can occur in less than 15 minutes. Minimize exposure.
7 – 9	High	Sunburns and skin damage can occur quickly. Minimize sun exposure if possible.
4 – 7	Moderate	Take precautions to limit exposure to the sun.
L4	Low	Minimal precautions necessary for normal activity.

- Avoid midday sun.
- Wear clothing that is tightly woven to block sunlight.
- Wear broad-brimmed hat that will shade your face, neck, and ears.
- Apply waterproof sunscreen with a sun protection factor of 15 or higher to all exposed skin.
- Wear UV filtering sunglasses

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