



**SURF LIFE SAVING
QUEENSLAND**

**ADM17
Surf Life Saving Queensland
Administration**

DATE 6 January 2014
SUBJECT Heat Management
Approved by SLSQ Board

The following policy statement was adopted by flying minute dated 23 December 2013 and adopted as Surf Life Saving Queensland Policy:

Introduction:

Human thermal comfort depends on environmental and personal factors. The four environmental factors are airflow (wind), air temperature, air humidity, and radiation from the sun and nearby hot surfaces. The personal factors are the clothing being worn and the person's level of physical activity. Thermal sensation is also significantly affected by acclimatisation/adaptation: people living in hot climates have been shown to be comfortable at higher temperatures than those living in cooler climates.

In hotter conditions the body must shed heat to maintain thermal equilibrium. The cooling effect of evaporation of sweat from the skin becomes an important factor. The efficiency of this cooling depends on the humidity of the air. A high humidity reduces the effectiveness of evaporative cooling significantly. The amount of clothing will also affect this cooling efficiency due to its restriction of the air flow over the skin. Fabrics with low vapour permeability (those that don't "breathe") will increase the humidity of air near the skin.

Purpose:

Surf Life Saving Queensland (herein after "SLSQ") recognizes that heat stress and other adverse effects may result from physical activity in high temperatures.

The purpose of this policy is to provide a framework for the effective management of activities where because of high temperatures, members maybe at an elevated risk of heat illness.

The objective is to modify the format of the activity so it may continue on a basis which minimizes the risk of heat stress to participants.

Ultimately the primary responsibility for the safety and wellbeing of each individual lies with that individual and in the case of minors, with the responsible supervisor, coach or guardian.

Application:

This policy applies to any and all activities conducted by SLSQ, affiliated clubs and branches.

Definitions:

- **Heat Illness** includes but is not limited to Heat Exhaustion, Heat Stroke and Dehydration
- **Participant(s)** includes employees, members and volunteers who are individuals if they involved in the activity being undertaken.

- **Responsible Person(s)** includes any person who makes, or participates in making decisions that affect the whole or a substantial part of the activity
- **Ambient Temperature** is the air temperature measured by a dry bulb thermometer not taking into account humidity or wind.
- **Wet Bulb Globe Temperature (WBGT)** is a composite temperature used to estimate the effect of temperature, humidity, wind speed and radiation (sunlight). The approximation used by the Bureau of Meteorology is derived from the following formula: $WBGT = 0.567 \times Ta + 0.393 \times e + 3.94$ where: Ta = Dry bulb temperature (°C) and e = Water vapour pressure (hPa) [humidity]

Legislative Framework:

Work Health and Safety Act 2011

Work Health and Safety Regulation 2011

POLICY

This policy provides a framework of prescribed actions in relation to a range of conditions that may lead to heat illness for SLSQ, Branch and Club personnel.

Heat illness can occur when a participant exercises vigorously in hot conditions. It may also occur with prolonged exposure to hot weather, even if activity is low intensity.

Heat illness occurs when the body cannot sufficiently cool itself. Factors that contribute to this include;

- temperature
- humidity
- amount of air movement
- clothing
- physical activity (metabolic heat load).

Control measures may include suspension, cancellation, rescheduling and/or the imposition of restrictions on activities where it is believed temperatures on the day warrant such measures. Modification or cancellation or withdrawal from participation may be appropriate even in circumstances that fall outside the nominated thresholds and conditions.

SLSQ expects all participants in all activities conducted by SLSQ and affiliated Branches and Clubs to abide this policy.

Awareness

SLSQ will publish this policy and make it available to all members for electronic download.

In preparation for any activity, a risk assessment is to be completed in accordance with SLSQ guidelines. If prior to or during any activity, it becomes apparent that any heat factors that may impact on participants are likely to be

experienced, including but not limited to high temperatures and/or humidity, the responsible persons associated with the activity must exercise due diligence and;

- Ensure adequate shade and water is available
- Be prepared to implement heat management measures in line with this policy
- Have an effective mechanism to monitor temperature and humidity (available from the Bureau of Meteorology at <http://www.bom.gov.au/products/IDQ65214.shtml>)
- Alert participants of the following;
 - The potential for adverse heat effects
 - How they can protect themselves from the effects of heat
 - The mechanism for input/feedback regarding concerns/impact of the heat being experienced

An appropriate record for the activity must include all actions undertaken in relation to heat management.

Factors to consider before cancelling or modifying an activity

The following are modified from recommendations provided by Sports Medicine Australia in their “Hot Weather Guidelines” for sporting clubs and associations conducting sporting events in hot environments (Sports Medicine Australia, 2007).

Environmental

1. Temperature

Ambient temperature is most useful reference on hot dry days.

| Ambient Temp °C | Relative humidity | Risk | Required action for vigorous sustained activity |
|-----------------|-------------------|----------------|--|
| 15-20 | | Low | |
| 21-25 | <60% | Low-Moderate | Increase vigilance |
| 26-30 | <50% | Moderate | Reduce intensity and duration of activity, take more breaks |
| 31-35 | <30% | High-Very High | Limit duration of activity to less than 60 minutes |
| 36+ | <25% | Extreme | Consider postponement to cooler part of the day or cancelation |

WBGT is the most suitable reference for hot humid days

| WBGT | Risk | Required action for vigorous sustained activity |
|-------|------------------|---|
| <20 | Low | |
| 21-25 | Moderate – High | Reduce intensity and duration of activity, take more breaks |
| 26-29 | High – Very High | Limit duration of activity to less than 60 minutes |
| 30+ | Extreme | Consider postponement to cooler part of the day or cancelation (allow swimming) |

The Bureau of Meteorology (BOM) produces ambient and WBGT readings for many locations in Australia (<http://www.bom.gov.au/products/IDQ65214.shtml>).

2. Duration and intensity

- The greater the intensity of the exercise, the greater the risk of heat related symptoms
- Rotating participation (including Trainers, Assessors, Managers and Officials)
- Reducing activity time for any continuous and strenuous activity
- Extending rest periods

3. Time of day

- Where possible, avoid the hottest part of the day (usually 11 am – 3 pm)

4. Local Environment

- Reduce exposure to direct sunlight
- Avoid radiant heat which can exacerbate hot conditions
- Consider airflow

Personal Factors

1. Clothing

- Light weight, light coloured, loose fitting clothes, 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 sun safe policy.
- If protective clothing such as wetsuits are worn, ensure that it is worn only while undertaking the activity. Remove non-breathable clothing as soon as possible if the participants or officials are feeling unwell. Start cooling the body immediately; cool water immersion (including in the ocean so long as not exposing to other risks) is the best way to reduce core temperature, alternatively ventilation and/or a cool spray such as a soaker hose or a hand-held spray and a fan.

2. Acclimatisation of the participant

- Preparation for exercise under hot conditions should include a period of acclimatisation to those conditions, especially if the participant is travelling from a cool/temperate climate to hot/humid conditions.
- It has been reported that children will acclimatise slower than adults.

3. Fitness levels/athletic ability of participant

- A number of physical/physiological characteristics of the participants will influence their capacity to tolerate exercise in the heat, including body size and endurance fitness.
- Overweight and unconditioned participants, officials and volunteers will generally be more susceptible to heat illness

4. Age and gender of participant

- Female participants may suffer more during exercise in the heat
- Young children are especially at risk in the heat
Special attention must be paid to children as they have reduced capacity to cope with variations in temperature and are poor at hydrating.

5. Predisposed medical conditions

- Medical conditions or medication may predispose some participants to heat illness. Examples of illnesses that will put the participant at a high risk of heat illness include asthma, diabetes, pregnancy, heart conditions and epilepsy.
- Participants 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.

Heat Management Measures

Hydration

- In the 2 hours prior to exercise participants should drink approximately 500mls
- During exercise longer than 60 minutes consumption of 500-700mls of cool water or sports drink is usually sufficient
- After exercise participants need to replenish fluid deficit to ensure full hydration

Modification, postponement and cancelation of the activity

Responsible persons must consider modification, postponement or cancelation of the activity whenever heat can impact on the safety and wellbeing of the participants. In determining the action to be taken the factors outlined above must be taken into account and used to determine reasonable and practical measures to limit the risk of heat illness.

Management measures may include but are not limited to;

- Reducing the intensity of the activity
- Providing for increased rest breaks
- Providing for interchange and hydration opportunities
- Facilitating cool down through increasing shade areas; increasing air flow e.g. use of fans; provision of cooling showers, cold water, ice vests, etc.
- Scheduling activities for cooler times of the day
- Relocation to reduce direct sun, reduce radiant heat, increase airflow, etc.
- Exclusion, delay or cancelation of activity for at risk participants
- Postponement and/or cancelation of activities involving increased risk
- Total postponement and/or cancelation of activity

Preventative measures can be undertaken to minimise heat injuries. Examples include the provision of shade, hats, appropriate sunscreen, spraybottles 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.

Resources

Sports Medicine Australia (2007). Hot weather guidelines. Retrieved from <http://sma.org.au/wp-content/uploads/2009/05/hot-weather-guidelines-web-download-doc-2007.pdf>

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