

The sun is a ubiquitous hazard for all in construction and building trades. It is the primary exposure source of ultraviolet (UV) radiation. CAREX Canada estimates that almost 1.5 million Canadians are exposed to solar UV radiation from outdoor work.

UV radiation is a form of invisible electromagnetic radiation found naturally in sunlight. Exposure to UV radiation can differ based on various factors. These include seasonality, geography, time of the day, weather, time spent in the sun outdoors, and the area of skin exposed.

Health effects

- Skin Cancer
- Heat Stress/Stroke
- Eye Damage (senile cataracts)
- Photoaging

Skin cancer is the most prevalent form of cancer in Canada. The three types of skin cancer associated with sunlight exposure are basal cell cancer, squamous cell cancer, malignant melanoma.



Exposure Sources and Construction Trades

According to CAREX Canada, the largest industry group exposed to solar UV radiation are construction trades with approximately 343,000 construction workers exposed. The highest risk is for workers who spend most of their work hours outdoors. The following are some examples of trades and associated work activities that require prolonged time spent outdoors under direct sunlight.



Trades Exposed in Construction	Exposure Sources and Activities
Operating engineers, and heavy equipment mechanics and operators	<ul style="list-style-type: none"> • Operating large motor vehicles and heavy equipment • Sitting in an enclosed operator's cabin
Carpenters, roofers, and related occupations	<ul style="list-style-type: none"> • Installing walls and roofs of buildings • Repairing or replacing shingles and other roofing tiles • Repairing and renovating wooden structures
General and specialized construction labourers	<ul style="list-style-type: none"> • Operating power tools • Excavating with picks and shovels • Cleaning the side of roads with shovels and brooms • Loading/unloading, mixing, or spreading material

Aside from sun exposure, there are other sources of UV radiation in construction work, such as arc-welding, UV curing lamps and lasers.

Impact on Ontario Construction

The Burden of Occupational Cancer in Ontario project estimates that almost 450,000 workers are exposed to solar UV radiation, which causes an estimated 1,400 cases of non-melanoma skin cancer each year [r]. According to the Future Burden of Cancer in Construction Project, Ontario construction workers exposed to occupational solar UV radiation will experience an estimated 27,650 non-melanoma skin cancer cases over the period of 2030-2060 [r].

As part of this project, the economic burden of developing basal cell carcinoma and squamous cell carcinoma due to occupational solar UV exposure was studied by the Institute for Work and Health. They predicted that newly diagnosed cases of squamous cell carcinoma cases among construction workers due to solar UV radiation would cause an estimated 34.2 million yearly economic burden [r].

Prevention

To protect workers and reduce UV radiation exposure, sun safety programs need to be established and tailored to specific outdoor work. Sun Safety at Work Canada (SSAWC) suggests a six-step process to develop a comprehensive approach to sun safety during outdoor work.

