

# Hot Weather Guidelines

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## Table of contents

<b>1</b>	<b>Introduction .....</b>	<b>1</b>
<b>2</b>	<b>Dehydration, heat exhaustion, heat stroke .....</b>	<b>1</b>
	Dehydration .....	1
	Heat exhaustion .....	1
	Heat stroke .....	1
<b>3</b>	<b>Recommended preventative strategies.....</b>	<b>2</b>
	Hydration .....	2
	Timing of games and training.....	2
	Player rest and rotation .....	2
	Clothing .....	2
	To summarise.....	2
	<b>Appendix 1 .....</b>	<b>4</b>
	Softball Australia Hot Weather Checklist .....	4
	<b>Recommended Guidelines.....</b>	<b>5</b>
	<b>Appendix 2.....</b>	<b>7</b>
	Sports Medicine Australia (SMA) 'Beat the Heat' Fact Sheet .....	7



## **1 Introduction**

- 1.1 Softball is a summer sport and it is therefore inevitable some games will be scheduled for play during extreme heat conditions. All officials, coaches, managers and umpires owe a duty of care to players and officials and should take all reasonable steps to minimise foreseeable risks which may result in injury or damage.
- 1.2 High intensity exercise in a hot environment, with associated fluid loss and elevated body temperature, can lead to dehydration, heat exhaustion and heat stroke. Heat stroke is a potentially fatal condition and must be treated immediately by a medical professional.
- 1.3 To assist organisations and individuals when considering their duty of care responsibilities, Sports Medicine Australia – South Australia (SMA SA) has produced guidelines and a checklist for reference, which Softball Australia has used to develop these guidelines.
- 1.4 The guidelines are not binding. SMA SA and Softball Australia urge all parties to use common sense and to act responsibly when running an event.
- 1.5 Cancellation of games may be appropriate even in circumstances falling outside these guidelines.

## **2 Dehydration, heat exhaustion, heat stroke**

### **Dehydration**

- 2.1 Fluid loss occurs during exercise, mainly due to perspiration and respiration. It makes an athlete more susceptible to fatigue and muscle cramps. Inadequate fluid replacement before, during and after exercise will lead to excessive dehydration and may lead to heat exhaustion and heat stroke.

### **Heat exhaustion**

- 2.2 Dehydration can lead to heat exhaustion, symptoms include:
  - Fatigue, high heart rate, light-headedness, dizziness, headache, loss of endurance and skills, confusion and nausea
  - Athletes will pass little urine, which will be highly concentrated
  - Cramps may be associated with dehydration.

### **Heat stroke**

- 2.3 Severe dehydration may lead to heat stroke. Symptoms are similar to heat exhaustion with the addition of dry skin, confusion and collapse.
- 2.4 An athlete may suffer from heat stroke even though they have not been identified as suffering from heat exhaustion. Heat exhaustion and heat stroke can still occur even in the presence of good hydration.
- 2.5 Heat stroke is a potentially fatal condition and must be treated immediately by a medical professional.



### **3 Recommended preventative strategies**

#### **Hydration**

- Drink at least 500mls (2-3 glasses) before an activity.
- Drink 200mls (1-2 glasses) every 15 minutes during activity, preferably water however diluted cordial or sports drinks may be appropriate.
- Drink at least 500mls after an activity.

#### **Timing of games and training**

- Where possible, avoid scheduling training and matches during the hottest part of the day (usually between 11am and 3pm, or noon and 4pm during daylight saving time).
- Early morning or night games minimise the likelihood of unacceptable playing conditions.

#### **Player rest and rotation**

- Consider using substitutions more often during play.
- Ensure all dugouts are equipped with shade and fluids for appropriate rest, recovery and hydration when a team is batting.
- Team managers and coaches should be especially vigilant and monitor players' physical condition in extreme temperatures.

#### **Clothing**

3.1 It is essential that everyone is made aware of the importance of:

- Wearing appropriate clothing during play
- Wearing hats or visors whilst on the field
- Appropriate application and re-application of SPF 30+ sunscreen
- The use of wet towels
- Sunglasses.

#### **To summarise**

3.2 In extreme heat conditions:

- 3.2.1 The welfare of players and umpires is paramount
- 3.2.2 On days of extreme heat coaches, players, umpires and officials should be aware of the possible risks and carefully monitor all participants. If any show signs of heat distress, swift and appropriate action must be taken.
- 3.2.3 In softball, pitchers and catchers are most at risk.
- 3.2.4 Be aware that junior players are more susceptible to heat injury, especially those doubling up in senior competitions on the same day as their junior games
- 3.2.5 Teams playing back to back games or more than two games in a day may require more breaks.
- 3.2.6 Ensure there are sufficient shaded areas at grounds for both players and spectators



- 3.2.7 Ensure there are qualified first aiders at the ground
- 3.2.8 Consider cancelling or postponing scheduled games.
- 3.2.9 Associations and clubs should reserve the right to cancel all play when extreme temperatures are forecast. Local rules should include a time for notifying participants of the cancellation of the day's games.

The *Hot Weather Guidelines Checklist* (Appendix 1) will assist in decision-making.

For further information, contact Softball Australia: [info@softball.org.au](mailto:info@softball.org.au)

The information in this guideline is of a general nature only and is not intended to be relied upon as, nor as a substitute for, specific professional advice. No responsibility for the loss occasioned to any person acting on or refraining from action as a result of any material in this guideline can be accepted.



## Appendix 1

### Softball Australia Hot Weather Checklist

This checklist will help you determine whether to commence or continue play in hot weather conditions. Allocate a score for each item – if in doubt err on the side of caution and apply a higher score. Some categories may not be applicable to your circumstance, in which case use your best judgment.

<b>1 Wet bulb globe temperature<sup>1</sup> (or equivalent)</b>		<b>7</b>	<b>Time between available drinks</b>	
<18 degrees	12		Less than 15 minutes	2
18 to 22 degrees	10		15 to 25 minutes	4
23 to 28 degrees	14		25 to 35 minutes	6
Above 28 degrees	20		35 to 45 minutes	8
			45 minutes plus	10
<b>2 Overall duration of event</b>		<b>8</b>	<b>Time of the event</b>	
Less than 30 minutes	2		Before 9am	2
30 to 60 minutes	4		After dark	2
60 minutes to 2 hours	6		9am till 11am	5
Greater than 2 hours	8		3pm till sunset	5
			11am to 3pm	10
<b>3 Individual intensity during the event</b>		<b>9</b>	<b>Surface type</b>	
Easy pace throughout	2		Water	1
Moderate pace, breaks in intensity	4		Grass	2
Moderate pace throughout	6		Boards	4
Sustained effort with some breaks	8		Sand	6
Sustained effort throughout	10		Synthetic surface	6
			Asphalt	8
<b>4 Acclimatisation of participants</b>		<b>10</b>	<b>Venue</b>	
Used to hot weather conditions	2		Indoor air conditioning	1
Used to warm weather conditions	5		Indoor no air conditioning	4
Used to cool/cold conditions	8		Outdoor	8
<b>5 Athletic ability of individuals</b>		<b>11</b>	<b>Other predisposed medical conditions of participants</b>	
Elite fitness levels	2		No	0
Good fitness level	6		Yes	6
Moderate fitness levels	6			
Low fitness levels	8			
<b>6 Age of participants</b>		<b>12</b>	<b>Other factors to consider</b>	
18 to 30	2		Shade available during breaks	Yes/No
13 to 17	5		Water freely available at venue	Yes/No
30 to 40	5		Sports trainer/first aid person on site	Yes/No
Over 40	8		Body fat of individual participants	High/Low
Under 13	8			

<sup>1</sup> To obtain the Wet Bulb Globe Temperature or equivalent, required to complete the checklist, please refer to your State or Territory [Bureau of Meteorology](#).



## Recommended Guidelines

### Point Score

Above 75	Softball Australia and SMA SA recommend you take appropriate preventative strategies to ensure the welfare of players, coaches and officials
66 to 74	<p>Softball Australia and SMA SA recommend you take appropriate preventative strategies to ensure the welfare of players, coaches and officials if:</p> <ul style="list-style-type: none"><li>• The Wet Bulb Globe Temp (or equivalent) is above 28 or</li><li>• The age of the participants gets a point value of 8</li><li>• If this is not the case and the event goes on, then:<ul style="list-style-type: none"><li>• Extra drink breaks should be allowed</li><li>• Shade should be provided</li><li>• Promotion of fluid replacement should be actively encouraged by coaches, umpires and PA announcements</li></ul></li></ul>
56 to 65	<p>Softball Australia and SMA SA recommend play may go ahead BUT</p> <ul style="list-style-type: none"><li>• Extra drink breaks should be allowed</li><li>• Shade should be provided</li><li>• Promotion of fluid replacement should be actively encouraged by coaches, umpires and public announcements</li></ul>
55 and below	Softball Australia and SMA SA recommend play with usual fluid replacement measures in place

Softball Australia and SMA SA reminds sporting groups and individuals that:

- Cancellation of events or withdrawal from participation may be appropriate even in circumstances falling outside of these recommendations.
- Individuals can use the guidelines and point scores to ascertain whether they should be involved in a particular event.



## Recommended Breaks

- 1 The Softball Australia Hot Weather Guidelines contain the criteria for invoking the heat policy, the Local Bureau of Meteorology or a Bulb Meter will be used for wet bulb/humidity readings.
- 2 Dependant on the Hot Weather Guidelines and points risk range, five-minute breaks should be implemented.
- 3 Teams playing back to back games or a third game for the day may need to take more mandatory breaks.
- 4 Teams that have spent a longer time than usual in the field may request to the plate umpire to take a longer break in the innings change over to hydrate.
- 5 Time may also be requested by a team to supply water to any player.
- 6 Team Management should bring this or any other concern in regard to heat effects on participants to the attention of the plate umpire and game management.

**Note:** In all cases when the heat policy is invoked it is mandatory to take the five-minute break.

## For Australian Championships

- 1 Teams will be advised by the Tournament Chief Umpire (**TCU**) when breaks will be taken, these may be at the completion of five innings if considered mid-range or 3<sup>rd</sup> and 5<sup>th</sup> innings in higher risk categories.
- 2 In tie breakers it will be at the completion of seven innings and every two innings after.
- 3 In U14 Regional Championships the heat policy break of five minutes will be taken after 40 minutes play regardless of the innings timing. The umpires should use their discretion if a half innings or completed innings is close to take the break then, even if this is before 40 minutes.
- 4 In high risk range the TCU may direct an earlier break.
- 5 In timed games, no additional time will be added to game times played under the Hot Weather Guidelines.



## Appendix 2

### Sports Medicine Australia (SMA) 'Beat the Heat' Fact Sheet

Sourced from the SMA website: <https://sma.org.au/resources-advice/policies-and-guidelines/hot-weather/>



#### » What is heat stress?

Vigorous exercise in sport places some people at risk of heat illness. Even in cool weather, heat illness may occur in those exercising at high intensity for more than 45 minutes. Heat illness may also occur with prolonged exposure to hot weather.

The risk of heat illness is increased in hot and humid weather because:

- People may not be able to produce enough sweat for adequate cooling.
- High humidity may prevent adequate evaporation of sweat.

Heat illness is not a trifling matter – if untreated, it can lead to the rare but life-threatening condition of heat stroke.

In hot weather, we need to take more precautions, especially as we need to exercise or play sport regularly to stay healthy.

This brochure will help to recognise and manage potentially dangerous situations that may arise during participation in sport or physical activity in hot conditions – **or where exertion levels are out of the ordinary.**

By understanding the causes of heat illness event organisers, coaches, officials, players and the general public can take common sense steps to enjoy sport and physical activity and minimise the extra risks arising during hot or humid weather. (For more details, download a copy of the Sports Medicine Australia Hot Weather Guidelines from [www.sma.org.au](http://www.sma.org.au))

#### » Keep the "fun" in Fun Runs

The highest incidence of sports heat illness occurs in fun runs of 10 km and longer.

Running at an intensity close to exhaustion, and much greater than training pace, entails a risk of heat illness. Setting targets helps achieve goals, but athletes pushing themselves close to exhaustion and who ignore the symptoms of heat illness to finish in a personal best can risk serious injury.

Run within personal limits. If feeling overstressed or unwell, slow down or stop. If you see another runner who appears unwell persuade them to stop and assist them.

#### » How do you tell if someone has heat illness?

Heat illness occurs in strenuous sports, but may also occur in activities such as cricket, golf, and lawn bowls with prolonged exposure to hot weather. During sports activities participants should "listen to their bodies". If they start to experience any of the following symptoms or signs they should stop immediately.

##### Symptoms of heat illness may include:

- Light headedness, dizziness.
- Nausea.
- Obvious fatigue.
- Cessation of sweating.
- Obvious loss of skill and coordination/clumsiness or unsteadiness.
- Confusion.
- Aggressive or irrational behaviour.
- Altered consciousness.
- Collapse.
- Ashen grey pale skin.

Heat illness in sport presents as heat exhaustion or heat stroke. Heat exhaustion is the more common sports-related heat illness. Heat stroke is rare, but it is a life threatening condition.

**Heat exhaustion.** Participants who collapse **after** exercise, are likely suffering from a post-exercise drop in blood pressure (postural hypotension), but some may have heat stroke.

**Heat stroke.** Those who show signs of altered mental function, loss of consciousness or collapse **during** exercise are likely suffering heat stroke. Sports participants showing signs of confusion, loss of skill, loss of coordination or irrational behaviour should be stopped and removed from the field immediately.



## 6. Drinking (Hydration)

Substantial amounts of water are lost through sweating when exercising vigorously in the heat. During strenuous exercise sports people often replace only half their sweat losses, but they tolerate moderate levels of dehydration well.

To minimise dehydration, drink about two cups of water in the 2 hours before exercising. During exercise lasting 60 minutes or longer, 2-3 cups (500-750 ml) of cool water or sports drink per hour are sufficient for most sports.

Dehydration is rarely the sole cause of sports heat illness, but maintaining an adequate water intake assists temperature control. Carbohydrate and electrolytes in sports drinks help to maintain performance in endurance events.

Water intake exceeding sweat loss in events lasting several hours can lead to the harmful condition of hyponatraemia (low blood sodium).

## 7. Heat waves, unusually hot weather and travelling

Extra caution needs to be taken during unseasonal heat waves or unusually hot or humid weather, or if travelling from a cool region to a hot or humid climate. In these circumstances athletes lack acclimatisation and are at increased risk of heat illness if they exercise at their cool climate intensity.

## 8. Other considerations

Age and medical conditions:

- If you have recently experienced a high temperature, infection, diarrhoea, or vomiting you should NOT take part in strenuous exercise.
- People over 65 or who suffer from a variety of medical conditions, who are taking medication or who are pregnant may experience difficulties exercising in the heat. Examples include, asthma, diabetes, heart conditions, epilepsy, overweight and obesity. Medication may also include those purchased over the counter. If you are unsure of their effect, ask your doctor or pharmacist.

## » Treating heat illness

### Heat exhaustion

Sports heat exhaustion is characterised by low blood pressure at the cessation of exercise. Victims suffer a faint-like collapse with ashen-grey skin. Athletes with heat exhaustion usually recover rapidly on lying down with legs raised. Because the difference between simple heat exhaustion and the high risk of heat stroke is not always obvious, athletes who have collapsed following strenuous exercise should be cooled as outlined opposite.

### Heat stroke

Heat stroke is a condition in which body temperature control is impaired. Heat stroke can lead to devastating injuries and is potentially fatal. The severity of complications of heat stroke increases with the duration of high body temperature. Immediate first aid is essential and life-saving. The aim is to lower body temperature rapidly.

**» Dehydration is rarely the sole cause of sports heat illness, but maintaining good hydration assists temperature control**

## If a sports participant is exhibiting signs of heat illness take the following action:

- Remove from the field.
- Lay the person down in a cool place.
- Raise legs and pelvis to improve blood pressure.
- Remove excess clothing.
- Cool by wetting skin liberally and vigorous fanning (evaporative cooling).
- Apply ice packs to groin, armpits and neck.
- Give cool water if conscious.

Persons suffering from heat exhaustion usually recover rapidly with this assistance:

- If the athlete remains seriously ill, confused, vomiting or shows signs of altered consciousness call an ambulance immediately and seek medical help. If in doubt, treat for heat stroke.

Treat for heat stroke:

- Continue cooling. If available, cool in a shallow canvas/ plastic bath of iced water (5-10 minutes.)
- If necessary cooling should continue during removal to hospital.

Note: following exercise body temperature can be measured reliably only in the rectum because the mouth and armpit seriously underestimate true body temperature. Rectal temperature greater than 41°C is dangerous. Rectal temperature should only be measured by a doctor or nurse.

## » Hats and sunscreen

Wear well-vented broad brim hats and water-soluble sunscreen for sun protection. Caps do not provide adequate sun protection.

## Guidelines to Environmental Conditions and Risk

Remember, sports heat illness can occur with high intensity exercise in cool conditions and with well-hydrated participants.

Because sports heat stress is complex, and because individual responses to heat stress vary, it is not possible to provide overall recommendations about limiting conditions to cover all sports. Since heat stress increases with increasing exercise intensity, potential for heat illness may be rated according to the exercise characteristics of the sport. The following sports are rated by decreasing levels of sustained exertion and therefore decreasing potential for risk of heat illness.

1. Endurance running in competition or training (higher intensity/higher risk)
2. Football codes and hockey
3. Tennis
4. Cricket (lower intensity/lower risk)

Individual tolerance to heat stress varies widely. Discomfort is the best personal indication of heat stress. Even in team sports individuals should pace themselves according to their personal feelings of stress. In warm weather if you feel uncomfortably hot reduce exercise intensity. In humid conditions sweat may not evaporate sufficiently for effective cooling; if your skin is dripping wet all over with sweat, reduce exercise intensity.

The following tables provide estimates of risk related to the weather and also guidelines to managing activity in order to minimise heat stress.

### » Ambient temperature

Easily understood, most useful on hot, dry days.

Ambient temperature °C	Relative humidity	Risk of heat illness	Recommended management for sports activities
15 - 20		Low	Heat illness can occur in running Caution over-motivation
21 - 25	Exceeds 70%	Low - moderate	Increase vigilance Caution over-motivation
26 - 30	Exceeds 60%	Moderate - high	Moderate early pre-season training Reduce intensity and duration of play/training Take more breaks
31 - 35	Exceeds 50%	High - very high	Uncomfortable for most people Limit intensity, take more breaks Limit duration to less than 60 minutes
36 and above	Exceeds 30%	Extreme	Very stressful for most people Postpone to cooler conditions (or cooler part of the day) or cancel

» Heat stress increases with increases in air temperature but be aware that there are not clear demarcations in risk between temperature ranges. At relative humidity levels above those indicated in the table, stress increases markedly.

Further guidance might be gained from the Wet Bulb Globe Temperature (WBGT) index. The WBGT is useful when humidity is high.

### » WBGT

Suitable for hot, humid days.

WBGT	Risk of heat illness	Recommended management for sports activities
Less than 20	Low	Heat illness can occur in distance running Caution over-motivation
21 - 25	Moderate - high	Increase vigilance Caution over-motivation Moderate early pre-season training Take more breaks
26 - 29	High - very high	Limit intensity, take more breaks Limit duration to less than 60 minutes per session
30 and above	Extreme	Consider postponement to a cooler part of the day or cancellation (allow swimming)

### » Check local weather conditions

The Bureau of Meteorology provides detailed information about temperature conditions (both ambient and WBGT), wind speed and relative humidity for many regions in Australia ([www.bom.gov.au](http://www.bom.gov.au)).

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