

# GUIDELINES.

## Guidelines for Cancelling or Modifying Sporting Events during Hot Weather.

### Why use guidelines ?

Every year in South Australia a heat wave hits our State. At that time **Sports Medicine Australia (SA Branch)** has requests from associations, individuals and members of the media asking:

#### “Should our sporting event be cancelled ?”

To assist organisations, coaches, teachers and other individuals when considering their “duty of care” responsibilities, SMA (SA) has produced this set of guidelines and a checklist.

**The guidelines are not binding and SMA SA reminds all parties that they must act responsibly.**

**Cancellation of events or withdrawal from participation may be appropriate even in circumstances falling outside these recommendations.**

**When considering cancelling or postponing a specific sporting event, there are many factors that need to be considered.**

Exercise in the heat creates competitive demands on the cardiovascular system which is required to increase the blood supply to the exercising muscles. At the same time it must regulate body temperature by increasing skin blood flow in order to produce the sweat that keeps the body cool.

High intensity exercise in a hot environment, with the associated fluid loss and elevation of body temperature, can lead to:

**DEHYDRATION - HEAT EXHAUSTION - HEAT STROKE**



The information in this brochure is of a general nature. Individual circumstances may require modification of general advice from an appropriate health professional eg Doctor, Physiotherapist, Dietitians or Sport Scientist.



## Dehydration

- 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

### Dehydration can lead to heat exhaustion:

- Characterised by a high heart rate, dizziness, headache, loss of endurance/skill/confusion and nausea.
- The skin may still be cool/sweating, but there will be signs of developing vasoconstriction, eg pale colour.
- Athletes will pass little urine, which will be highly concentrated.
- Cramps may be associated with dehydration.
- The rectal temperature may be up to 40°C and the athlete may collapse on stopping activity.

## Heat Stroke

### Severe dehydration may lead to heat stroke.

- Characterised similar to heat exhaustion, but with a dry skin, confusion and collapse.
- Heat stroke may arise in an athlete who has not been identified as suffering from heat exhaustion and has persisted in further activity.

**This is a potentially fatal condition and must be treated immediately by a medical professional.**

**Heat exhaustion/stroke can still occur even in the presence of good hydration.**

### Sports Medicine Australia (SA Branch) recommends athletes drink:

- at least 500mls (2-3 glasses) before activity
- 200mls (1-2 glasses) every 15 minutes during activity
- and more than they are thirsty for after activity. (At least 500mls)

# Factors to consider before cancelling a sporting event

**The following are factors to be considered in cancelling of sporting events. SMA has compiled a checklist to guide your association in making that decision.**

## 1. The Wet-Bulb Globe Temperature

- One way of evaluating the environment is the wet-bulb globe temperature (WBGT). The WBGT measures thermal stress. It is a more reliable indicator than ambient temperature as it takes into account humidity. The higher the humidity, the less likely the chance to cool off through the evaporation of sweat.
- WBGT is not the same as temperature in degrees Celsius, ie 35 degrees Celsius 20% relative humidity is approximately a WBGT of 27.6 degrees Celsius.

**The relation between WBGT and heat stress is summarised as follows:**

WBGT	RISK OF THERMAL INJURY
<18	Minimal
>18 but <22	Moderate
>23 but <28	High
>28	Extreme

- Obviously the greater the risk of thermal injury, the more you should be considering postponing / cancelling your event.**
- The WBGT is available through the Bureau of Meteorology. (see Obtaining WBGT) WBGT is that used by the American College of Sports Medicine. It does not take into account added stress due to direct sunlight or ventilation due to wind. It is the best available estimation at the current time.**

## 2/3. Duration and Intensity of an event

- The combination of extreme environmental conditions and sustained vigorous exercise is particularly hazardous for the athlete. The greater the intensity of the exercise the greater the risk of heat related symptoms. eg Distance running is more of a problem than stop-start team events.
- A reduction in playing time and extending rest periods with opportunities to rehydrate during the event, would help safe guard the health of athletes and participants.
- Provision of extra water for wetting face, clothes and hair is also important.**

## 4. Acclimatisation of the Participant

- Preparation for exercise under hot conditions should include a period of acclimatisation to those conditions, especially if the athlete is travelling from a cool/temperate climate to compete under hot/humid conditions.
- Regular exercise in hot conditions will facilitate adaptation to help prevent the athlete's performance deteriorating, or heat illness, during later competitions. A period of 7-10 days of 60 minutes acclimatisation activity each day provides substantial preparation for safe exercise in the heat.

## 5. Fitness Levels / Athletic Ability of Participant

- A number of physical/physiological characteristics of the athlete will influence the capacity to tolerate exercise in the heat, including body size and endurance fitness.
- In endurance events an accomplished yet non elite runner, striving to exceed their performance may suffer from heat stress. The potential for heat related illnesses will be exacerbated if they have not acclimatised to the conditions and have failed to hydrate correctly.
- An overweight and unconditioned athlete will generally also be susceptible to heat stress.
- Sports Medicine Australia (SA Branch) **recommends participants drink 500mls before activity, 200mls every 20 minutes during activity and more than they are thirsty for after activity. (At least 500mls)**  
*Please refer to the free DRINK UP brochure available from your local National Pharmacies store.*

## 6. Age and Gender of Participant

- **Female Participants** may suffer more during exercise in the heat, due to their greater percentage of body fat.
- **Young Children** are especially at risk in the heat. Prior to puberty, the sweating mechanism, essential for effective cooling, is poorly developed. The ratio between weight and surface area in the child is also such that the body absorbs heat rapidly in hot conditions.
- In practical terms, child athletes must be protected from over-exertion in hot climates, especially when required to exercise for 30 minutes or longer.
- Although children can acclimatise to exercise in the heat, they take longer to do so than adults. **Coaches should be aware of this and limit training for non-acclimatised children during exposure to hot environments.**
- **Veteran Participants** may also cope less well with exercise in the heat. Reduced cardiac function is thought to be responsible for this effect.

## 7. Rules of the Game (Hydration Opportunities)

- **Will your players be able to consume enough water during the event?**
- To avoid excessive dehydration during exercise in the heat, fluid (preferably water) should be consumed before, during and after exercise.
- Even a small degree of dehydration will cause a decrease in performance.
- Associations may consider dividing games into shorter playing periods rather than halves to allow for extra drink breaks.

## 8. Time of Day for the Event

- Avoid the hottest part of the day ( usually 11:00am - 3:00pm). Scheduling events outside of this time should be a consideration throughout any summer competition or event, regardless of the temperature.

## 9. Surface Type

- A shaded / protected grass exercise surface does not attract and retain as much heat as other surfaces (eg solid black asphalt.)
- Exercise surface type and the amount of direct sunlight vary significantly with different sporting activities and therefore must be analysed for each individual sport.

## 10. Venue of an Event.

- An air conditioned indoor venue will provide less of a problem whilst a hot indoor venue or an outside venue without shade can constitute an unacceptable environment. Air flow should also be considered.

## 11. Predisposed Medical Conditions

- It is important to know if any of your athletes have a medical condition or are taking medication that may predispose them to heat illness
- Examples include; asthma, diabetes, pregnancy, heart conditions and epilepsy. Some medications and conditions may need special allowances.

## 12. Other Factors to Consider

- Preventative measures can be undertaken to minimise heat injuries. Examples include the provision of shade, hats and appropriate sunscreen and drinking water.
- **Availability of Sports Trainers or First Aid Personnel.**
- It is important to have trained personnel available to manage heat injuries.
- In situations where heat problems may be expected, an experienced medical practitioner should be present.
- **Heat stroke is potentially life threatening. Any indication of this condition should be immediately referred for Medical Assessment.**



## Complete your checklist

Determine the point score for each item.

(Some categories may not be exactly to your needs so you will need to use common sense, if in doubt choose higher value in order to err on the side of caution.)

### 1. Wet bulb globe temperature.

<18degrees	2
18 to 22 degrees	10
23 to 28 degrees	14
Above 28 degrees	20

### 2. Overall duration of event.

Less than 30 min.	2
30 to 60 minutes	4
60 min. to 2 hours	6
Greater than 2 hours	8

### 3. Individual Intensity during the event.

Easy pace throughout	2
Moderate pace, breaks in intensity	4
Moderate pace throughout	6
Sustained effort with some breaks	8
Sustained effort throughout	10

### 4. Acclimatisation of participants.

Used to hot weather conditions	2
Used to warm weather conditions	5
Used to cool / cold conditions	8

### 5. Athletic ability of individuals.

Elite fitness levels	2
Good fitness level	6
Moderate fitness levels	6
Low fitness levels	8

### 6. Age of participants.

18 to 30	2
13 to 17	5
30 to 40	5
Over 40	8
Under 13	8

### 7. Time between available drinks.

Less than 15 minutes	2
15 to 25 minutes	4
25 to 35 minutes	6
35 to 45 minutes	8
45 minutes plus	10

### 8. Time of the event.

Before 9am	2
After dark	2
9am till 11am	5
3pm till sunset	5
11am to 3pm	10

### 9. Surface Type.

Water	1
Grass	2
Boards	4
Sand	6
Synthetic surface	6
Asphalt	8

### 10. Venue.

Indoor air conditioning	1
Indoor no air conditioning	4
Outdoor	8

### 11. Other predisposed medical conditions of participants.

No	0
Yes	6

### 12. Other factors to consider.

Shade available during breaks	Yes / No
Water freely available at venue	Yes / No
Sports trainer/first aid person on site	Yes / No
Individual body fat of participants	High / Low

**Total of Your Sport**

## Recommended Guidelines for Sport

### Point Score

#### Above 75

**SMA SA recommend you cancel your event.**

#### 66 to 74

**SMA SA recommend you cancel or reschedule your event if**

- the WBGT is above 28 or
- the age of participants gets a point value of 8.  
**If this is not the case and the event goes on then:**
- Extra drink breaks should be allowed.
- Shade should be provided.
- Promotion of fluid replacement should be actively encouraged.  
(eg Through PA systems or umpires.)

#### 56 to 65

**SMA SA recommend play may go ahead BUT**

- Extra drink breaks should be allowed.
- Shade should be provided.
- Promotion of fluid replacement should be actively encouraged.  
(eg Through PA systems or umpires.)

**55 and below SMA SA recommend play with usual fluid replacement measures in place. SMA 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.**

## Obtaining WBGT

### 1) Metfax:

To obtain the **WET BULB GLOBE TEMPERATURE**

please follow the following steps on your phone/fax or computer fax program.

1. On your fax handset or computer dial 8362 0340 to connect to the Bureau's Metfax system.
2. When asked to dial in the item number dial in 1065
3. Press 1 to select this item
4. Press# to prompt the next step
5. After the tone press the START/RECEIVE Button on your fax or computer
6. After the fax has been received disconnect by hanging up.

### 2) Web-site:

[www.bom.gov.au/products/IDS65004.shtml](http://www.bom.gov.au/products/IDS65004.shtml) or visit [www.smasa.asn.au](http://www.smasa.asn.au)

**The forecasts cover SA metropolitan and country**

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