Preventing Heat-Related Illness

ACTSAFE SAFETY BULLETIN #4

Working in hot conditions or high levels of humidity can lead to heat-related illnesses with potentially serious, long-lasting effects, or even death. Employers are responsible for having an overall health and safety program in place that's specific to the workplace. There are also numerous actions that employers, workers, and supervisors can take to prevent heat-related illness.

WHAT IS HEAT-RELATED ILLNESS?

Generally, our bodies naturally maintain a temperature of about 37°C, partly through sweating and blood flow to the skin when conditions are hot or humid. Heat-related illnesses, sometimes referred to as heat stress, occur when our bodies can no longer transfer enough heat to keep us cool.

Heat-related illness	Signs and symptoms	
Heat rash	Pain, itching, and skin-colour changes	
Heat cramps	Painful muscle cramps or spasms	
Heat exhaustion A medically serious situation. Left untreated, can progress to heat stroke.	• Profuse sweating • Cool, pale, clammy skin • Shallow breathing • Increased heart rate	• Weak, rapid pulse • Weakness, fatigue, dizziness • Headache and nausea • Fatigue, disorientation, irritability
Heat stroke A medical emergency. Core body temperature rises to critical, even fatal, levels. Contact first aid immediately and call 911.	• No longer sweating • Hot, dry, flushed skin • Irregular pulse and rapid breathing • Lethargy, movement or coordination problems	• Nausea and vomiting • Fainting or unconsciousness • Difficulty speaking, agitation and confusion

HAZARDS

In British Columbia, your employer is required to identify hazards and assess the risks associated with them. There are three main causes of heat stress.

Environment

- Radiant heat from direct or indirect sunlight, such as reflections off pavement
- Work location where air temperatures are above 23°C
- High humidity (making it harder to cool down)

The Work

- Strenuous work or activity (e.g., grips and electrics moving heavy equipment)
- Prolonged exposure or long periods of work (e.g., PAs, BG, greens, security)

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The Worker

- Conditioning (unacclimatized workers are more prone to heat-related illness)
- Personal risk factors such as medical conditions, medications, poor physical conditioning, or very old or young age
- Not staying hydrated
- Clothing or PPE that traps heat and prevents cooling, including heavy or non-breathable costumes, prosthetics, or heavy make-up (e.g., performers, BG, and stunts).

Reporting hazards

Report any hazards or other safety issues to your supervisor or employer immediately. For non-urgent concerns, talk to your worker rep or someone on the joint health and safety committee.

CONTROL MEASURES

Your employer is also required to develop an exposure control plan (ECP) and control measures to help protect against heat-related illness.

Production and supervisors share responsibility for ensuring that control measures, including the following, are implemented and that workers follow them:

- Workers know the risks and how to manage their heat exposure within permissible limits.
- Workers know to inform their supervisor or employer if they feel ill.
- Heat stress warning signs are posted and easily accessible by workers.
- Sunscreen is available to workers, as required.
- An easily accessible supply of cool, potable water is maintained.
- The environment and workers are being monitored regularly throughout the day.
- Workers are provided with and take appropriate rest breaks.
- Workers have areas where they can get away from the heat.

Here are some basic guidelines that workers can use to prevent heat-related illness:

- Stay hydrated by drinking water or electrolyte-replacement drinks and avoid high-sugar and caffeinated beverages.
- Don't wait until you're thirsty to rehydrate.
- Eat light meals.
- Wear sun-protective clothing, such as UV sunglasses and wide-brimmed hats. Wear light-coloured, loose-fitting clothing made of fibres that increase airflow.
- Put on sunscreen and reapply as necessary.
- Make use of shaded areas, cooling tents, and air conditioning in vehicles, trailers, holding areas, and indoor workspaces.
- Make use of air-movement machines (e.g., cooling or misting fans), if provided.
- Use your prescribed rest breaks to cool off.
- Monitor yourself and others around you for any signs or symptoms of heat stress.

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Measurement

In some circumstances, your employer will also need to conduct on-site measurements of heat and humidity levels. This may also include physiological measurements (e.g., checking temperature with a thermometer or heart rate with a monitor) for specific workers — for example, performers who have to wear costumes or prosthetics that put them at higher risk than what's indicated by a Humidex measurement.

First Aid

If you notice any signs or symptoms of heat-related illness in yourself or others, immediately remove yourself or that person from further heat exposure and seek first aid. The first aid attendant will recommend what to do next, based on your organization's first aid procedures. Workers experiencing signs or symptoms should always check in with first aid before driving home or to hospital.

EDUCATION AND TRAINING

As part of your employer's exposure control plan (ECP), you should be provided with education and training on the risks and controls for heat-related illness. This should also include the signs and symptoms of heat-related illness, how and where to access first aid, and when to seek medical assistance. Before each shift, supervisors should ensure that workers have been adequately educated and trained on these topics.

REGULATORY REFERENCES

For more information on requirements, see the following sections of the Occupational Health and Safety Regulation and its associated guidelines:

- Section 7.27–7.32, Heat exposure
- G7.29-3, Physiological measures

You can find searchable versions of the Regulation and the guidelines at www.worksafebc.com

RELATED RESOURCES

- Exposure Control Plan: Extreme Heat Template
- WorkSafeBC Heat Stress webpage
- Crip Heat | Crip Care

Actsafe Safety Association

Actsafe (www.actsafe.ca) is a not-for-profit health and safety association supporting British Columbia's arts and entertainment industries. Actsafe provides resources and training to employers, workers, and supervisors. We are always here to provide information relevant to best practices around health and safety in the arts and entertainment industries in B.C.