

Hot Weather Guidelines for Sport and Active Recreation

VICSPORT

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1 SYNOPSIS

Vicsport has developed these guidelines in partnership with **Sport and Recreation Victoria** the Australian Centre for Research into Injury in Sport and its Prevention (ACRISP) to assist organisations with managing heat in sport while also supporting them to develop and promote good policy and practice to protect the health and safety of participants, officials, coaches, parents, volunteers, staff, sports trainers and spectators, whilst supporting continued participation.

Information and evidence-based advice about heat related illnesses, risk factors and mitigation strategies provided in these guidelines offer information and supportive resources to the Victorian sport sector and may be used to inform hot weather policies, extreme weather policies, risk plans and event plans and emergency management plans.

2 GLOSSARY

- 2.1 **Heat Illness** – medical conditions caused by exposure to heat.
- 2.2 **EHI** – Exertional Heat Illness – a term used for medical conditions caused by exposure to heat during physical activity.
- 2.3 **BoM** – Bureau of Meteorology
- 2.4 **HHA** – Heat Health Alert
- 2.5 **Participant** – refers to the active person in the activities of (Organisation) (includes terms such as player, athlete or sportsperson)
- 2.6 **HAZARD** – something that can cause harm
- 2.7 **Risk** – is the chance, high or low, that a hazard will cause somebody harm.
- 2.8 **UV** – Ultraviolet
- 2.9 **WBGT** – Wet Bulb Globe Temperature

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3 INTRODUCTION

Victoria has a diverse community and sport and physical activity should be accessible to everyone, with every opportunity taken to support participation in sport and active recreation.

State Sporting Associations (SSAs) are uniquely placed to support participation at all levels, through their own programs, their leagues, associations and clubs.

The benefits of participation in sport and physical activity are well documented in terms of the health and wellbeing of individuals. However, an increasing challenge for sport is balancing the provision of opportunities for participation along with the safety of participants, including athletes, officials, coaches, parents, volunteers, staff, sports trainers and spectators. One particular challenge is how to achieve that balance during warm to very hot weather or extended periods of exceptionally high day and night time temperatures (heatwaves) which may increase the risk of exertional heat illness occurring.

When there is a risk of exertional heat illness occurring, a range of mitigation strategies can be implemented to ensure that sporting activities continue while protecting the safety of participants. Organisations have a responsibility and duty of care to provide a safe environment for participants, athletes, officials, coaches, parents, volunteers, staff, sports trainers and spectators to ensure that the health, safety and wellbeing of its members takes priority over all other competing considerations. This includes having adequate measures in place to mitigate the risks of hot weather during matches, games, training sessions, activities, competitions and events.

It is recommended that sport organisations adopt a heat policy develop sport specific guidelines to help:

- Provide an environment for safe participation
- Decrease the risk of heat-related illness and injury among participants, officials and spectators
- Provide practical strategies to manage risks relevant to the sport
- Ensure the needs of individuals are considered.

Existing extreme weather policies or event and emergency management plans may require heat related additions regarding the management of sport during hot weather. Any sport specific policy that includes heat management should include clear guidelines for the timing of heat risk assessments and the communication of any changes and mitigation measures to all participants.

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Policy templates for State Sport Associations (SSAs), leagues, associations and clubs have been developed to be used in conjunction with this resource. The templates include information about heat illnesses and risk factors and allows you to add your own common mitigation approaches that are relevant to your sport. You are encouraged to customise the policy to ensure it is useful for your organisation.

This material is relevant for:

- State and National Sporting Organisations
- Regional Sports Assemblies
- Local Governments
- Local Sport Associations
- Leagues
- Clubs.

4 EVIDENCE BASE

4.1 EXTREME HEAT AND CLIMATE CHANGE

Victoria experiences periods of extreme heat and heatwaves which can negatively impact on community activities such as sport and active recreation.

Exposure to extreme heat poses a problem as it may result in exertional heat illness ranging from heat cramps, heat exhaustion, heat stroke, and even heat related death.¹ Therefore, it is important to be prepared as the likelihood of extreme heat increases with warm to hot climate conditions. Sporting organisations and participants should be prepared for hot weather given the predicted increases in the number of high heat days.

Australia has continued to experience increases in temperature with 7 out of the 10 warmest years on record recorded with the Australian Bureau of Meteorology since 2005.⁴ Climate change research and advice from leading scientific organisations suggest that Victoria may expect increases to the frequency and intensity of extreme weather events, including heat waves, which are known to cause the highest number of natural disaster related deaths in Australia.^{2,3}

4.2 HEAT VS ULTRAVIOLET (UV) RADIATION

The sun produces sunlight, heat and ultraviolet (UV) radiation which can affect the health of individuals participating in sport. However, it is important to note that exertional heat

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illness and ultraviolet (UV) radiation are two separate health issues that carry different individual risk factors. Nevertheless, they are both equally important to control in sporting environments through the implementation of prevention strategies, including policy.

Although both UV radiation and heat illness can occur due to weather conditions, particularly on warm to hot days, they are not the same. Individual health concerns related to UV radiation exposure can be more of a long-term issue affecting our skin and eyes as well as causing skin cancer, most commonly melanoma.⁶ In contrast, health effects from heat illness are most often experienced during or soon after exposure to warm weather.

For more information on how your sport can provide UV Protection head to the Vicsport website at vicsport.com.au/uv-protection.

4.3 SPORT AND PHYSICAL ACTIVITY

The sports industry has a variety of governance structures. Some SSAs have procedural authority over all levels of their sport, while others have affiliate organisations which have procedural control over a league and competing clubs. Sport organisations are also diversifying their offerings by providing more social and modified formats. This is resulting in more people participating in sport or active recreation in a wide range of settings, including outside the traditional club setting.

While active recreation (defined as leisure time, non-competitive physical activity) makes up the majority of physical activity, sport organisations cannot control the actions of individuals in this setting. Therefore, these guidelines are intended to assist with the heat management of any organised activity where an organisation has a duty of care to the participants, including competitive matches, organised social sport and come and try days.

5 EXERTIONAL HEAT ILLNESSES

5.1 WHAT IS EXERTIONAL HEAT ILLNESS?

Exertional heat illness can occur due to a range of factors including:

- Warm to hot and humid temperature conditions
- Individual risk factors
- Sport specific risk factors.

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Exertional heat illness may occur during warm to hot conditions, and may even occur during cooler conditions, particularly if the participant is exercising vigorously or has other individual risk factors that increase the chances of it occurring.⁷

Exertional heat illness can be prevented by knowing the risk factors, signs and symptoms and applying prevention strategies to minimise the risk of it occurring.

Signs and symptoms of exertional heat illness in sport can present from mild to severe in nature. Symptoms may range from: light headedness, dizziness, nausea, obvious fatigue or loss of skill and coordination, unsteadiness, cessation of sweating, confusion, aggressive or irrational behaviour, collapse or ashen grey pale skin.^{1,8}

5.2 SIGNS AND SYMPTOMS OF HEAT-RELATED ILLNESS

While participating in sport or other activities an individual may develop signs and symptoms of exertional heat illness.

Please note: The following advice has been prescribed from information retrieved from Australian Red Cross (2017) & Better Health Channel¹ (2015).⁸

Exertional heat illness can be categorised from mild to severe. It can also lead to reduced performance on the day of an activity and the days following (in both sport and other activities, such as work/school). Common signs and symptoms of heat related illness include:

Muscle cramps:

Symptoms may include abdominal, arm or leg muscle pains or spasms. This may be a result from the loss of salt and water due to heat and exertion. First aid treatment may include:

- Stop sport or activity
- Rest in a cool environment
- Rest before continuing to be active in sport or activity
- Seek medical help if there is no improvement.

Heat syncope (fainting):

Symptoms may include dizziness, fainting, headache and vomiting. This is a result a sudden drop in blood pressure as blood flows away from the major organs to the extremities (skin) to try and cool down. First aid treatment may include:

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- Stop sport or activity
- Rest in a cool environment
- Hydrate
- Rest before continuing to be active in sport or activity
- Seek medical help if there is no improvement.

Heat exhaustion:

Symptoms may include profuse sweating, weakness, nausea, vomiting, headache, dizziness, muscle cramps, rapid weak pulse and extreme thirst.

This occurs due to heat and exertion when excessive sweating reduces the blood volume due to a loss of salt and water.

First aid treatment may include:

- Stop sport or activity
- Lay person down in a cool environment
- Cool body (remove outer clothing or wet clothes, mist skin with cool water, fan/air conditioner)
- Hydrate
- Seek medical advice (If needed call triple zero “000” or “112” from a mobile)
- Prepare to give CPR if necessary.

PLEASE NOTE: *This is a serious condition that can develop into heatstroke.*

Heat stroke:

This is a medical emergency and requires urgent attention.

Symptoms include red, hot and dry skin (no sweating), rapid pulse, confusion, irrational behaviour, seizures, and unconsciousness.

Heatstroke occurs when the core body temperature rises above 40°C and the body’s internal systems start to shut down. Many organs in the body suffer damage and the body temperature must be reduced quickly.

First aid treatment includes:

- Call triple zero “000” for an ambulance (or “112” from a mobile)
- Lay person down in a cool environment
- **Do not** give the person fluids to drink

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- Cool body (remove outer clothing or wet clothes, mist skin with cool water, fan/aircon)
- Place ice packs *(wrapped in towel) under armpits and groin
- **Stop cooling** if person starts shivering
- If unconscious place person on their side and clear their airway
- Prepare to give CPR if necessary.

6 RISK FACTORS

A risk management approach is recommended when addressing exertional heat illness and its associated risk factors. This includes the undertaking of a risk assessment to identify any risks so appropriate mitigations can be put in place to reduce the risk. Environmental, individual and sport specific risk factors must all be considered when conducting a risk assessment.

Responses to heat can vary and it is not possible to provide set rules across different sports about limiting conditions in hot weather. Therefore, it is important to know the risk factors, how to mitigate them to and how to monitor individual responses. Factors that may increase the risk of exertional heat illness include:

- Age (children and older adults over 65 are considered at greater risk of heat illness)
- Poor physical condition (it is possible to experience heat illness at lower temperatures when exercising beyond current capacity)
- Inadequate acclimatization (occurs when the body is not conditioned to warm and/or humid climates)
- Illness or medical conditions (individuals may be more affected by heat due to medications and illness)
- Dehydration and electrolyte imbalances (hydration is needed to keep your body's core temperature down during sport or hot conditions)
- High intensity of activities (higher intensity activity causes the body to sweat more and increases the risk of heat illness)
- Excessive clothing and athletic gear (for example, helmets, head gear, shoulder pads, chest plates, gloves)
- Lack of awareness and education about exertional heat illness
- Radiant heat from playing surfaces (different surfaces radiate different levels of heat)
- Venue and location (whether the venue is outdoor or indoor, the air flow, shade provisions and cooling capabilities of buildings)
- Time of day (the risk is higher at times closer to the afternoon)

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- Duration of play (risk is higher if play continues without rest breaks)
- Availability of safety or first aid personnel (able to identify, treat and manage heat illness).⁹

6.1 ENVIRONMENTAL RISK FACTORS

Climate related environmental risk factors can affect sports settings and therefore must be considered in risk assessments. This can be measured through a range of ways including checking:

- Ambient temperature – local air temperature
- Wet Bulb Globe Temperature (WGBT) – a measure of the heat stress in direct sunlight, which considers: temperature, humidity, wind speed, sun angle and cloud cover (solar radiation)
- Heat Stress Index – a measurement of the amount of evaporation (perspiration) required vs the maximum ability of the average person to perspire (evaporate fluids) to cool themselves.¹⁰

Climatic conditions that can increase the risk of exertional heat illness include:

- Rising air temperature
- Relative humidity – it becomes more difficult to regulate body temperature in higher humidity due to a decrease in sweat evaporation.¹⁰

NOTE: *the body can cope better with higher humidity at low ambient temperatures than at high ambient temperatures.*

6.2 CLIMATE (HEAT) INFORMATION SERVICES AND PRODUCTS

There are a range of publicly accessible platforms from which sport organisers can obtain information about climate conditions.

6.2.1 Bureau of Meteorology

The Bureau of Meteorology (BoM) provides information on local weather conditions and observations including temperature, UV, wind speed and thermal comfort. Weather warnings, including heat waves, can be viewed at the BoM website and should be considered as part of any sport's safety policy and guidelines.

Obtaining local weather forecast before and on the day of matches, games, training sessions, activities, competitions and events may minimise the risk of heat illness occurring.

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Weather forecasts can be checked using a range of weather observations available through the BoM including:

- **BOM Weather app**
<http://www.bom.gov.au/app/>

This app can be downloaded onto your electronic device. It displays current conditions across Victoria, as well as forecasts, radar images and weather warnings.

- **Forecast Summary of Victorian Towns**
<http://www.bom.gov.au/vic/forecasts/towns.shtml>

This webpage provides towns across regional and metropolitan Victoria with a current minimum and maximum local air temperature weather forecast for that day. By clicking on a town, a forecast a 7-day outlook will also be displayed.¹¹

- **Thermal Comfort Observations**
<http://www.bom.gov.au/products/IDV65079.shtml>

This webpage displays a range of current thermal comfort observations across Victoria including:

- Wet Bulb Globe Temperature – a measure of the heat stress in direct sunlight which considers temperature, humidity, wind speed, sun angle and cloud cover (solar radiation) in sun and shade
 - Apparent Temperature – a measure of temperature, humidity and wind
 - Relative humidity
 - Wind speed.¹²
- **Victorian 7-day Forecasts**
<http://www.bom.gov.au/vic/forecasts/map7day.shtml>

This webpage displays an interactive map of Victoria that allows the user to click on a town to display the maximum and minimum local air temperatures for that week.¹³

- **Heatwave Service of Australia**
<http://www.bom.gov.au/australia/heatwave/index.shtml>

A heatwave is declared when a geographic location experiences unusually high minimum and maximum temperatures for three or more days.¹⁴

This webpage provides a heatwave assessment for the last two three-day periods and heatwave forecasts for the next five three-day periods. This is then displayed in a map

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that illustrates the location of low-intensity, severe and extreme heatwaves throughout Australia. The Heatwave Service is operational from November until the end of March.

6.2.2 Victorian Government

The Victorian Government in conjunction with the Department of Health and Human Services provides online services to help Victorians easily access emergency warnings and information. This includes notifying Victorians of extreme heat conditions such as heat waves.

- **Emergency Management Victoria app**
<http://emergency.vic.gov.au/prepare/#extreme%20heat>

The Emergency Management Victoria app can be easily downloaded for sporting organisations to adopt and use.¹⁵ This app provides advice on preparing for extreme heat conditions including information on:

- Signs and symptoms of exertional heat illness
 - Individual risk factors
 - Planning for extreme heat
 - Link to Heat Health Alerts.
- **Heat Health Alert**
<https://www2.health.vic.gov.au/public-health/environmental-health/climate-weather-and-public-health/heatwaves-and-extreme-heat/heat-health-alerts>

Heat health temperature thresholds have been developed for each nine districts throughout Victoria to highlight when heat related illness is considered more likely to occur due to warm or hot weather forecasts.¹⁶ This is calculated using the average maximum and minimum temperature for that region.

Heat health alerts are issued by Victoria's Chief Health Officer to those that have subscribed to the health alert service when temperatures are predicted to exceed heat health thresholds. Heat health alerts are available directly from the Department of Health website. This offers opportunities for informing the sporting sector as organisations at all levels of sport can nominate a person to subscribe and receive up to date information.

It is recommended that relevant decision makers (e.g. event organisers, match officials, coaches and administrators) subscribe to the Heat Health Alert system to be notified of current heat health alerts to be able to effectively plan for hot days that may impact sport.

Subscribe here: <http://www.health.vic.gov.au/subscribe/>

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Currently, the Heat Health Alert System operates each year from December to the end of February of the following year.

6.3 INDIVIDUAL RISK FACTORS

There are a range of potential individual risk factors that may increase the risk of exertional heat illness occurring in a sport setting that may need to be considered.

6.3.1 Age

Children and Older Adults aged over 65 are considered at greater risk of exertional heat illness.

6.3.2 Children

The impact of training and competing in sport during warm to hot weather conditions can have a negative response on a child's health. Children who are less fit, less acclimatised to climatic conditions and those with a higher percentage of body fat may be at greater risk of being affected by heat.^{17,9}

Young children can be quite sensitive to the effects of warm to hot temperatures as they tend to sweat less than adults and will often rely on others to regulate their environments, including the provision of drinking water.⁹

Additionally, adolescents experiencing growth spurts and who are increasing their training capacity can be at increased risk of being heat affected. This is also the case for extremely fit adolescents as they too are increased risk during times of rapid growth. It is also important to recognise that the effects from exertional heat illness among children may not always be immediate and could potentially carry over to the next competition or training session.¹⁷

6.3.3 Older adults

Older adults aged over 65, who are playing sport in warm to hot conditions are at an increased risk of exertional heat illness and should take extra precautions to minimise the risk of heat exposure.¹⁸

Older adults aged over 65:

- Are less efficient at regulating their body temperature at rest or when exercising as they:
 - Do not sweat as much
 - Store body fat differently which can affect heat regulation.

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- Are more likely to suffer from chronic disease that may increase the risk of heat illness.
- Are more likely to take medication that can affect:
 - Heat regulation
 - Sweating
 - Increase the risk dehydration.

6.3.4 Poor physical condition

An individual's physical condition may affect the likelihood of being affected by warm to hot conditions. This is particularly true for individuals participating in sport who have lower fitness levels than others¹⁰. These individuals may be more likely to:

- Experience exertional heat illness at lower temperatures if they are exercising beyond current capacity
- Be prone to exertional heat illness if they are overweight due to retaining more body heat
- Become dehydrated quicker and be more susceptible to exertional heat illness due to overexertion.

6.3.5 Inadequate acclimatization

It is important for sport participants to acclimatise to warm to hot weather conditions to help reduce the risk of exertional heat illness occurring. A rise in temperature can increase training load. Therefore, the greater the change in temperature, the greater the risk. Exertional heat illness is more likely to occur when the body is not conditioned to warm and/or humid climates and therefore training should initially take place at a lower intensity until participants become acclimatised to new conditions, generally around five days. Sporting activities can then increase in intensity with the reduced risk of heat illness occurring among individuals.⁹

Sporting organisations should consider whether participants are acclimatised to conditions during warm to hot weather.¹⁰

6.3.6 Illness or medical conditions

Individuals may be more affected by heat when they are suffering from illness or medical conditions.¹⁰ Medications can affect the body's heat regulation system, reduce sweating and can also increase the risk of dehydration, physiologically making them more vulnerable or susceptible to the effects of warm to hot conditions. Therefore, individuals who are physically ill, especially with heart disease or high blood pressure, or who take certain medications, such as for depression, insomnia, or poor circulation, may be affected by extreme heat.

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It is important to note that individuals with pre-existing chronic illness (for example, cardiovascular, cerebral, and respiratory diseases) who are exposed to extreme heat may be at serious risk of exertional heat illness and in extreme cases, even death.

6.3.7 Special considerations

Individuals participating in sport with certain disabilities may require special consideration when exercising. Heat regulation functions that help to reduce the body from overheating (such as sweating and blood flow) may not work as effectively as those of able-bodied individuals. This can result in dangerous increases in core body temperature during exercise in both warm and cooler conditions.¹⁹ Event organisers, coaches or team managers should take these issues into consideration when athletes with a disability are participating, whether indoors or outdoors and regardless of temperature.

6.3.8 Dehydration

Good hydration practices are required to keep the body's core temperature down during sport or hot conditions.²⁰ It is important that individuals rehydrate with water to compensate for what the body loses in sweat.

Appropriate hydration levels are important for both health and performance during exercise as the body uses sweat to keep its core temperature cool which in turn causes dehydration. During exercise, heat is removed from the body via sweat formed on the skin. As the sweat evaporate off the skin, the heat is also removed which aids in cooling the body during exercise.

Many factors can contribute to individual sweat rates including:

- Genetics
- Body size
- Gender
- Training adaptation
- Heat acclimatisation.

As temperature and humidity rises, or exercise intensity increases, sweat production (and therefore fluid loss) will also increase. This loss of body fluid, if not well managed, can lead to dehydration. Early signs of dehydration can include:

- Increase in heart rate
- Increase in body temperature
- Increase in the perceived effort of the exercise

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- Mental fatigue leading to reduced concentration and decision making and skill errors.

In extreme cases dehydration can lead to:

- Nausea
- Vomiting
- Diarrhoea
- Other gastrointestinal problems.

Sport organisations should consider pre, during and post-event hydration strategies and encourage participants to 'drink to thirst', particularly during warm to hot and humid weather conditions.²¹

6.3.9 Intensity of Exercise / Level of Play

Exercising at high intensity or vigorous levels as well as at your personal capacity causes the body to sweat more and consequently increase the risk of heat illness particularly during warm to hot weather conditions¹⁰.

Exertional heat illness can occur during activities performed at all intensity levels, however, the higher the intensity, the increase in risk. The following examples of the level of play are categorised from highest to lowest risk:



- Maximal effort (e.g. sprints)
- Sustained Sub-maximal effort (e.g. marathon)
- Sub-maximal effort with breaks (e.g. tennis, badminton, soccer, AFL)
- Moderate pace with breaks (e.g. basketball, volleyball)
- Easy Pace (e.g. Lawn bowls)

6.4 SPORT SPECIFIC RISK FACTORS

Unique and specific characteristics of a particular sport or activity can contribute to an increased risk of exertional heat illness. The following risk factors may be relevant to sporting organisations and may require consideration. It is important to note that many of the following risk factors can be adjusted to reduce the risk of exertional heat illness.

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6.4.1 Clothing and Athletic Gear

Types of clothing that is worn when participating in sport, is generally chosen to suit the needs of that sport. It may be to increase performance or provide protection from injury. It is important to recognise that some sporting gear may contribute to exertional heat illness during warm to hot conditions.²² Some examples of clothing that may increase heat exposure include:

- Helmets and head gear
- Leathers in motorsports
- Shoulder pads
- Chest plate
- Gloves.

Sport should not put participants at risk by removing protective clothing however it is recommended that non-breathable clothing be removed as soon as possible if the participants or officials are feeling unwell in hot conditions.

If possible, uniform fabrics that minimise heat storage and enhance sweat evaporation should be considered in warm to hot conditions. This can include clothing worn by players, umpires, other officials and volunteers. Try to allow players to wear light weight, light coloured, loose fitting clothing, as well as hats, sunglasses, and SPF 50 + broad spectrum sunscreen.

6.4.2 Lack of Awareness and Education of Heat Illness

Practical strategies should be provided by organisations to manage the risk of exertional heat illnesses.

Personnel within organisations involved in protecting participants from exertional heat illness include the board/committee, management, staff and volunteers. Those people have responsibilities to protect the safety of all members and should:

- Understand the risks of exertional heat illness.
- Understand and appropriately respond to the needs of participants who are more vulnerable to exertional heat illness.
- Appropriately act on any concerns raised by participants about exertional heat illness.
- Understand the definitions, indicators and impact of exertional heat illness.
- Know and follow guidelines in relation to the care of all members during warm to very hot weather, and at times of extended periods of exceptionally high day and night time temperatures (heatwaves).

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- Not jeopardise the health and safety of members.

Heat safety is also a shared responsibility, and therefore, everyone who participates in sporting activities should be responsible at some level for their own care and protection from heat illness. Organisations should ensure that participants are aware of the signs and symptoms of heat illness. They should also provide simple strategies to reduce individual risk factors.

6.4.3 Playing Surfaces

Different surfaces radiate various levels of heat during hot conditions and are an important consideration in heat illness prevention.^{10,23,24,25} The amount of sunshine (solar radiation) is an environmental condition that can affect how hot surfaces can become. Some surfaces may even retain heat during hot periods. Whilst watering can reduce the surface temperature of some surfaces, it is important to note that this may be only temporary, and the surface temperature will rise again if warm to hot conditions continue. In addition, it can increase the humidity levels above the surface.

The following playing surfaces are ranked from hottest to coolest in heat emission:



- **Asphalt.** This surface produces high levels of radiant heat and exposure times need to be monitored in hot conditions.
- **Synthetic turf.** artificial turf produces greater surface heat than natural grass. The infill system used has a significant effect on the surface temperature with the highest temperatures recorded on fields with black crumbed rubber infill systems.
- **Sand.**
- **Boards** (timber).
- **Natural grass.** Natural grass surfaces should not increase heat related injury risk however unirrigated grass with a brown dirt-like appearance can have a significant difference in its surface temperature compared to the irrigated natural grass.
- **Water.**

6.4.4 Venue and Location

The venue or location at which a sporting event or activity is held can contribute to an increased risk of exertional heat illness. It is important to note that many of the following risk factors can be adjusted to reduce the risk of heat illness.

The following risk factors may be relevant to sporting organisations and may require consideration:

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- The venue is outdoor
- The venue is indoor
- The air flow
- Shade provisions
- Cooling capabilities of buildings.

Shade provision for players, participants and spectators is an important consideration in reducing the risk of exertional heat illness as it can provide respite from hot conditions. Shade can include permanent built structures, such as sails or awnings, portable shade, such as marquees, and natural shade (trees).²⁶

Sporting organisations who are not able to provide permanent shade structures at their venues are encouraged to promote opportunities for participation to bring their own shade structures whenever possible.

Grants for shade provision may be available. Government grants are published on vic.gov.au, however, it is also useful to check the websites of your local council, VicHealth and Cancer Council Victoria.

A number of resources are available to support clubs to develop good shade solutions:

- Shade Design for Public Places www.mav.asn.au/policy-services/health/Pages/skin-cancer-prevention.aspx
- Physical Shade Structures www.mav.asn.au/policy-services/health/Pages/skin-cancer-prevention.aspx
- Portable Shade Tips www.sunsmart.com.au/downloads/resources/brochures/portable-shade-tips.pdf
- SunSmart Shade Guidelines www.sunsmart.com.au/downloads/resources/brochures/shade-guidelines.pdf

6.4.5 Time and Duration of Play

Different times of the day, rest breaks and time between drinks can increase the risk of heat illness. Increasing hydration breaks, seeking shade on breaks, or scheduling during periods of cooler ambient temperatures could reduce the risk.

The scheduling of sport and activities can impact on the likelihood of exertional heat illness occurring. The following times are ranking from highest risk to lowest in relation to the level of heat exposure:

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- 11 am – 3pm
- 3pm - sunset
- 9-11 am
- Evening (after sunset)
- Early morning (before 9am)

The duration of sport and activities should also be considered. The following times are ranked from highest to lowest in risk:



- > 120 minutes
- 60 - 120 Minutes
- 30- 60 minutes
- < 30 minutes

The time of play between scheduled breaks is important as rest and rehydration will help to mitigate the risk of exertional heat illness occurring. The following examples of scheduled break times between play are categorised from highest to lowest risk:



- > 45 minutes
- 35-45 minutes
- 25-35 minutes
- 15 – 25 minutes
- Less than 5 minutes

7 MITIGATION STRATEGIES

Sports have varying rules to determine when their sport should be modified or cancelled in hot weather. For many sports, ambient temperature has been used as a definitive number to use to modify or cancel, however other factors impact on whether there is a risk of exertional heat illness and therefore sports should take note of the multiple factors which may contribute including individual and sport specific factors.

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Implementing strategies to reduce the risk of exertional heat illness is primarily important at the administrative level. Team coaches and other staff can help participants to ensure mitigations are actioned such as ensuring a balanced work to rest ratio, providing opportunities for hydration, recognising early warning signs of heat illness, and preparing for emergency care.

Heat accumulation can lead to exertional heat illness and therefore it is important to continue monitoring the situation as conditions may change. If there is an increased risk of exertional heat illness occurring, modifications, mandatory rest periods or ceasing all activity may need to be actioned.

7.1 MODIFICATION PARAMETERS

The following sport modification parameters can be implemented if there is a risk of exertional heat illness to participants, parents, spectators, contractors, officials, coaches, judges or staff.

- Rescheduling
 - Changing the time of the event to a cooler part of the day
 - Moving to an alternative venue.
- Rule changes
 - Reducing length of games
 - Mandating rotations
 - Mandating rest and drink breaks
 - Appropriate clothing or uniform modifications where required.
- Additional breaks
 - Increase break times
 - Increase break frequency.
- Shorter duration of play
 - Shortening the event to reduce the exposure
 - Shortening participant exposure to high risk conditions by increasing rotations or substitutions in games or decreasing workload in training.

Other considerations may include:

- Increasing the amount of shade available (by providing portable shelters, encouraging participants/clubs/teams to bring portable shelters)

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- Increasing availability and access to water for drinking and where appropriate mist sprays (consider officials and spectators as well as participants)
- Present a range of strategies for externally cooling a participant (e.g. cold-water immersion, cooling garments, towels, fanning)
- Present a range of strategies for internal cooling of a participant (e.g. cold fluid, ice-slurry)
- Monitor players closely and recognise signs/symptoms of heat illness
- Ensure the availability of emergency first aid response at the venue (parents with first aid knowledge, certified first aid responders, and/or ambulance and emergency services)
- Promote sun protection by encouraging/allowing players to wear hats, sunglasses, long-sleeves, sunscreen
- Provide education for participants about the risks of exertional heat illness.

Examples of sport specific modifications include:

Cricket:

- Reducing the number of overs
- Setting the maximum number of overs that a bowler can bowl
- Rotating wicket keepers.

Netball:

- Reduced length of quarters
- Allowing drink break during change of ends at quarter time in short form versions of the game
- Rotating centre players each quarter.

Triathlon:

- Introducing time limits on race segments
- Increasing the number of drink stations
- Providing mist sprays at set points on the course.

7.2 CONSIDERATIONS FOR COMMON RISK FACTORS

Risk factor: Temperature

- Consider that a rise in temperature can increase the risk of exertional heat illness. Therefore, the higher the temperature, the greater the risk.

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Risk factor: Acclimatisation

- Consider whether participants are acclimatised to climatic conditions as risk can increase when the body is not conditioned to warm and/or humid climates.

Risk factor: Age

- Consider that children and older adults over 65 are at greater risk of heat illnesses.

Risk factor: Duration

- Consider ways of shortening matches, games, training sessions, activities, competitions and events
- Consider pre, during and post-event hydration strategies
- Consider externally cooling a participant: cold-water immersion, cooling garments, towels, fanning
- Consider internal cooling of a participant: cold fluids or ice-slurry.

Risk factor: Intensity

- Consider pre, during and post-event hydration strategies
- Consider externally cooling a participant: cold-water immersion, cooling garments, towels, fanning
- Consider internal cooling of a participant: cold fluid, ice-slurry.

Risk factor: Work to rest ratio or substitutions

- Consider modifying the work-to-rest ratio for participants and officials
- Consider ways of shortening matches, games, training sessions, activities, competitions and events.

Risk factor: Time of play between scheduled breaks

- Consider modifying the work-to-rest ratio for participants and officials.

Risk factor: Time of day

- Consider alternate times and venues

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- Consider sun protection, encourage and allow players to wear hats, sunglasses, long-sleeves, sunscreen
- Consider appropriate clothing/uniform modifications where required.

Risk factor: Type of setting

- Consider providing additional shade, shelter and cooling strategies.

Risk factor: Type of surface

- Consider implementing ways of cooling surfaces if practicable.

Risk factor: Availability of emergency services

- Consider monitoring players closely and recognise signs and symptoms of heat illness
- Have first aid responders on site for the event or activity.

8 COMMUNICATION

It is most important that there are adequate measures in place to ensure that members are made aware of all potential or actual policy activations that may occur during times of warm to hot temperature conditions. This includes changes, mitigations or cancellations that may need to be made either on or before the day of a match, game, training session, activity, competition or event.

Communicated to participants and stakeholders should include:

1. Any potential or actual changes
2. Any mitigation strategies being implemented
3. Any individual risk factors considered to increase the risk of exertional heat illness during the activity.

8.1 HEAT MANAGEMENT COMMUNICATION TIMELINE

The following timeline has been designed to assist with the effective communication to participants and stakeholders during warm to hot weather conditions.

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It is considered best practice that the trigger point to communicate potential threats of heat risk and mitigations be carried out at least one week prior to any match, game, training session, activity, competition or event.

One week before

- Identify the level of risk and need for further monitoring
- If zero risk is established – no action required outside of regular pre-event communication
- If some risk is established – communicate the following to participants and key stakeholders:
 - Hot weather has been identified as a threat to safety, we are monitoring the weather, strategies can be deployed if necessary
 - Further updates will be communicated before the event.

Three days before

- Assess the forecast temperature
- Identify level of risk and need for further monitoring
- If zero risk is established – no action required outside of regular pre-event communication
- If some risk is established – communicate the following:
 - What strategies will be used (i.e. extra shade and water)
 - Fact sheets about how individuals can reduce risks (i.e. stay hydrated)
 - Further updates will be communicated before the event
 - If cancelling, communicate message to all participants and stakeholders.

On the day

- Identify level of risk and need for further monitoring
- Make a final decision on event modification or cancellation (if needed).
- Communicate:
 - What strategies will be used (i.e. extra shade and water)
 - How individuals can reduce their own risks (i.e. stay hydrated).

After event

- Communicate success of mitigation strategies (measured by number of heat illnesses through first aid treatment)
- Communicate any learnings or future mitigation strategies
- Ask for feedback about mitigation strategies.

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8.2 COMMUNICATIONS TOOLS

8.2.1 Sample email to members

Aim: To ensure members are aware of your organisation's involvement in reducing the risk of heat related illness in sport.

Dear (insert name[s])

(insert organisation) will be identifying risks associated with heat during the upcoming (insert activities, i.e. competition name or activity name). Our aim is to reduce the risks of heat illnesses in our sport. Where possible, we want to continue to play with the appropriate mitigation strategies in place. Cancellation or postponement of events are considered a possibility, but only in extreme circumstances.

If you have any questions, please contact (insert your details).

Kind Regards,

(insert your name)

8.2.2 Sample newsletter piece to members

Aim: ensure members are aware of the SSA/club/association's involvement in reducing the risk of heat related illness in sport.

(insert organisation) will be identifying risks associated with heat during the upcoming (insert activities, i.e. competition name or activity name). Our aim is to reduce the risks of extreme heat related illnesses in our sport. This means we want to continue to play, with the appropriate mitigation strategies in place. Cancellation or postponement of events are considered a possibility, but only in extreme circumstances.

If you have any questions, please contact us on (insert your details).

8.2.3 Sample Facebook Post #1

Aim: To ensure members are aware of the SSA/club/association's involvement in reducing the risk of heat related illness in sport.

(insert organisation) will be identifying risks associated with heat during the upcoming (insert activities, i.e. competition name or activity name). Our aim is to reduce the risks of extreme heat related illnesses in our sport. This means we want to continue to play, with

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the appropriate mitigation strategies in place. Cancellation or postponement of events are considered a possibility, but only in extreme circumstances.

If you have any questions, please contact **(insert your details)**.

8.2.4 Sample Twitter Post #1

Aim: ensure members are aware of the SSA/club/association's involvement in reducing the risk of heat related illness in sport.

We are identifying risks associated with heat during the upcoming **(insert activities, i.e. competition name or activity name)**. To find out more, contact **(insert your contact details)**

9 CONTACT

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