



**HOT WEATHER POLICY** - Adapted from Sports Medicine Australia hot weather guidelines.

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Policy credit: Sports Medicine Australia has produced this set of guidelines. These guidelines are based on the latest research as well as the expertise of SMA's medical and scientific members. The guidelines have been adopted and adapted to the specific demands of the sport of Triathlon in the Northern Territory.

Background: Most people understand the importance of physical activity for good health but it is just as important that, when levels of activity rise, the risk of harm is minimised. And it is even more important for those who have not recently or regularly taken part in sport or physical activity.

These guidelines are not binding, but SMA reminds all parties that they must act responsibly. We encourage a common sense approach and consideration of the comfort and well-being of all individuals including participants and officials. Modification or cancellation of events, training or withdrawal from participation may be appropriate even in circumstances falling outside these recommendations.

Triathlon clubs need to be aware of the difficulty of settling "one size fits all" guidelines in this area. For normally healthy active people, the dangers from heat illness are likely to arise from prolonged, high intensity exercise such as standard distance and long course triathlons lasting over 60 minutes in duration.

One area of higher risk for organisers of community-level participation events, is in the conduct of come and try races. These events are more likely to see new participants push themselves beyond their normal boundaries of activity, and organisers need to take extra precautions.

However, at any time, high intensity exercise in a hot environment, with the associated elevation of body temperature, can lead to heat illness. Heat illness in sport presents as heat exhaustion or the more severe heat stroke. The following paragraphs outline the accepted definitions and appearance of heat exhaustion and heat stroke.

**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).
- The rectal temperature may be up to 40°C and the athlete may collapse on stopping activity. Rectal temperature should only be measured by a doctor or nurse.

To avoid heat exhaustion, if people feel unwell during exercise they should immediately cease activity and rest. Further benefit comes if the rest is in a shaded area with some passing breeze (from a fan if necessary) and the person takes extra hydration. Misting or spraying with water can also help. Race directors should discuss the possibility of heat exhaustion at pre-race briefings.

### **Heat stroke**

- Characteristics are 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.
- Core temperature measured in the rectum is the only reliable diagnosis of a collapsed athlete to determine heat stroke.

This is a potentially fatal condition and must be treated immediately. It should be assumed that any collapsed athlete is at danger of heat stroke. The best first aid measures are “Strip/Soak/Fan”:

- strip off any excess clothing;
- soak with water;
- fan;
- ice placed in groin and armpits is also helpful.

The aim is to reduce body temperature as quickly as possible. The athlete should immediately be referred for treatment by a medical professional.

***Important: heat exhaustion/stroke can still occur even in the presence of good hydration.***

### **Dehydration**

Dehydration is fluid loss which 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. To avoid dehydration, Sports Medicine Australia recommends that:

- athletes drink approximately 500 mls (2 glasses) in the 2 hours prior to exercise;
- during exercise longer than 60 minutes, 2-3 cups (500-700ml) of cool water or sports drink are sufficient for most sports.
- after exercise replenish your fluid deficit to ensure that you are fully re- hydrated, but not over-hydrated.
- refer to SMA’s free DRINK UP brochure available as a web download at <http://www.smartplay.com.au> or from your local National Pharmacies store.

Points for Triathlon Clubs and Race Directors to consider:

- Will your players and officials be able to consume enough water during the event?
- Even a small degree of dehydration will cause a decrease in performance.

- Take care not to over-hydrate. Drinking too much fluid can lead to a dangerous condition known as hyponatraemia (low blood sodium). Aim to drink enough to replace lost fluids, but not more than that.

How should Triathlon clubs apply these guidelines in their general assessment of risk, and in their race and training planning? The following are factors to consider before cancelling or modifying a sporting event or training, and organisers need to remember not only to take racing triathletes into account, but also technical officials, traffic management personnel, water safety and First Aid officials and other volunteers. The following tables provide estimates of risk related to the weather and also guidelines to managing activity in order to minimise heat stress.

### **A. Environmental Factors:**

**1. Temperature:** Ambient temperature is the most easily understood guide available, and is most useful on hot, dry days.

<b>Ambient temperature</b>	<b>Relative humidity</b>	<b>Risk of Heat Illness</b>	<b>Possible management for sustained physical activity</b>
15 – 20C	Low	Heat illness can occur in distance running	Caution over-motivation
21 – 25C	Exceeds 70%	Low - moderate	Increase vigilance. Caution over-motivation
26 – 30C	Exceeds 60%	Moderate	Moderate early pre-season training. Reduce intensity and duration of training or racing.
31 – 35C	Exceeds 50%	High – very high	Uncomfortable for most people. Limit intensity, take more breaks. Limit duration to less than 60 minutes per session and/or start races very early in the day so as to give participants the opportunity to finish before ambient temperature reaches this level.
36C and above	Exceeds 30%	Extreme	Very stressful for most people. Postpone to a cooler conditions (or cooler part of the day) or cancellation.

## **2. Duration and intensity of an event**

The combination of extreme environmental conditions and sustained vigorous exercise is particularly hazardous for the triathlete. The greater the intensity of the exercise or the duration of the race, the greater the risk of heat related symptoms

Race organisers need to ensure that they provide:

- Opportunities to rehydrate during the event, to help safeguard the health of participants.
- Extra water for wetting face, clothes and hair, eg: ice sponges, cups of cold water for tossing over the head and body

## **3. Conduct of competition and training**

Coaches may consider alternative training times and venues during hot weather; early mornings are recommended for running and cycling training, and racing in hot climates. Coaches and athletes should remember that even five minutes rest can cause a significant reduction in core body temperature.

## **4. Time of Day**

Avoid the hottest part of the day (usually 10 am-4pm). Scheduling events outside this time should be a consideration throughout any summer competition, training or event, regardless of the temperature.

## **5. Local Environment**

Radiant heat from surfaces such as black asphalt or concrete can exacerbate hot conditions. The type of exercise surface and the amount of sunlight vary significantly with different sporting venues and therefore must be analysed for each individual event.

Remember, air movement decreases heat stress. However, a following wind can increase problems for runners or cyclists by actually reducing air movement.

## **B: Host (personal) factors**

### **1. Clothing**

The type of clothing worn is vital in minimising health risks associated with exercise in heat. Fabrics that minimise heat storage and enhance sweat evaporation should be selected.

Light weight, light coloured, loose fitting clothes, made of natural fibres or composite fabrics with high wicking (absorption) properties, that provide for adequate ventilation are recommended as the most appropriate clothing in the heat. This clothing should complement the existing practices in Australia that protect the skin against permanent damage from the sun. This should apply to the clothing worn by athletes, technical and other officials and volunteers.

**Protective clothing:** If clothing is worn for protective reasons, ensure that it is worn only while training and competing in hot weather. Some examples include cycling helmets and technical official vests. Remove non-breathable clothing as soon as possible if the participants or officials are feeling unwell in hot conditions. Start cooling the body immediately via ventilation and/or a cool spray such as a soaker hose or a hand-held spray and a fan.

## **2. Acclimatisation of the participant**

Acclimatisation of the participant includes technical and other officials and volunteers as well as triathletes. 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 in hot/humid conditions. It has been reported that children will acclimatise slower than adults.

Regular exercise in hot conditions will facilitate adaptation to help prevent performance deteriorating, or the athlete suffering from heat illness, during later competitions. Sixty minutes acclimatisation activity each day for 7-10 days provides substantial preparation for safe exercise in the heat.

## **3. 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, accomplished but non-elite triathletes, striving to improve their performance, may suffer from heat stress. The potential for heat-related illnesses would be exacerbated if they have not acclimatised to the conditions and have failed to hydrate correctly.

Overweight and unconditioned athletes, officials and volunteers will generally also be susceptible to heat stress.

## **4. Age and gender of participant**

Female participants may suffer more during exercise in the heat because of 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 with intense or endurance exercise. 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.

NB: Children tend to have a more “common sense” approach to heat illness than adults. They “listen to their bodies” more and will usually slow down or stop participating if they feel distressed in the heat. On no account should children be forced to continue sport or exercise if they appear distressed or complain about feeling unwell.

Veteran participants may also cope less well with exercise in the heat. Reduced cardiac function is thought to be responsible for this effect.

## **5. Predisposed medical conditions**

It is important to know if participants (triathletes and volunteers) have a medical condition or are taking medication that may predispose them to heat illness. Examples of illnesses that will put the participant or official at a high risk of heat illness include asthma, diabetes, pregnancy, heart conditions and epilepsy. Some medications and conditions may need special allowances.

Participants and officials who present with an illness such as a virus, flu or gastro or who are feeling unwell are at an extreme risk of heat illness if exercising in moderate to hot weather.

Participants or officials who may be affected by drugs or alcohol may be at an extreme risk of heat illness if exercising in moderate to hot weather.

SMA has produced Pre-exercise Health Check Guidelines. These should be used if pre-existing medical conditions are suspected or if the participant has no recent record of activity. The Guidelines can be downloaded from [www.sma.org.au](http://www.sma.org.au).

#### **6. Other factors to consider**

Preventative measures can be undertaken to minimise heat injuries. Examples include the provision of shade, hats, appropriate sunscreen, spray bottles and drinking water. It is important to have trained personnel available to manage heat injuries and designated recovery areas for patients. 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.