Outdoor Worker Health: Managing Sun, Insects, and Heat Risks



Outdoor work exposes employees to a wide range of environmental hazards that extend far beyond slips, trips, and equipment-related incidents. Throughout the Canadian spring, summer, and early fall, construction workers, agricultural employees, utility crews, landscapers, road maintenance teams, forestry workers, and other outdoor personnel face prolonged exposure to the sun, biting insects, and high temperatures. While each hazard presents its own risks, they often occur simultaneously, increasing the physical and mental demands placed on workers.

For worksite managers and OHS professionals, protecting outdoor workers requires more than simply supplying personal protective equipment (PPE). It involves proactive planning, worker education, hazard assessments, and a workplace culture that encourages employees to recognize early warning signs and report health concerns before they become medical emergencies.

Understanding the Risks of Sun Exposure

Sun exposure is one of the most common and often underestimated occupational hazards for outdoor workers. Even on cloudy days, ultraviolet (UV) radiation can penetrate cloud

cover and damage the skin and eyes. Because UV exposure accumulates over time, workers who spend years outdoors face significantly higher risks than the general population.

Short-term sun exposure can result in painful sunburns that reduce concentration, productivity, and comfort. More importantly, repeated UV exposure increases the likelihood of premature skin aging, cataracts, eye damage, and skin cancers, including melanoma, the deadliest form of skin cancer.

Certain conditions can increase UV exposure even further. Reflection from concrete, water, metal surfaces, and light-coloured roofing materials can intensify radiation, while higher elevations expose workers to stronger UV levels. Workers may also underestimate their risk during cooler temperatures because the absence of extreme heat does not reduce UV intensity.

Employers can reduce sun-related risks by encouraging the use of wide-brim hard hat attachments or neck shades where appropriate, UV-rated safety glasses, lightweight long-sleeved clothing, and broad-spectrum sunscreen with an SPF of at least 30. Sunscreen should be readily available at worksites, and workers should be reminded to reapply it throughout the day, particularly after sweating heavily.

Whenever operationally possible, supervisors should schedule the most sun-intensive work during the early morning or later afternoon when UV levels are generally lower and ensure shaded rest areas are available during breaks.

Insect Hazards Are More Than a Nuisance

Mosquitoes, ticks, wasps, bees, hornets, black flies, and deer flies are common hazards across many Canadian worksites. While insect bites are often viewed as minor irritations, they can

have significant health consequences.

Ticks present one of the greatest concerns because they can transmit Lyme disease and other tick-borne illnesses. Workers operating in wooded areas, tall grass, parks, utility corridors, farms, and construction sites near vegetation may be at increased risk. Because ticks are small and bites are often painless, workers may not notice they have been bitten until hours later.

Mosquitoes can also carry diseases in certain regions, while stinging insects such as wasps and hornets present a serious risk to workers with allergies. A severe allergic reaction (anaphylaxis) can become life-threatening within minutes and requires immediate emergency medical attention.

Preventing insect exposure begins with hazard assessments that identify worksites with elevated insect activity. Employers should encourage workers to wear long pants and long sleeves where practical, tuck pant legs into socks when working in tall vegetation, and use insect repellents containing approved active ingredients according to manufacturer directions.

Managers should also educate workers on conducting daily tick checks, recognizing the symptoms of Lyme disease, and safely removing attached ticks using fine-tipped tweezers. Emergency procedures should address insect sting responses, particularly for employees with known severe allergies who may carry epinephrine auto-injectors.

Heat Risks Affect Both the Body and Mind

Heat stress remains one of the most significant health risks facing outdoor workers during the warmer months. High temperatures, humidity, direct sunlight, heavy workloads, and PPE all contribute to increasing body temperature and reducing

the body’s ability to cool itself.

Heat-related illnesses range from mild heat rash and painful muscle cramps to heat exhaustion and heat stroke, which is a medical emergency requiring immediate treatment. Early symptoms may include excessive sweating, fatigue, dizziness, headache, nausea, weakness, and muscle cramps. As heat illness progresses, workers may become confused, disoriented, unsteady, or stop sweating altogether.

The mental effects of heat exposure are equally important. Elevated body temperatures impair concentration, reaction time, decision-making, and coordination. Workers operating vehicles, heavy equipment, power tools, or performing work at heights may be especially vulnerable because even minor lapses in attention can lead to serious incidents.

Heat risks often increase toward the end of summer as cumulative fatigue builds over weeks of physically demanding work. Workers may mistakenly believe they have become fully acclimatized and underestimate the dangers of prolonged exposure.

A Comprehensive Prevention Strategy

Because sun, insects, and heat often occur together, employers should develop integrated outdoor work health programs rather than addressing each hazard independently.

Worksite managers should begin each shift by reviewing weather forecasts, UV indexes, air quality conditions, and heat alerts. Daily safety meetings provide an opportunity to remind workers about hydration, sunscreen use, insect activity, and any environmental hazards expected during the shift.

Administrative controls remain among the most effective preventive measures. Heavy work should be scheduled during cooler parts of the day whenever possible, while physically

demanding tasks can be rotated among workers to reduce prolonged exposure. Frequent rest breaks in shaded or air-conditioned areas allow workers to cool down and recover before fatigue develops.

Hydration programs should encourage workers to drink water consistently throughout the day rather than waiting until they feel thirsty. Supervisors should monitor new employees, temporary workers, and those returning from extended absences, as they may not yet be acclimatized to outdoor conditions.

Training should also emphasize the importance of the buddy system. Co-workers are often the first to notice subtle behavioural changes associated with heat illness, dehydration, insect reactions, or sun-related fatigue. Encouraging workers to look out for one another creates another layer of protection that formal supervision alone cannot provide.

Building a Culture of Outdoor Health and Safety

Protecting outdoor workers requires continuous attention throughout the work season. Environmental hazards evolve throughout the day, and conditions can change rapidly as temperatures rise, storms develop, or insect activity increases.

For OHS professionals, success depends on integrating outdoor health risks into broader safety management systems through hazard assessments, worker education, emergency planning, supervisor training, and ongoing monitoring. Policies should empower supervisors to stop or modify work when environmental conditions become unsafe and encourage workers to report symptoms early without fear of criticism or lost productivity.

By recognizing the combined risks posed by sun exposure, insects, and heat, employers can move beyond compliance and

create healthier, safer worksites. A proactive approach not only reduces injuries and illnesses but also improves worker well-being, productivity, and resilience throughout Canada’s outdoor work season.