

# Preventing Heat-Related Illness

## PRE-PRODUCTION INFORMATION SHEET #35

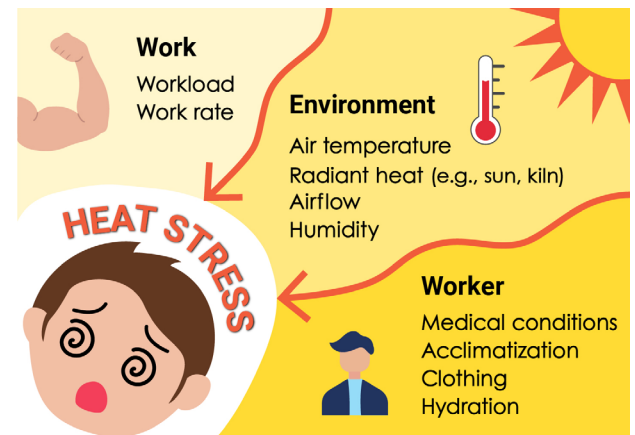
*This information sheet gives specific guidance about working in extreme hot temperature conditions and is aimed at production companies and their workers in the motion picture production industry.*

### OVERVIEW

This document provides general guidance when hot and humid conditions may be present. The combination of these conditions, high physical demands, inappropriate clothing and lack of hydration can create physical hazards for your cast and crew.

### WHAT IS HEAT STRESS?

Heat stress is a condition caused by a combination of factors that occurs when the body's means of controlling its internal temperature starts to fail. When this happens, the body's core temperature rises, the heart rate increases and workers can experience heat related disorders such as heat cramps, heat exhaustion, heat rash, or heat stroke.



### WHAT CAUSES HEAT STRESS?

Heat stress is caused by several risk factors including hot environments, strenuous work, a person's physical condition, pre-existing medical conditions and clothing worn while working.

Working outdoors under the radiant heat of the sun or in hot humid weather with little or no air flow are also factors.

- **Strenuous work:** A stunt performer running is at higher risk than someone with a more sedentary job
- **Working in non-breathable costumes:** Wearing heavy and/or non-breathable costumes, prosthetics, or certain types of makeup puts the individual at a higher risk than crew members wearing shorts and a t-shirt.

When you combine all these factors, the risk of a worker suffering heat stress is very high.

### SAFETY PRACTICE

Employers are to consider performers whose costumes cannot allow them to dress appropriately for the weather. Conduct appropriate assessments and implement controls to mitigate overheating.

For example, performers in special costumes may be at a high risk of heat stress disorder. Consider how quickly costumes can be removed, how to monitor performers while they are wearing costumes, how frequent rests should be, and how able the performers are to intake fluids.



# Preventing Heat-Related Illness

## PRE-PRODUCTION INFORMATION SHEET #35

### HOW TO WORK IN HOT CONDITIONS

The following control measures are advised for workers in a hot environment.

#### Control Measures for the Environment

- Have shaded areas, vehicles, or dressing stations with air conditioning available.
- Have water (whether plumbed or bottled) readily available and close to workers.
- Refer to historical weather data to determine the typical weather pattern for the filming location, and season.
- On a daily basis monitor weather forecasts and plan each day accordingly.

#### Control Measures for the Work Being Done

- Allow for frequent rest breaks throughout the work schedule.
- If possible, schedule physically demanding stunts and other strenuous activities on cooler days.
- If possible, schedule the filming of performers in heavy or non-breathable costumes, on cooler days.

#### Control Measures for Worker Safety

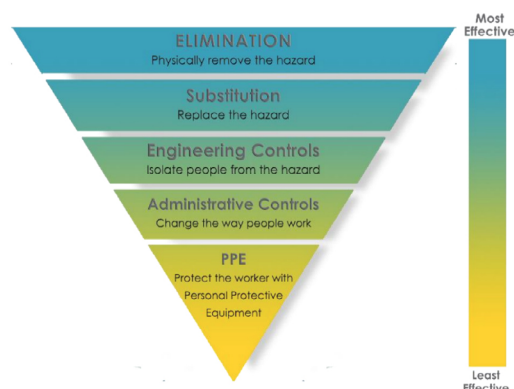
The following are recommendations.

- Allow for a sufficient acclimatization period before workers undertake a full workload.
- Provide workers with water and electrolyte replacement drinks.
- Ensure salted foods are provided.
- Conduct assessments of costume requirements when filming in extreme heat (for example, how quickly can a worker get out of costume, how to tell if workers are okay while wearing costumes).
- Have costume designed to allow increased evaporation and ventilation.
- Have first aid readily available with provisions for emergency transport, if necessary.
- Educate all workers on the signs and symptoms of heat-stress disorders and when to seek medical assistance

- Inform workers of clothing, hat or sunglass requirements before starting a work shift.

#### Production Considerations

If workers are exposed to thermal conditions which could cause heat stress, the employer must conduct a heat stress assessment, and develop and implement a heat stress Exposure Control Plan (ECP), including safe work procedures. [Acts safe developed an Extreme Heat ECP template](#) that gives employers a comprehensive framework on what is needed to properly assess, develop, and implement an ECP.



- As part of the heat stress assessment, consider the primary factors that contribute to heat stress (environment, work, worker) and implement appropriate controls. Document and keep it for due diligence.
- On-site measurement is another essential part of the assessment within your ECP. There are various methods available, such as WBGT, Humidex, and Dry Bulb.
- Consult with your Joint Health and Safety Committee (JHSC) and Production Safety Representative.
- Train supervisors on the risks associated with working in extreme heat, the controls in place to mitigate the risk, and how to recognize the signs of heat rash, heat cramps, heat exhaustion, and heatstroke in their crews.
- Monitor weather forecasts as far in advance as possible to implement any necessary plans, procedures, or hazard controls.



# Preventing Heat-Related Illness

## PRE-PRODUCTION INFORMATION SHEET #35

### HOW TO TREAT HEAT STRESS SYMPTOMS

**First Aid:** If a worker exposed to heat shows signs or reports symptoms of heat rash, heat cramps, heat exhaustion, and heatstroke, the worker must be removed from further heat exposure and be treated by a certified first aid attendant or a physician.

Disorder	Definition/Symptoms	Treatments
Heat Rash	<p>A skin irritation resulting from a buildup of perspiration under the skin caused by clogged pores or prolonged sweating during hot, humid weather.</p> <ul style="list-style-type: none"> <li>• Reddened skin in affected area</li> <li>• Pain and itching</li> <li>• Cluster of pimples or small blisters</li> </ul>	<ul style="list-style-type: none"> <li>• Keep the skin clean and dry.</li> </ul>
Heat Cramps	<p>Muscle cramps resulting from a salt imbalance in muscles.</p> <ul style="list-style-type: none"> <li>• Painful muscle spasms</li> <li>• Cramping of muscles such as the arms, legs and abdomen</li> <li>• Cramping usually occurs after muscles have cooled</li> </ul>	<ul style="list-style-type: none"> <li>• Replenish fluids and salt; use salty water and sports drinks</li> <li>• Avoid alcoholic or caffeinated beverages</li> </ul>
Heat Exhaustion	<p>The body's response to a substantial loss of water and salt through excessive sweating. Heat exhaustion is more serious than heat cramps.</p> <ul style="list-style-type: none"> <li>• Profuse sweating</li> <li>• Shallow respiration, weak rapid pulse</li> <li>• Nausea, dizziness, and headache</li> <li>• Blurred vision</li> <li>• Fatigue</li> <li>• Cold/wet (clammy) grayish skin or disorientation</li> </ul>	<ul style="list-style-type: none"> <li>• Lie down on back and remove tight fitting clothing</li> <li>• Replenish fluids and salt; use salty water and sports drinks</li> <li>• Avoid alcoholic or caffeinated beverages</li> <li>• Seek medical attention beyond first aid</li> </ul> <p>Symptoms can improve in 30 minutes.</p>
Heatstroke	<p>The body's mechanism for heat dissipation are overwhelmed and fail. The core body temperature rises to critical even fatal levels.</p> <ul style="list-style-type: none"> <li>• Chills</li> <li>• Irritability and disorientation</li> <li>• Convulsions</li> <li>• Rapid shallow breathing</li> <li>• Red face</li> <li>• Dry skin</li> <li>• Fainting or unconsciousness</li> <li>• Nausea, vomiting and headache</li> </ul>	<ul style="list-style-type: none"> <li>• Cool with whatever means available; cool water, ice packs, etc.</li> <li>• Circulate air to speed cooling</li> <li>• Lie down on back and remove excessive clothing</li> <li>• Organize immediate transport to hospital</li> </ul>



# Preventing Heat-Related Illness

## PRE-PRODUCTION INFORMATION SHEET #35

### THE IMPORTANCE OF ACCLIMATIZATION

During the first days of working in heat, a worker's body needs time to adjust. This period of adjustment or acclimatization varies by individual.

- To acclimatize workers, gradually increase their exposure time in hot environmental conditions over a seven to fourteen day period. If possible, consider adjusting the production schedule.
- The level of acclimatization reached is relative to their physical fitness.
- Acclimatization can be maintained after being away for two to three days, but loss will be noticed if away for more than a week.
- Total acclimatization is lost after approximately three weeks; loss is accelerated when an illness occurs.

### REGULATORY REFERENCES

Where applicable, the following WorkSafeBC regulations were used in the development of this document.

- Heat Exposure - OHS Regulation Part 7.27  
<https://www.worksafebc.com/en/law-policy/occupational-health-safety/searchable-ohs-regulation/ohs-regulation/part-07-noise-vibration-radiation-and-temperature>
- Heat Exposure - OHS Guideline Part 7.27  
[https://www.worksafebc.com/en/law-policy/occupational-health-safety/searchable-ohs-regulation/ohs-guidelines/guidelines-part-07#SectionNumber:G7.27\\_1](https://www.worksafebc.com/en/law-policy/occupational-health-safety/searchable-ohs-regulation/ohs-guidelines/guidelines-part-07#SectionNumber:G7.27_1)
- Exposure Control Plan - OHS Regulation Part 5.54  
[https://www.worksafebc.com/en/law-policy/occupational-health-safety/searchable-ohs-regulation/%20ohs-regulation/part-05-chemical-and-biological-substances#SectionTitle:Exposure\\_control\\_plan](https://www.worksafebc.com/en/law-policy/occupational-health-safety/searchable-ohs-regulation/%20ohs-regulation/part-05-chemical-and-biological-substances#SectionTitle:Exposure_control_plan)

### ADDITIONAL RESOURCES



The **WorkWise Heat Stress Safety App** determines the risk of heat stress related illness due to working in hot weather and is based on the Australian Institute of Occupational Hygienists (AIOH) 2013 Heat Stress Standard. While the app may not reflect the standard used in Canada, use of the app can provide important considerations when scheduling work in hot conditions. Use of the app is not mandatory, and is only provided for informational purposes.

Download the WorkWise Heat Stress App from either the Apple App Store or on Google Play.



Occupational Health Clinics for Ontario Workers has a free [Humidex-Based Heat Stress Calculator](https://www.ohcow.on.ca/resources/apps-tools-calculators/humidex-based-heat-stress-calculator-plan/) that can help employers measure the heat in their workplaces; please be advised that this method has limitations.



<https://www.ohcow.on.ca/resources/apps-tools-calculators/humidex-based-heat-stress-calculator-plan/>



The Canadian Government has an app that delivers weather alert notifications in your area. Their **WeatherCAN App** can be downloaded for free using the following link.



<https://www.canada.ca/en/environment-climate-change/services/weather-general-tools-resources/weathercan.html>

