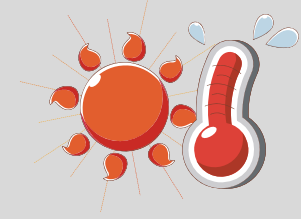


# Research Project – Heat Policy for BCNA



Scope was to research material to gain best advice for Heat Policy at Bankstown City Netball Association.



Research material –

- Mention was made of Work Cover which is not appropriate for this study as heat polices are covered off pertinent to the Award or Work Place Agreements and apply to adults only
- Netball Australia's – Junior Netball Policy
- Sports Medicine Australia (as recommended by the Australian Institute of Sport) – Heat Guidelines
- Weather Statistics from the Bureau of Meteorology March 2010
- Sporting Associations competition periods compiled by Meinema Carn

# Relevant information contained in Netball Australia (NA) comprehensive Junior Netball Policy

- **Environment**

- NA acknowledge that ‘extreme’ weather conditions do apply and that “extreme weather conditions (e.g. heat, cold, rain and wind) make it best to postpone training and/or competition”.
- Specifically to ‘sun protection’ NA’s policy is that ‘organisers of netball competitions and events have a responsibility to protect young people, **to the greatest extent practical**, from the dangers of sun exposure. Young children should be **encouraged or obligated to wear appropriate clothing and soft brimmed visors, and apply a 30+ sunscreen on exposed skin.**

- **Body Temperature Regulation**

- Compared with adults, young people have a larger skin surface to body mass ratio, and their sweat glands are immature, **making them more susceptible to heat loss and gain.** In conditions of extreme weather temperature and humidity, **netball sessions should be shortened or cancelled.**
- Young people who are most at risk of heat-related decreases in performance are those who are lacking cardio-vascular fitness, are high in body fat, are poorly acclimatised and in poor health.

- **Fluid Balance**

- Fluid balance is important at any time but needs more attention in some weather conditions. Young people do not instinctively drink enough to replace fluids lost during activity. **They should be reminded to drink before, during and after training and competition.**

- **Prevention**

- Young people should be monitored carefully because they may not recognise warning signs and symptoms such as fatigue, muscle soreness, head aches and mood changes. Move over, young people may not effectively communicate such a problem.

# Sports Medicine Australia (SMA)

## Information from 'Hot Weather Guidelines'

### Most asked question to SMA –

- Should our sporting event be modified or cancelled?
  - Should our training be modified or cancelled?
  - When is it safe to play sport or be physically active?

(Footnote: At the Council Meeting no mention was made about **training** which is interesting in itself – do we just automatically cancel it without realising it?)

“There are many factors to be considered when clubs and associations are contemplating modifying, postponing or cancelling sporting events or training. Sporting organisations need to be aware of the difficulty of settling “one size fits all” guidelines in this area. For normally healthy active people, the only dangers from heat illness are likely to arise from **high intensity exercise** such as endurance running. **Most community sport does not reach this level for periods long enough to cause serious harm.** Many types of sport, such as cricket and tennis, are usually safe at higher temperatures because of the lower intensity of the play.

# Heat illness in sport presents as **Heat Exhaustion** or the more severe **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 (e.g. Pale colour)
- The rectal temperature may be up to 40 degrees and the athlete may collapse on stopping activity.

## **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**

## **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.

# Factors to consider before cancelling or modifying a sporting event

## Environmental Factors:-

1. Temperature – measured by Ambient temperature (hot, dry) or Wet Bulb Globe Temperature (when humidity is high)
2. Duration and intensity of event
3. Conduction of competition
4. Time of day
5. Local environment

## Host (personal) Factors:-

1. Clothing
2. Acclimatisation of the participant
3. Fitness levels / athletic ability of participant
4. Age and gender of participant
5. Predisposed medical conditions
6. Other factors to consider

# 1. Ambient Temperature

(most appropriate guide for our purposes)

Ambient Temp	Relative Humidity	Rick of Heat Illness	Recommended management
15 to 20		Low	Heat illness can occur in distance running. Caution over-motivation
21 to 25	Exceeds 70%	Low – Moderate	Increase vigilance and caution over-motivation
26 to 30	Exceeds 60%	Moderate	Moderate early pre-season training. Reduce intensity and duration of play/training. Take more breaks
31 to 35	Exceeds 50%	High – very high	Uncomfortable for most people. Limit intensity, take more breaks. Limit duration to less than 60 mins per session.
35 and above	Exceeds 30%	Extreme	Very stressful for most people. Postpone to a cooler conditions or cancellation

Heat stress increases with increases in air temperatures but be aware that there are no clear demarcations in risk between temperature ranges. At relative humidity levels above those indicated in the table, stress increases markedly

## 2. Duration and intensity of an event

### 3. Conduct of competition and training

- 2 The combination of extreme environmental conditions and sustained vigorous
- 2 exercise is particularly hazardous for the athlete. The greater the intensity of
- 2 the exercise, the greater the risk of heat related symptoms e.g. distance
- 2 running is more of a problem than stop-start team events.
- 2 Reducing playing time and extending rest periods with opportunities to
- 2 rehydrate during the event would help safeguard the health of participants.
- 2 Provision of extra water for wetting face, clothes and hair is also important.
- 3 Associations may consider dividing games into shorter playing periods rather than
- halves to allow for extra breaks

*Alternatives have shorter playing period and extra rest periods or shorten the period of play completely to half game which would be in line with our catch-up wet weather policy.*

- 3 **Remember even five minutes rest can cause a significant reduction in core temperatures**

## 4. Time of Day

## 5. Local Environment

- 4 Avoid the hottest part of the day (usually 11am to 3pm)
- 5 Radiant heat from surfaces such as black asphalt (*hello – should we consider moving to the grass*) can exacerbate hot conditions
- 5 The type of exercise surface and the amount of sunlight vary significantly with different sporting activities and therefore must be analysed for each individual sport.
- 5 **An outside venue without shade can not be considered an acceptable environment.**
- 5 *Please note for State League there are also guidelines covering hot indoor venues as well.*

*Footnote - please consider that children have their 'breaks' during this time frame at school and are required to wear hats in the playground with the 'not hat no play' mandate – you think they don't think it is odd to play in the sun without a hat. Children who are new to the sport would associate the word netball with 'hot hot hot' and I don't like that!*

# Host (personal) Factors

## 1. Clothing

## 2. Acclimatisation of the participant

- 1 Type of clothing is vital in minimising health risks associated with exercise in heat.
- 1 Fabrics that minimise heat storage and enhance sweat evaporation should be selected.
- 1 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 (*clearly we meet none of these requirements*)
- 2 Preparation for exercise under hot conditions should include a period of acclimatisation to those conditions.
- 2 **It has been reported that children will acclimatise slower than adults.**
- 2 Regular exercise in hot conditions will facilitate adaptation to help prevent performance deteriorating, or the athlete suffering from heat illness, during later competitions. **60 minutes acclimatisation activity each day for 7-10 days provides substantial preparation for safe exercise in the heat**

### 3. Fitness levels

## 4. Age and gender of participant

- 3 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.
- 3 Overweight and unconditioned athletes, umpires, officials and volunteers will generally also be susceptible to heat stress
- 4 **Female participants** may suffer more during exercise in the heat because of their greater percentage of body fat
- 4 **Young children are especially at risk in the heat.**
- 4 In practical terms, children must be protected from over-exertion in hot climates.
- 4 Although children can acclimatise to exercise in the heat, they take longer to do so than adults
- 4 However children tend to have a more common sense approach to heat illness than adults and will usually slow down or stop playing if they feel distressed in the heat. **On no account should children be forced to continue sport or exercise** if they appear distressed or complaining about feeling unwell.
- 4 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 (this is particularly alarming)

- It is important to know if athletes, umpires, officials or 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. *(During my time with the City to Surf every participant who died from Heat Stroke had suffered with a viral condition in the weeks leading into the event).*
- 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.
- It is important to have trained personnel available to manage heat injuries and designated recovery areas .
- In situations where heat problems **may be expected**, an experienced medical practitioner should be present.

# Monthly Weather Statistics taken at Bankstown Airport

STATISTIC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
Mean Max Temp (C)	28.1	27.7	<b>26.2</b>	<b>23.6</b>	20.4	17.7	17.2	18.9	<b>21.5</b>	23.7	25.2	27.3
Mean Min Temp (C)	18.1	18.1	<b>16.1</b>	<b>12.7</b>	9.6	6.6	5.1	6	<b>8.6</b>	11.8	14.2	16.6
Mean Rainfall (mm)	92.1	109	<b>97.6</b>	<b>84.7</b>	70.2	73.5	44.6	49.7	<b>44.6</b>	61.9	76.1	67
Mean number of days of rain	8.1	8.2	<b>8.5</b>	<b>6.7</b>	7.2	6.7	5.1	4.6	<b>5.5</b>	6.8	8.1	7
Mean 9am temp (C)	22.4	21.6	<b>20.2</b>	<b>17.4</b>	13.8	10.7	9.5	11.5	<b>15.1</b>	18.2	19.3	21.4
Mean 9am relative humidity (%)	71	77	<b>77</b>	<b>76</b>	79	80	78	70	<b>64</b>	62	67	67
Mean 9am wind speed (km/h)	8.6	7.4	<b>6.6</b>	<b>6.7</b>	6.6	6.5	6.5	8.9	<b>10.2</b>	10.5	9.7	9.1
Mean 3pm temperature (C)	26.8	26.4	<b>25</b>	<b>22.5</b>	19.5	17	16.4	18	<b>20.2</b>	22.1	23.5	25.9
Mean 3pm relative humidity (%)	54	57	<b>55</b>	<b>54</b>	55	55	50	44	<b>45</b>	48	52	51
Mean 3pm wind speed (km/h)	20.9	19	<b>17.6</b>	<b>15.2</b>	12.9	13.5	14.1	17.5	<b>19.9</b>	21.5	21.6	22.6

\*Statistics obtained from the Bureau of Metrology on 3<sup>rd</sup> May, 2010

# Monthly Comparisons

- **March to April**

- 2.6 degrees difference in mean temperature (9am the difference is 2.8 degrees and at 3pm even greater at 3.4 degrees)
- There is only one % point difference between the humidity levels between those two months at both 9am and 3pm.

- **March to September**

- 4.7 degrees difference in mean temperature (9am 5.1 degrees and 3pm 4.8 degree difference)
- **Humidity there is an average of 10 % points difference between March and September – this is very significant**



# Registration periods for other sporting associations

<b>SPORT</b>	<b>START TIMES</b>	<b>SCHEDULING</b>
Cricket*	2 <sup>nd</sup> Sunday in September first game for the season	Saturday – Seniors Sunday - Juniors
Little Athletics*	Season starts September – March	Friday afternoons Saturdays
Nippers*	First Saturday in Holidays	Saturdays & Carnivals are Sat/Sun
Softball	Summer Season starts end September - October	Saturday mornings – Juniors Saturday afternoons - Seniors
Oztag	Summer Competition	Predominantly week nights (Tues – Thurs)
Basketball	Winter Comp Summer Comp	Juniors – Term 2&3 (Friday nights/Saturdays) Seniors – Ladies (Wed nights) Juniors – Term 4&1 (Friday nights/Saturdays) Seniors – Ladies (Wed nights)
Soccer	Winter Comp – Mid April – End August Summer Soccer – September – February	Juniors – Saturdays Seniors (ladies) – Sundays Monday nights in area
Hockey	April – September	Saturday/Sunday
Tennis	Predominantly all year for training/coaching ( 7 days)	Tournaments are scheduled between December - February

\* Start date can vary dependant on the local association