

# HEAT ILLNESS GUIDE AND PREVENTION PROGRAM



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## HEAT ILLNESS GUIDE

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## INTRODUCTION

While it's best not to work outside in high temperatures, the nature of certain jobs—like construction, forestry, manufacturing or landscaping—sometimes makes it unavoidable. When this happens, a worker's body temperature can rise to dangerously high levels and put him or her at risk of serious health complications.

Normally, the human body cools itself through sweating. However, in hot and humid weather, sweating is often not enough and heat illnesses can occur.

As an employer, you have a duty under occupational health and safety legislation to take every reasonable precaution to protect your workers. This includes developing policies and procedures to protect workers in hot environments. Accordingly, any employer that mandates outdoor work or work in hot environments needs to be educated on heat illnesses in order to thoroughly protect its workers. In addition, training employees on heat illness and general safety practices can make all the difference when it comes to protecting them from the heat.

This Heat Illness Guide and Prevention Program is designed to provide a background on heat illnesses, including how the body handles heat, the different types of heat illnesses and specific risk factors. In addition, the resources found at the end of this guide will detail safety and prevention controls, and will provide organizations with real policies and strategies they can communicate to help ensure a safe and healthy workforce.

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## HOW THE HUMAN BODY HANDLES HEAT

While the human body is typically good at expelling excess heat, outside factors like temperature, humidity, air flow, clothing and personal risk factors can complicate the process. In general, the human body can release heat either by increasing blood flow or sweating.

### Increasing Blood Flow

When dealing with high body temperatures, an individual's bloodstream will often transfer excess heat to the skin. And, when the air is cooler than the skin, heat is transferred to the surrounding air in a process called convection. This is why a person's skin can appear red or flushed during hot weather.

### Sweating

When an individual gets hot, the brain tells the body to sweat. The body begins to cool as the sweat evaporates from the skin. This is the best way for the body to cool itself at temperatures over 35° C.

While sweating is an effective way for the body to reduce its temperature, anything that limits or prevents sweat from evaporating from the skin can complicate the process. This can include the following scenarios:

- An individual is not acclimatized to hot environments.
- An individual has a skin condition that limits sweating.
- An individual is taking medication that limits or prevents sweating.
- An individual is dehydrated or not drinking enough fluids.

Sweat evaporation can also be impacted by humidity, airflow and certain kinds of clothing. In general, high humidity and protective clothing are likely to hinder sweat evaporation, contributing to heat illnesses.



## HEAT ILLNESSES

Hot weather, especially when combined with strenuous physical labour, can cause body temperatures to rise to unsafe levels—leading to heat illnesses. Outdoor workers are especially vulnerable to heat-related illnesses because they spend the majority of the day outside in direct sunlight.

There are a variety of heat illnesses, including heat rash, heat cramps, heat exhaustion and heat stroke. Each of these illnesses vary in symptoms and severity, but commonly cause dizziness, weakness, nausea, blurry vision, confusion or loss of consciousness.

### Heat Rash

Heat rash is a red, bumpy rash characterized by severe itching. Heat rash is often caused by hot, humid environments and plugged sweat glands. Heat rash is one of the most common types of rashes and is often uncomfortable and painful.

### Heat Cramps

Heat cramps are the most common type of heat-related illness. Heat cramps are muscle spasms that usually affect the arms, legs or stomach.

Heat cramps are caused by heavy sweating, especially when water is not replaced quickly enough. Frequently, symptoms do not occur until after work, at night or when relaxing. Although heat cramps can be quite painful, they usually don't result in permanent damage.

### Heat Exhaustion

Heat exhaustion is a more serious condition than heat cramps. It occurs when the body's internal temperature regulating system is overworked, but has not completely shut down.

In heat exhaustion, the surface blood vessels and capillaries—which are meant to enlarge to cool the blood—collapse from loss of body fluids and necessary minerals. This happens when individuals do not drink enough fluids to replace what they are sweating away.

Common symptoms of heat exhaustion can include the following:

- Headaches
- Heavy sweating
- Intense thirst
- Dizziness, fatigue
- Loss of coordination
- Nausea
- Impaired judgment
- Loss of appetite
- Hyperventilation
- Tingling in hands or feet
- Anxiety
- Cool and moist skin
- Weak and rapid pulse
- Low blood pressure

### Heat Stroke

Heat stroke is a life-threatening illness with a high death rate. It occurs when the body has depleted its supply of water and salt, and the affected individual's core body temperature rises to deadly levels.

A heat stroke victim may first suffer heat cramps and/or heat exhaustion before progressing into the heat stroke stage—but not always. It is important to note that heat stroke symptoms are similar to those of a heart attack. Therefore, it is

very important to know how to recognize the signs and symptoms of heat stroke and to check for them any time an employee collapses while working in a hot environment.

Symptoms of heat stroke are the same as those for heat exhaustion but can also include any of the following:

- A high body temperature (39° C)
- A distinct absence of sweating
- Hot, red or flushed dry skin
- Rapid pulse
- Difficulty breathing
- Constricted pupils
- Headache
- Nausea
- Vomiting or confusion
- Bizarre behaviour
- High blood pressure

Advanced symptoms may include seizures, convulsions, collapse, loss of consciousness and a body temperature over 42° C.



## FACTORS THAT CONTRIBUTE TO HEAT ILLNESS

When working outdoors or at high temperatures, heat can come from a multitude of sources and negatively affect employees. Specifically, body temperatures commonly increase after strenuous work activity or when the body absorbs heat from the environment. In some cases, heavy work activity can be the main source of heat, and an employee could suffer symptoms of heat illness even at relatively low temperatures. Personal risk factors can also contribute to overheating.

### Heat from Activity

Workers' internal temperatures can rise to dangerous levels if they overexert themselves. In general, sustained levels of moderate or heavy physical activity can increase an individual's risk of heat illness. The following are some examples of light, moderate and heavy levels of activity to be aware of in order to manage your employee's workload:

| Level of Activity | Activity   | Real-world Examples   |
|-------------------|--|---|
| <b>Light</b>      | <ul style="list-style-type: none"> <li>◦ Sitting, using arms and legs moderately to perform jobs</li> <li>◦ Standing while performing simple tasks</li> <li>◦ Casual walking</li> </ul>                                    | <ul style="list-style-type: none"> <li>◦ Desk work</li> <li>◦ Assembly-line work</li> <li>◦ Supervising</li> </ul>  |
| <b>Moderate</b>   | <ul style="list-style-type: none"> <li>◦ Brisk walking</li> <li>◦ Sitting, using hands and arms vigorously</li> <li>◦ Standing while performing somewhat complex tasks</li> <li>◦ Occasional lifting or pushing</li> </ul> | <ul style="list-style-type: none"> <li>◦ Delivering mail</li> <li>◦ Using heavy machinery</li> <li>◦ Picking fruit and vegetables</li> <li>◦ Warehouse work</li> </ul>          |
| <b>Heavy</b>      | <ul style="list-style-type: none"> <li>◦ Construction tasks</li> <li>◦ Intermittent heavy lifting, pushing or pulling</li> <li>◦ Climbing stair with heavy gear</li> </ul>   | <ul style="list-style-type: none"> <li>◦ Sawing, planning, digging, shoveling and roofing</li> <li>◦ Restocking shelves and asbestos removal</li> <li>◦ Firefighting</li> </ul> |

It should be noted that the above chart does not take into account heat created by gear, radiant sources or the environment.

### Heat from the Environment

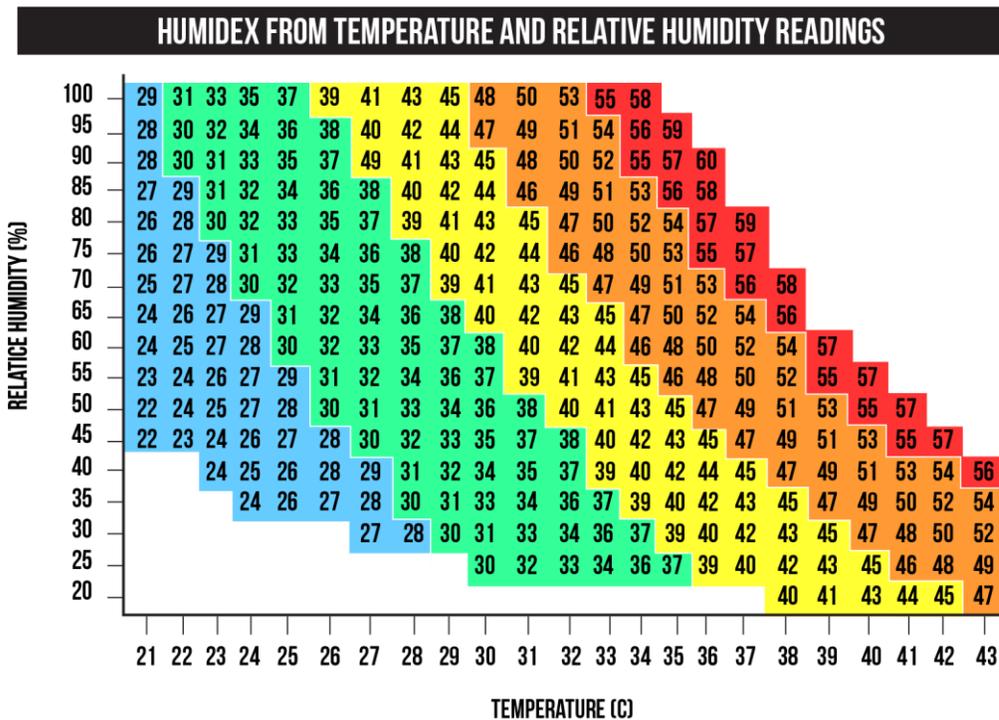
The level of external heat affecting workers is often related to the surrounding air temperature, the amount of air movement and sources of radiant heat. Radiant heat can come from a variety of sources, including heaters, boilers, fires and the sun.

In terms of protecting outdoor workers, consider limiting or halting work if one or more of the following is true:

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- Temperatures begin to rise to dangerous levels (see heat index chart below).
- Humidity increases to extremes.
- Heat from the sun intensifies.
- There is an absence of air movement.
- Proper controls are not in place to reduce the impact of radiant heat.
- Work is too strenuous for conditions.

The humidex, which takes into account both temperature and humidity, is a useful tool from Environment Canada for employers. To determine if the air temperature and humidity are safe for outdoor work, use the charts below.



| Humidex Range | Danger Level                   |
|---------------|--------------------------------|
| Less than 29  | Low (Comfortable)              |
| 30-39         | Mild (Some discomfort)         |
| 40-45         | Moderate (Great discomfort)    |
| Above 45      | High (Dangerous)               |
| Above 54      | Very High (Heat stroke likely) |

## Personal Risk Factors

In addition to heat generated from activity and the environment, certain personal factors can cause an individual to overheat. People respond to heat differently, and employers should be aware of the following factors that could increase an employee’s risk of experiencing a heat illness:



- **Acclimatization.** Acclimatization refers to an individual's heat tolerance. Those who don't work at high temperatures regularly are more likely to experience heat illnesses.
- **Poor physical fitness and obesity.** Physically fit individuals can generally cope with heat more easily than those who are not. Regular aerobic activity—like walking, running or swimming—can help improve an individual's tolerance to heat. In addition, excess fat leads to increased insulation. This means individuals who are overweight retain and generate more heat.
- **Age.** Those over the age of 40 are generally more susceptible to the effects of heat. Elderly populations are even more susceptible to heat-related conditions. In some cases, heart function decreases and sweating occurs at a slower rate for those over 40.
- **Pre-existing medical conditions or treatments.** Common medical conditions can affect a person's ability to handle heat. Specifically, heart problems and the low-salt diets used to treat them can weaken the body's ability to expel heat efficiently. Other conditions that can affect a person's ability to deal with heat include diabetes, cystic fibrosis and hyperthyroidism.
- **Short-term disorders and minor illnesses.** Fevers, diarrhea and vomiting lead to a loss of fluids, which can greatly impact how an individual copes with heat. Sleep deprivation has also been known to increase the risk of heat illness.
- **Chronic skin disorders.** Rashes, dermatitis, healed burns and other conditions that impact large areas of the skin can reduce the body's ability to sweat.
- **Use of medication.** Certain medications impact the body's ability to sweat. The following are just some examples of medications that could put a worker at risk:
  - Anticholinergic drugs
  - Antihistamines
  - Antipsychotic phenothiazines
  - Beta blockers
  - Calcium channel blockers
  - Diuretics
  - Lithium
- **Alcohol or drugs.** Alcohol is known to increase water loss and can cause dehydration in some cases. In addition, certain street drugs increase the body's internal temperature and its ability to expel heat.
- **Previous heat stroke.** Once workers have experienced heat stroke, they are more likely to suffer from another one. As such, these individuals often require special protection.



# **PREVENTION METHODOLOGY**



## SAFEGUARDING EMPLOYEES

Understanding heat illnesses and their contributing risk factors is a good first step for employers. However, to keep their workers safe, organizations must know how to limit and treat heat illnesses. In addition, implementing workplace controls can make all the difference when it comes to protecting at-risk employees from potentially deadly heat.

## RECOGNIZING AND TREATING HEAT ILLNESSES

As an employer, you need to know how to recognize and treat heat illnesses if you are to protect your workers. Understanding how to respond to the symptoms of heat illnesses can mean the difference between life and death.

Use the chart below to understand the different signs, symptoms, treatment methods and prevention procedures for common heat illnesses. Remember, it is always advisable to be overcautious when it comes to heat illness. Don't hesitate to seek medical care for employees who exhibit a form of heat illness. Doing so can save lives and protect your business.

| Heat Illness           | Causes  | Symptoms  | Treatment  | Prevention  |
|------------------------|---|---|--|---|
| <b>Heat rash</b>       | <ul style="list-style-type: none"> <li>◦ Hot, humid environments</li> <li>◦ Plugged sweat glands</li> </ul>   | <ul style="list-style-type: none"> <li>◦ Red, bumpy and itchy rash</li> </ul>   | <ul style="list-style-type: none"> <li>◦ Change into dry clothes.</li> <li>◦ Avoid hot environments.</li> <li>◦ Rinse skin with cool water.</li> </ul>   | <ul style="list-style-type: none"> <li>◦ Wash skin regularly to keep it clean and dry.</li> </ul>   |
| <b>Heat cramps</b>     | <ul style="list-style-type: none"> <li>◦ Heavy sweating from strenuous activity that drains a person's body of fluid and salt</li> </ul>                      | <ul style="list-style-type: none"> <li>◦ Painful cramps in commonly worked muscles, like the arms, legs or stomach</li> <li>◦ Cramps come on suddenly, either at work or later in the day</li> <li>◦ <b>Note:</b> Heat cramps can be a symptom of more serious heat-induced illnesses.</li> </ul> | <ul style="list-style-type: none"> <li>◦ Move to a cool area.</li> <li>◦ Loosen clothing and stretch affected muscles.</li> <li>◦ Drink cool, salted water or an electrolyte-replacement beverage.</li> <li>◦ Seek medical aid if cramps are severe or don't go away after fluid replenishment.</li> </ul> | <ul style="list-style-type: none"> <li>◦ Reduce activity levels.</li> <li>◦ Avoid heat.</li> <li>◦ Drink fluids regularly.</li> <li>◦ Use the buddy system to help spot signs of heat illnesses.</li> </ul> |
| <b>Heat exhaustion</b> | <ul style="list-style-type: none"> <li>◦ Fluid loss and inadequate salt and water intake</li> <li>◦ The body's cooling system begins to break down</li> </ul> | <ul style="list-style-type: none"> <li>◦ Heavy sweating</li> <li>◦ Cool, moist skin with body temperatures over 38° C</li> <li>◦ Weak pulse and normal or low blood</li> </ul>  | <ul style="list-style-type: none"> <li>◦ Seek medical attention immediately.</li> <li>◦ Move the person to a cool, shaded area.</li> <li>◦ Loosen or remove</li> </ul>   | <ul style="list-style-type: none"> <li>◦ Reduce activity levels.</li> <li>◦ Avoid heat.</li> <li>◦ Drink fluids regularly.</li> <li>◦ Use the buddy</li> </ul>  |

# HEAT ILLNESS GUIDE AND PREVENTION PROGRAM



|                    |  |   |   |   |
|--------------------|--|---|---|---|
|                    |  | <p>pressure</p> <ul style="list-style-type: none"> <li>◦ Weakness, nausea and vomiting</li> <li>◦ Thirst alongside panting or rapid breathing</li> <li>◦ Blurred vision</li> </ul>  | <p>clothing.</p> <ul style="list-style-type: none"> <li>◦ Provide cool water and never leave the person alone.</li> </ul>   | <p>system to help spot signs of heat illnesses.</p>   |
| <b>Heat stroke</b> | <ul style="list-style-type: none"> <li>◦ A classic heat stroke occurs in older adults and in persons with chronic illnesses; it occurs when a person's body has used up its water and salt reserves.</li> <li>◦ Exertion heat stroke generally occurs when a person engages in strenuous activity for long periods of time in the heat; the body's cooling system is exhausted and cannot get rid of excess heat.</li> </ul> | <ul style="list-style-type: none"> <li>◦ Body temperatures increase over 40° C</li> <li>◦ Weakness</li> <li>◦ Confusion</li> <li>◦ Hot, dry and red skin</li> <li>◦ Profuse sweating</li> <li>◦ Fast pulse</li> <li>◦ Headache or dizziness</li> <li>◦ Fainting or convulsions</li> </ul> | <ul style="list-style-type: none"> <li>◦ Call an ambulance as heat stroke can kill quickly.</li> <li>◦ Remove excess clothing.</li> <li>◦ Fan the victim.</li> <li>◦ Spray the victim with cool water.</li> </ul> | <ul style="list-style-type: none"> <li>◦ Reduce activity levels.</li> <li>◦ Avoid heat.</li> <li>◦ Drink fluids regularly.</li> <li>◦ Use the buddy system to help spot signs of heat illnesses.</li> </ul> |

## CONTROLLING HEAT ILLNESSES

There are a variety of ways employers can control heat illnesses in their workplace. Below are some common, yet effective methods, to help keep workers safe.

### Heat Illness Assessments

In situations where a worker is exposed or could be exposed to high temperatures, a heat illness assessment should be conducted. This assessment should provide employers with a general sense of the risks facing their employees.

Heat illness assessments should evaluate a wide range of risk factors including workplace temperature, humidity, heat radiation, air movement, employee workload, clothing and acclimatization.

Employers can use the Heat Illness Assessment Checklist found in the Employer Tools section of this guide.

### Heat Illness Control Plans

To protect workers, organizations must take proactive approaches to workplace safety. Once an employer has identified the heat-related risk factors present in the workplace, a heat illness control plan should be developed to reduce exposures. Heat illness control plans typically utilize a mix of engineering and administrative controls to protect workers.

#### Engineering Controls

Engineering controls are methods that are built into the design of a workplace, piece of equipment or a process in order to minimize a specific hazard. Engineering controls are often the most effective and preferred method for limiting an employee's exposure to excessive heat.

The following are some effective engineering controls to consider:

- Automate or mechanize certain processes to reduce a worker's exposure to heat.
- Reduce radiant heat by covering or insulating hot surfaces.
- Shield workers from radiant heat.
- Increase ventilation or provide air conditioning to remove hot air.
- Practise spot cooling by installing fans.
- Reduce sources of moisture and consider using a dehumidifier.

The proper engineering controls vary from workplace to workplace, so it is important to identify opportunities to install or create engineering controls during your heat illness assessment.

#### Administrative Controls

Administrative controls are changes in work procedures, safety policies, rules, supervision, schedules and training that reduce the duration, frequency and severity of heat exposures.

Administrative controls are particularly useful if engineering controls are not practical. This is often the case for outdoor jobs where heat from the environment cannot be controlled.

There are a variety of administrative controls that can help protect workers, and it's important for employers to pick ones that make sense for the type of work their staff members perform.



## *Acclimatize Workers*

The human body is good at adapting to hot temperatures over time. This process is known as acclimatization, and it allows the human body to modify its own functions to better cope with heat.

Acclimatization has the following benefits:

- Enhanced cardiovascular fitness
- Enhanced sweating
- Lower salt content in sweat

While this process takes time, acclimatized employees will be able to work in hotter conditions for longer periods of time than those who are not acclimatized. In general, acclimatization can take as long as three weeks, but can vary depending on personal risk factors.

Acclimatization should be done gradually, especially if a worker has never worked in a hot environment. Consider reducing the workload of new workers, giving them just 20 per cent of a normal workload on the first day of acclimatization. You can increase this workload by 10 per cent each day moving forward.

## *Supervise Workers*

In situations where a heat illness could occur, workers should not be allowed to perform job duties unsupervised. Managers should monitor workers closely or require work to be done in pairs or groups.

For added safety, first aid should be readily available and all workers should be trained on applicable emergency procedures.

## *Manage Work and Rest Cycles*

Employers or shift managers will need to oversee schedules in such a way that workers are given adequate time to cool down. Those experiencing a heat illness aren't always aware they are in danger, and rest periods are crucial to reducing the risk.

The following are some scheduling tips to consider:

- Schedule the most difficult or physically taxing jobs for the coolest part of the day.
- Utilize additional workers or rotate job tasks to reduce the amount of time employees are exposed to heat.
- Allow employees to work more slowly during the hottest periods of the day.
- Relocate work away from direct sunlight or radiant heat whenever possible.
- Schedule routine maintenance or tasks during cooler seasons. For indoor work, these routine tasks should be completed when hot operations are shut down.

In addition, consider providing employees with cool areas, including shaded or well-ventilated break spots. It should be noted that showering or soaking in cool water can cool the body quickly, and employers should provide these amenities where possible.

## *Provide Water*

Providing cool drinking water is a simple administrative control that can go a long way in safeguarding employees. The human body naturally sweats in order to cool itself. However, this can result in a significant loss of fluid that must be replenished through the workday.

Require workers to drink water before, during and after work. As a general rule, it's a good idea for employees to drink about a half a litre of water before beginning work. From there, they should have a glass of water every 20 minutes or so.

Please note that caffeine can cause dehydration, and you should limit workers' caffeine consumption whenever possible.

Employers can use the Heat Illness Prevention Program found in the Employer Tools section of this guide.

## Employee Training

Organizations should use the information in their heat illness control plans to train supervisors and workers. Training should include information regarding the following:

- How heat illnesses develop
- Heat illness risk factors in your workplace
- How to prevent heat illnesses
- Workers' role in executing the heat illness control plan

Employees and their supervisors should know how to spot signs of heat illness in themselves and their co-workers. This type of education is critical when it comes to providing timely treatment to those who need it.

# SUPPLEMENTAL DOCUMENTS

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HEAT ILLNESS PREVENTION POLICY

HEAT ILLNESS PREVENTION PROGRAM

HEAT ILLNESS HAZARD ASSESSMENT

THE HAZARDS OF HEAT POSTER

# HEAT ILLNESS PREVENTION POLICY

Location:  
Effective Date: <add today's  
date>

<enter company name> recognizes the potential problems caused by high temperatures in the work environment. In order to protect the well-being of all employees and reduce the potential for heat-related illnesses, <enter company name> has developed the following heat illness prevention policy.

This policy requires the full cooperation of all members of the <enter company name> team, including management, the joint health and safety committee, supervisors and workers. In order to monitor and evaluate the potential for heat-related problems in the workplace, a heat illness prevention program will be used to implement this policy.

Employees are asked to cooperate fully with this policy. All employees of <enter company name> will be trained to recognize the signs and symptoms of heat illness in themselves, as well as in other employees.

Employees experiencing symptoms of heat illness must inform [insert proper contact] immediately to obtain proper medical attention. During days when heat illness procedures are in place, all employees will follow the procedures set out by <enter company name>. In most cases, extra water and extended break periods will be provided to workers.

In order to monitor the effectiveness of this policy, <enter company name> will perform an annual review. The heat illness prevention policy and program will be evaluated and improved upon on a regular basis. Questions regarding this policy and the corresponding program should be directed to [insert proper contact].

Signed:

Date:

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Managing Director

---

Date

# HEAT ILLNESS PREVENTION PROGRAM

## HEAT ILLNESS PREVENTION PROGRAM

Employees who are exposed to excessive heat or who work in hot environments may be at risk of developing a heat-induced illness. Various factors can contribute to heat-induced illnesses such as air temperature, physical activity, individual susceptibility, radiant heat, humidity, air flow and clothing type. If not properly addressed, elevated temperatures can result in heat stroke, heat exhaustion, heat cramps or heat rashes. <enter company name> developed this program to protect employees from heat-induced illnesses while at work.

### Application

The guidelines set out in this program apply to all <enter company name> employees that may be required to work in environments with elevated temperatures.

### Roles and Responsibilities

#### Management

It is management's responsibility to provide a safe workplace for employees. Management will work with supervisors to assess the workplace and determine if heat-induced hazards are present or likely to be present. Following the assessment process, management will work to implement proper engineering controls and administrative controls. Management should take the following steps:

- Identify jobs with a potential risk of heat stress and develop job-specific safe work procedures to manage this hazard.
- Inform workers and their supervisors when their work involves potential risk of heat stress.
- Develop a process to ensure supervisors and workers are advised of the following:
  - Factors that can predispose them to heat stress
  - Warning signs and symptoms of heat stress conditions
  - Measures to be taken to protect against heat stress
- Post information on heat stress in the workplaces of employees potentially exposed to this hazard.
- Allow for a gradual period of acclimatization to work in hot environments for new and other non-acclimatized workers.
- Reschedule work on hot days to cooler times of the day when feasible.
- Implement additional administrative and engineering control measures where feasible.

#### Supervisors

- Schedule information sessions for employees whose work places them at risk of heat-induced illnesses.
- Implement safe work procedures to prevent heat-induced illness.
- Determine any additional rest breaks that may be required as a result of workload and local conditions.
- **[Insert additional responsibilities.]**

# HEAT ILLNESS PREVENTION PROGRAM

## Employees

- Be familiar with heat hazards, predisposing factors and preventive measures.
- Follow safe work procedures established to prevent heat-induced illness.
- Report to their supervisor heat-related symptoms in themselves or their co-workers.
- Follow recommended schedule of rest breaks, as advised by supervisors, to avoid heat exhaustion or collapse.
- **[Insert additional responsibilities.]**

## Heat Stress Control Measures

To manage heat illnesses, <enter company name> relies on various types of control measures. The control measures listed below, are utilized, often in combination with each other, to protect workers. These control measures take many forms and employees should be familiar with the different types of control measures used at <enter company name>.

## Engineering Controls

Engineering controls are methods that are built into the design of a workplace, piece of equipment or a process in order to minimize a specific hazard. <enter company name> utilizes the following engineering controls to reduce heat-induced illnesses:

- **[List engineering controls utilized in your workplace.]**

## Administrative Controls

Administrative controls are changes in work procedures, safety policies, rules, supervision, schedules and training that reduce the duration, frequency and severity of heat exposures. <enter company name> utilizes the following administrative controls to reduce heat-induced illnesses:

- **[List administrative controls utilized in your workplace.]**

## Heat-related Illnesses and Emergencies

If an employee reports an illness or signs of a heat-related illness are observed in an employee, stop all work immediately. Heat stroke is a medical emergency. Emergency personnel should be contacted immediately if an employee is showing signs of heat stroke. If an employee is believed to be experiencing heat-related symptoms, Table 1.1 provides a list of recommended actions. These recommended actions should only be used as a guide to respond appropriately to known or reported symptoms. In all cases of heat-related symptoms noted in Table 1.1, employees should be referred to **[insert appropriate contact]**.

# HEAT ILLNESS PREVENTION PROGRAM

## Training

Employees exposed to hot working conditions will receive heat stress training from health and safety personnel and/or job supervisors. Training will address the following topics:

- The different types of heat illness and the common signs and symptoms of heat illness
- Procedures for identifying, evaluating and controlling exposure to personal risk factors for heat illness
- The use of protective clothing and equipment to prevent heat-induced illnesses
- Procedures for identifying, evaluating and controlling exposure to environmental risk factors for heat illness
- Measures <enter company name> may utilize to manage heat
- Emergency response and first-aid procedures for heat-induced incidents
- Reporting procedures for heat illness incidents

## Program Review

A review of the Heat Illness Prevention Program will be performed annually to ensure that heat illness prevention procedures are in place and are followed properly. The audit will ensure that a written plan is maintained in English and the language understood by the majority of the employees.

# HEAT ILLNESS PREVENTION PROGRAM

Table 1.1

The table below outlines common heat stress injuries and illnesses along with their causes, symptoms, treatments and prevention techniques. <enter company name> employees should be familiar with the information included in the table.

| Heat Illness           | Causes  | Symptoms  | Treatment  | Prevention  |
|------------------------|---|---|--|---|
| <b>Heat rash</b>       | <ul style="list-style-type: none"> <li>◦ Hot, humid environments</li> <li>◦ Plugged sweat glands</li> </ul>   | <ul style="list-style-type: none"> <li>◦ Red, bumpy and itchy rash</li> </ul>   | <ul style="list-style-type: none"> <li>◦ Change into dry clothes.</li> <li>◦ Avoid hot environments.</li> <li>◦ Rinse skin with cool water.</li> </ul>   | <ul style="list-style-type: none"> <li>◦ Wash skin regularly to keep it clean and dry.</li> </ul>   |
| <b>Heat cramps</b>     | <ul style="list-style-type: none"> <li>◦ Heavy sweating from strenuous activity that drains a person's body of fluid and salt</li> </ul>                      | <ul style="list-style-type: none"> <li>◦ Painful cramps in commonly worked muscles, like the arms, legs or stomach</li> <li>◦ Cramps come on suddenly, either at work or later in the day</li> <li>◦ <b>Note:</b> Heat cramps can be a symptom of more serious heat-induced illnesses.</li> </ul> | <ul style="list-style-type: none"> <li>◦ Move to a cool area.</li> <li>◦ Loosen clothing and stretch affected muscles.</li> <li>◦ Drink cool, salted water or an electrolyte-replacement beverage.</li> <li>◦ Seek medical aid if cramps are severe or don't go away after fluid replenishment.</li> </ul> | <ul style="list-style-type: none"> <li>◦ Reduce activity levels.</li> <li>◦ Avoid heat.</li> <li>◦ Drink fluids regularly.</li> <li>◦ Use the buddy system to help spot signs of heat illnesses.</li> </ul> |
| <b>Heat exhaustion</b> | <ul style="list-style-type: none"> <li>◦ Fluid loss and inadequate salt and water intake</li> <li>◦ The body's cooling system begins to break down</li> </ul> | <ul style="list-style-type: none"> <li>◦ Heavy sweating</li> <li>◦ Cool, moist skin with body temperatures over 38° C</li> <li>◦ Weak pulse and normal or low blood pressure</li> <li>◦ Weakness, nausea and vomiting</li> <li>◦ Thirst alongside panting or rapid</li> </ul>                     | <ul style="list-style-type: none"> <li>◦ Seek medical attention immediately.</li> <li>◦ Move the person to a cool, shaded area.</li> <li>◦ Loosen or remove clothing.</li> <li>◦ Provide cool water and never leave the person alone.</li> </ul>   | <ul style="list-style-type: none"> <li>◦ Reduce activity levels.</li> <li>◦ Avoid heat.</li> <li>◦ Drink fluids regularly.</li> <li>◦ Use the buddy system to help spot signs of heat illnesses.</li> </ul> |

# HEAT ILLNESS PREVENTION PROGRAM

|                    |  |   |   |   |
|--------------------|--|---|---|---|
|                    |  | breathing<br><ul style="list-style-type: none"> <li>◦ Blurred vision</li> </ul>   |   |   |
| <b>Heat stroke</b> | <ul style="list-style-type: none"> <li>◦ A classic heat stroke occurs in older adults and in persons with chronic illnesses; it occurs when a person's body has used up its water and salt reserves.</li> <li>◦ Exertion heat stroke generally occurs when a person engages in strenuous activity for long periods of time in the heat; the body's cooling system is exhausted and cannot get rid of excess heat.</li> </ul> | <ul style="list-style-type: none"> <li>◦ Body temperatures increase over 40° C</li> <li>◦ Weakness</li> <li>◦ Confusion</li> <li>◦ Hot, dry and red skin</li> <li>◦ Profuse sweating</li> <li>◦ Fast pulse</li> <li>◦ Headache or dizziness</li> <li>◦ Fainting or convulsions</li> </ul> | <ul style="list-style-type: none"> <li>◦ Call an ambulance as heat stroke can kill quickly.</li> <li>◦ Remove excess clothing.</li> <li>◦ Fan the victim.</li> <li>◦ Spray the victim with cool water.</li> </ul> | <ul style="list-style-type: none"> <li>◦ Reduce activity levels.</li> <li>◦ Avoid heat.</li> <li>◦ Drink fluids regularly.</li> <li>◦ Use the buddy system to help spot signs of heat illnesses.</li> </ul> |

# HEAT ILLNESS HAZARD ASSESSMENT | CHECKLIST

Date:

Review conducted by:

Heat generated by increased physical activity, the environment, or workplace tools and machinery can pose a serious hazard to workers. If left unaddressed, employee exposure to heat can lead to heat cramps, heat exhaustion or heat stroke. Symptoms of these heat illnesses are very serious and can cause workers to experience headaches, nausea, vomiting, breathing issues and anxiety. In extreme cases, heat illnesses can be deadly.

In order to protect workers, it's important to conduct a heat illness hazard assessment. Doing so will ensure that significant risk factors are identified and addressed, and protect the health and safety of your workforce.

| TEMPERATURE   | YES                      | NO                       | N/A                      | CONTROL MEASURES TAKEN |
|---|--------------------------|--------------------------|--------------------------|------------------------|
| Do your workers perform work outdoors? Is their work directly impacted by the temperature of the environment? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                        |
| Do workplace temperatures often exceed 30° C?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                        |
| Does the air in the workplace feel hot?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                        |

| HUMIDITY   | YES                      | NO                       | N/A                      | CONTROL MEASURES TAKEN |
|--|--------------------------|--------------------------|--------------------------|------------------------|
| Is your workplace impacted by humidity?                                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                        |
| Does relative humidity of your workplace generally exceed 85 per cent? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                        |
| Does any of equipment produce steam?                                   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                        |
| Is your worker's skin often damp?                                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                        |

| HEAT RADIATION  | YES                      | NO                       | N/A                      | CONTROL MEASURES TAKEN |
|---|--------------------------|--------------------------|--------------------------|------------------------|
| Do your workers perform their job duties in direct sunlight?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                        |
| Are heat sources or heat-generating devices (welding machinery, hot surfaces, etc.) in close proximity to your workers? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                        |

# HEAT ILLNESS HAZARD ASSESSMENT | CHECKLIST

| AIR MOVEMENT   | YES                      | NO                       | N/A                      | CONTROL MEASURES TAKEN |
|--|--------------------------|--------------------------|--------------------------|------------------------|
| Is air movement stagnant in your workplace during hot periods? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                        |
| Does warm or hot air blow on your workers?                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                        |

| WORKLOAD  | YES                      | NO                       | N/A                      | CONTROL MEASURES TAKEN |
|---|--------------------------|--------------------------|--------------------------|------------------------|
| Do your workers often perform strenuous activities, such as carrying heavy objects over long distances? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                        |
| Do your employees perform physical work at a fast pace?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                        |

| CLOTHING AND EQUIPMENT   | YES                      | NO                       | N/A                      | CONTROL MEASURES TAKEN |
|--|--------------------------|--------------------------|--------------------------|------------------------|
| Do your workers wear thick or vapour-impermeable clothing?                       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                        |
| Do your workers carry heavy tools or equipment when performing their job duties? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                        |

| ACCLIMATIZATION   | YES                      | NO                       | N/A                      | CONTROL MEASURES TAKEN |
|---|--------------------------|--------------------------|--------------------------|------------------------|
| Are all of your workers acclimatized to a hot work environment? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                        |

## SUMMARY OF RISK ASSESSMENT AND RECOMMENDED CONTROL MEASURES

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|  |
|--|

# THE HAZARDS OF HEAT

Heat and humidity are a normal part of the workplace in summer, but how your body reacts to the heat depends on how hard you are working, how much water you have been drinking, how fit you are and whether you have become acclimatized to higher temperatures.

Prolonged or intense exposure to hot temperatures can cause heat-related illnesses that require immediate medical attention. Keep yourself safe by following these tips.



## **1. DRINK PLENTY OF WATER.**

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When working in hot environments, it's important to drink water often, even if you don't feel thirsty.



## **2. AVOID ALCOHOL AND CAFFEINATED DRINKS.**

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Alcohol and caffeinated beverages, such as tea, coffee and soft drinks, will dehydrate your body. These drinks should also be avoided the night before work as well.



## **3. WEAR LIGHT, LOOSE-FITTING CLOTHING.**

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If possible, wear clothes that allow sweat to evaporate. Light-coloured garments absorb less heat from the sun. Sunscreen and hats are also a great way to protect your skin from the sun.



## **4. WATCH FOR SIGNS OF HEAT-RELATED ILLNESSES.**

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Educate yourself on the signs of various heat-related illnesses. For further protection, use the buddy system and check on your partner periodically to ensure he or she is managing the heat.



## **5. KNOW YOUR PERSONAL RISK FACTORS.**

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Any of the following conditions could increase your risk for heat-related illness: excessive weight, poor physical condition, previous heat-related illnesses, older age, heart disease, high blood pressure, recent illnesses and certain medications.



## **6. REST.**

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Above all, it's critical that you take time to sit in a cool area frequently. You should also use this time to rehydrate.