



## Heat Policy & Procedures

Mountain District Netball Association

Mountain District Netball Association has formulated this heat policy to minimise the risk of injury, illness and possible death in netball by assisting administrators, officials, coaches and participants to recognize and manage potentially dangerous situations. Factors which impair the body's ability to dissipate heat are:

1. high ambient temperature;
2. solar radiation;
3. humidity (which compromises the efficacy of sweating); and
4. dehydration.

These factors significantly increase the risk of heat illness occurring.

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

### **Background:**

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 varies with exercise intensity, potential for heat illness may be categorised according to the exercise characteristics of the sport. The risk of heat illness from vigorous exercise or high intensity sport is significant. It can range from cramps, through heat exhaustion to heat stroke, coma, and death (Mitchell 1994).

During competition, competitors may produce 15 - 20 times the heat they produce at rest. Dissipation of this excess heat is primarily achieved through sweating. If the body's ability to dissipate heat is compromised, core temperature in an average size individual may rise by one degree Celsius for every five minutes of exercise if no temperature-regulating mechanisms are activated (Nadel 1977). If an individual's core temperature is above 40 degrees Celsius (normal 37 degrees) the risk of heat injury is significant. Rectal temperature higher than 41 degrees Celsius is dangerous.

Factors to consider before canceling or modifying a sporting event or training.

(Not only will players be taken into account but also umpires, officials and volunteers.) The following tables provide estimates of risk, related to the weather and also guidelines to managing activity in order to minimize heat stress

### **Background:**

Wet Bulb Globe Temperature (WBGT) is the best measure of heat strain currently available.

WBGT is not the same as air temperature as the WBGT accounts for the levels of humidity, radiation, wind movement and air temperature.

Measuring WBGT is done using a Wet Bulb Globe Thermometer. These devices are not readily available and are costly. In light of this Mountain District Netball Association will check regularly with the Bureau of Meteorology to minimise the risk of heat illness and injury.

## **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>Recommended management for sports activities</b>
15 – 20		Low	Heat illness can occur in distance running Caution over-motivation
21 – 25	Exceeds 70%	Low – moderate	Increase vigilance. Caution over motivation
26 – 30	Exceeds 60%	Moderate	Reduce Intensity and duration of play. Take longer breaks
31 – 35	Exceeds 50%	High – very high	Uncomfortable for most people. Limit intensity, take longer breaks. Further limit on duration of play
36 and above	Exceeds 30%	Extreme	Very stressful for most people. Cancel games

## **OR**

WBGT:

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

<b>WBGT</b>	<b>Risk of Thermal Injury</b>	<b>Recommended management for sports activities</b>
Less than 20	Low	Heat illness can occur in distance running Caution over-motivation
21 – 25	Moderate to high	Increase vigilance. Caution over motivation Moderate intensity, game duration and take longer breaks
26 – 29	High – Very High	Limit intensity. Further limit on duration of game and take longer breaks
30 and above	Extreme	Cancel games

### **Player rest and rotation**

In conditions of high risk participants should be provided opportunities to rest through the use of player substitution. The period of rest should be determined by the ambient temperature and WBGT at the time of the event or activity. For ambient temperatures greater than 26 and less than 30 degrees Celsius and for WBGT temperatures greater than 21 degrees Celsius and less than 25 degrees Celsius, all players should be rested for at least 10% of the period they would normally participate. For situations where the ambient temperature is greater than 31 degrees and less than 35 degrees Celsius and the WBGT is greater than 26 degrees Celsius and less than 29 degrees Celsius, all players will be rested for at least 25% of the period in which they would normally participate. This may be achieved by rotation of players through an interchange bench or via the reduction in the regular playing time for all players.

The Bureau of Meteorology (BOM, produces ambient and WBGT readings for many locations in Australia. These will be checked regularly as a guide for the relative risk of Knox Regional Netball Centre.

[www.bom.gov.au/products/IDS65004.shtml](http://www.bom.gov.au/products/IDS65004.shtml) or by clicking the 'Local Hot Weather alerts' button at [www.sma.org.au](http://www.sma.org.au).

NB: It is important to watch for unusual 'heatwave' conditions or variations from the average temperature for the time of year. This is one situation where there may be a greater danger of heat illness.

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 tables, stress increases markedly.

### **2. Duration and Intensity of Activity:**

- Player and official rotation may also be considered
- Reducing playing time and extending rest periods with opportunities to rehydrate during the game helps safeguard the health of participants
- Provision of extra water for wetting face, clothes and hair is also important

### **3. Conduct of competition (hydration and substitution opportunities):**

- Games will be divided into shorter playing quarters
- Breaks will be longer
- Officials as well as player's welfare will be considered
- **Hydration:**
- The more a participant sweats, the more fluid he/she must consume to avoid dehydration. High levels of dehydration may increase the risk of heat stress. To diminish the risk of heat stress fluid should be consumed before, during and after activity.
- It is recommended participants drink at least 500 ml within 2 hours of playing or training to promote adequate hydration and allow time for excretion of excess water.
- During competition games, training or strenuous activities it is recommended that participants drink fluid at regular intervals to replace water lost through sweating.

Participants should aim to drink at least 150ml every 15 minutes, however this may vary dependent on the rate of sweating. Fluid taken should be cooler than the air temperature.

- Water is considered an adequate fluid option for activities lasting up to one hour. Participants competing in games, events or training activities exceeding one hour are recommended to use carbohydrate based sports drinks as a means of replacing fluids, carbohydrates and electrolytes lost during prolonged activity. These drinks include commercially available sports drinks.  
Players should be encouraged to drink fluids in breaks between quarters .  
Cool water or other recommended fluids should be made available to consume during breaks in games and training sessions  
Players are encouraged to use personal drink bottles for use at games and training sessions

#### **Shade and Sun Protection**

Adequate shade is necessary for players whilst not actively participating in the game. This is to assist with recovery and to provide adequate protection from the sun.

Sunscreen is also an important element of sun protection, particularly given netball's clothing culture of short/no sleeves. Sunscreen should be applied before, and at recommended, regular intervals throughout the game.

#### **1. 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.

#### **2. Other Factors considered:**

- Preventative measures should be undertaken to minimize heat injuries. Examples include the provision of shade, hats, appropriate sunscreen, spray bottles and drinking water
- Trained personnel will be available to manage heat injuries and provide designated recovery areas for patients