

# Research Junior Football Club

'The Family Club'  
Affiliated with Lower Plenty F.C.



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## HOT WEATHER/HEAT POLICY

### **INTRODUCTION**

The Research Junior Football Club has formulated this Hot Weather Policy to minimize the risk of injury and illness during both games and training by assisting officials, coaches, parents and players to recognize and manage potentially dangerous heat situations.

### **RATIONALE**

The Research Junior Football Club recognizes the need to ensure that a reasonable Duty of Care is provided to all of its players in heat situations and encourages a common sense approach. This Policy focuses on the comfort and well being of all individuals and aims to maintain the highest levels of enjoyment and participation for all.

Hot weather can harm the performance and the health of all players at all levels from U/9 through to U/17 and beyond. The risk of Heat Illness from vigorous exercise or high intensity sport is significant. It can range from cramps, through to heat exhaustion to heat stroke, coma and in extreme circumstances, even death.

### **BACKGROUND**

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

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. If an individual's core temperature is above 40 degrees Celsius (normal 37 degrees) the risk of heat injury is significant.

***Factors that can contribute to heat injury include:***

- High ambient (air) temperature
- Solar radiation
- Humidity
- Dehydration
- Illness
- Medical conditions
- Effects of alcohol and/or drugs

Moderate to high intensity exercise in hot environments, with the associated fluid loss and elevation in the body temperature, can lead to:

- Dehydration
- Illness
- Heat exhaustion/Heat stress
- Heat stroke
- Decrease in performance

**INFORMATION**

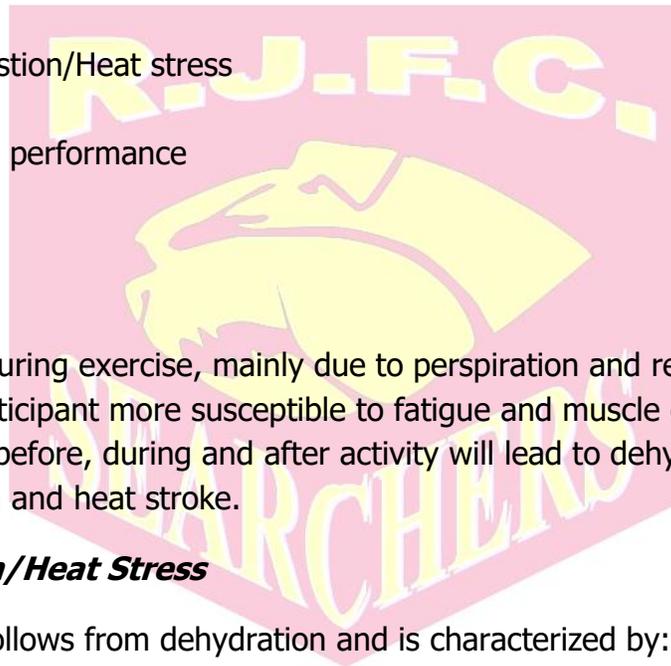
***Dehydration***

Fluid loss occurs during exercise, mainly due to perspiration and respiration. The loss of fluids makes a participant more susceptible to fatigue and muscle cramps. Inadequate fluid replacement before, during and after activity will lead to dehydration and may lead to heat exhaustion and heat stroke.

***Heat Exhaustion/Heat Stress***

Heat exhaustion follows from dehydration and is characterized by:

- High heart rate
- Dizziness
- Headaches
- Loss of endurance/skill/confusion
- Nausea
- Skin may be clammy/cool/sweating but there will be signs of vasoconstriction eg, pale in colour
- Muscle cramps may occur due to dehydration
- Little urine passed, but highly concentrated



- Participant may collapse on stopping activity

### ***What to do if you suspect heat exhaustion or heat stress***

- Remove the person from the playing arena
- Lay the person down in a cool place
- Give plenty of cool water
- If the person is confused or unable to drink water seek medical help immediately

### ***Heat Stroke***

Heat stroke follows from severe dehydration and it has the potential to be fatal and must be treated immediately by a medical practitioner.

Persons who continue to participate when suffering from heat exhaustion may experience heat stroke. Heat stroke can still occur even if they have been drinking plenty of fluids.

It is vital to cool the person as quickly as possible. Symptoms include:

- Dry skin
- Confusion
- Collapsing

### ***What to do if you suspect heat stroke***

- Call a doctor or ambulance immediately
- Remove from the playing arena and lay the person down in a cool place
- Give plenty of cool water if conscious
- Cool the person down by putting in a cool bath, shower or under a hose, apply wrapped icepacks to the groin and armpits or use wet towels.
- Maximise airflow to the person by using fans or fan them with a wet towel

### ***Hydration***

The more athletes sweat, the more fluid they 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 7-8 ml of fluid per kg of body mass (average is about 2 cups) no more than 2 hours before exercising to promote adequate hydration and allow time for excretion of excess water.

During exercise it is recommended that participants should drink fluid at regular intervals to replace fluids lost through sweating. Participants should aim to drink at least 3ml per kg of body mass (about 250 ml for the average athlete of around 70 kilograms every 15 to 20 minutes or 2-3 cups every hour) However, this may vary dependant on the rate of sweating. Fluid taken should be cooler than the ambient temperature.

Water is considered an adequate fluid option for activities lasting up to one hour. Participants in events or 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.

In high risk conditions players should be encouraged to drink fluids at scheduled drinks breaks and should be provided convenient access to fluids during activity without unnecessary interruption to the game or event.

Officials and event organizers should also consider including additional drinks breaks for players in conditions of high risk.

In regard to post event rehydration, it needs to be remembered that this can take 24 hours or more.

### ***Player Rest and Rotation***

In conditions of high risk participants should be provided opportunities to rest through the use of player interchange or 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 example, if the activity normally runs for 60 minutes, the rest period for the player should comprise at least 6 minutes during the period.

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 should 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.

For events played in high risk conditions that do not have a specified playing time, players should be permitted to take rest breaks from activity equivalent to 3 minutes for every 30 minutes of activity.

The positive effects of rest breaks should also be maximized by employing the following strategies:

- Allowing players to rest in naturally shaded areas or providing portable structures that create shade where and when required.
- Provide fans and ice packs; and
- Providing additional fluids to allow participants to spray or douse themselves to assist cooling.

## **TEMPERATURE**

The tables below provide approximate guides to weather conditions and appropriate individual and organizational responses. Although temperature ranges are given, there are no clear demarcations in risk between ranges.

### ***Ambient Temperature***

Easily understood, 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	Moderate early pre-season training intensity. Reduce intensity. Limit duration of play/training; take more breaks
31 - 35	Exceeds 50%	High – very high	Uncomfortable for most people. Limit intensity. Limit duration to less than 60 minutes per session.
36 and above	Exceeds 30%	Extreme	Very stressful for most people. Consider postponement to a cooler part of the day or cancelation.

## **WBGT**

Further guidance might be gained from the Wet Bulb Globe Temperature (WBGT) index. The WBGT is particularly useful for hot, humid conditions.

<b>WBGT</b>	<b>Risk of Heat Illness</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 early pre-season training intensity and duration. Take more breaks
26 - 29	High – Very High	Limit intensity. Limit duration to less than 60 minutes per session.
30 and above	Extreme	Consider postponement to a cooler part of the day or cancellation (allow swimming).

It is important to note that the higher the humidity, the less likely cooling will occur through the evaporation of sweat.

It is possible to obtain an ambient temperature from the Bureau of Meteorology [www.bom.gov.au](http://www.bom.gov.au) and then use the information to make educated decisions on what mechanism will need to be put in place to reduce the effects of extreme heat on participants.

### ***Children and Heat***

Children's bodies are different to adults and they are at greater risk of heat illness. Prior to puberty the sweating mechanism which is 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 more rapidly in hot conditions.

Children take longer to acclimatize to physical activity in heat than does an adult.

At an ambient temperature greater than 34 degrees Celsius there is an extreme risk of thermal injury to all children and also adolescent participants.

## **CHILDREN AND HEAT**

The physiological and structural difference between children and adults places children at a greater risk of suffering from heat illness. These differences impact on a child's ability to respond to environmental heat and acclimatise to heat. These differences include:

- a larger surface area/body mass ratio which affects their ability to dissipate heat

when environmental temperature is greater than skin temperature (Falk 1998). This can be an advantage when heat loss is necessary, but is a disadvantage when radiant or convective heat gain occurs;

- immature sweating mechanisms which require a greater increase in body

temperature before the onset of sweating (Araki et al 1979); and

- fewer and smaller sweat glands which limit the production of sweat .

## **HOT WEATHER POLICY FOR CHILDREN**

At ambient temperature greater than or equal to 30 degrees Celsius, children have greater difficulty getting rid of heat than adults.

## **STRATEGIES FOR REDUCING THE RISK OF HEAT ILLNESS** ***(Children)***

The following strategies should be considered for sport and physical activities involving children. The strategies should be considered in conjunction with strategies for reducing the risk of heat illness for the general population and the hot weather policy for children.

### ***1. Shade and drinks***

Organisers of activities that are conducted in hot conditions must provide sufficient shade and regular drinking opportunities. This is particularly critical where the fitness

and state of acclimatisation of the young participants are uncertain. It is recommended that water or fluids be provided whenever children are being active.

More fluid, however, appears to be consumed by young people when the drinks offered are perceived as palatable to them. Therefore, for children and adolescents having trouble drinking adequate tap water, flavored drinks may need to be considered.

Conversely, the high energy content of some flavored drinks may be unnecessary during exercise in athletes who have a genuine rather than an aesthetic need to lower body fat levels.

It is recommended that young athletes begin regular drinking routines using water or fluids during training and competition. Regular and effective drinking practices should become habitual to young athletes before, during and after activity. Individuals should monitor weight changes before and after workouts and know the amount of fluid that they are likely to require.

## **2. Acclimatisation and overweight children**

In addition to the risks associated with activity in the heat for unfit and unacclimatised young people, coaches/supervisors of overweight children and adolescents should take extra precautions to lessen the potential for heat gain. It is recommended that, whenever activity in hot conditions is unavoidable with these children, coaches/supervisors decrease the volume and duration of physical activity and increase opportunities for drinking, rest and shade as a matter of priority.

At the onset of hot weather, the young athlete may take longer to acclimatise. It is therefore recommended that training volumes (duration and intensity) decrease during the first few weeks of hot weather. Increased times for rest, using access to shade more frequently and increasing the number of mandatory drinking breaks are recommended for the young athlete when the weather becomes noticeably hotter.

## **3. Clothing**

In addition to the clothing recommendations made for the general population, it is recommended that summer-based sporting organisations select uniforms that minimize heat gain and that coaches and parents encourage children and adolescents to wear appropriate clothing in layers that can be easily removed during activity, both at training and on game days.

## TRAINING IN HEAT

- On training days when the Ambient Temperature is 30 Degrees Celsius or above ( as per The Bureau of Meteorology BOM) [www.bom.gov.au](http://www.bom.gov.au) at 3.30pm, Coach's will be required to modify training so that no High Intensity drills (including running and physical contact) will be carried out. Suitable substitute drills should be implemented and could include, basic skill drills such as handball and kicking.
- Drink Breaks will be held at 15 minute intervals, with coach's ensuring that an adequate supply of drinking water is available.
- Broad Spectrum Water Resistant SPF 30Plus sunscreen must be made available for use by all participants.
- Suitable headwear should be worn by all participants.
- Spray bottles containing water should be made available so as to allow participants to douse themselves, thereby assisting in the cooling process.
- On Training days were the Ambient Temperature is 38 Degrees Celsius or above at 3.30pm ( as per the Bureau of Meteorology BOM) [www.bom.gov.au](http://www.bom.gov.au) All training sessions will be cancelled.
- Under No Circumstances will training sessions be held or continue during any Thunder Storm Activity.

<b>Date Introduced</b>	<b>Last Review Date</b>	<b>Next Review Date</b>
November 2008	-	November 2009

