

1. Introduction

Bowls NSW Ltd has a responsibility to take a positive leadership role in educating and increasing the awareness of its participants towards the dangers of physical activity in the heat and during extreme weather conditions.

Bowls NSW Ltd **'Extreme Weather Guidelines'** have been developed which reinforce the guidelines produced by Sports Medicine Australia.

It should be noted that these are purely guidelines.

The guidelines should be considered for all participants involved in lawn bowls, including players, officials, umpires, coaches, parents, volunteers, staff and spectators.

Associations and Clubs are strongly encouraged to use Bowls Australia and Bowls NSW Ltd Extreme Weather guidelines and resources from Sports Medicine Australia and Bureau of Meteorology (BOM) to develop their own guidelines that incorporate local geographical conditions and any sport laws or competition conditions of play that may be in place.

2. Policy Statement

Environmental factors regularly affect the playing of lawn bowls.

While environmental factors will not usually influence whether a lawn bowls match should commence or continue to be played, occasionally extremely adverse weather conditions may give rise to a need to assess whether players, officials, spectators and volunteers are in environmental danger.

This policy sets out the approach that a Controlling Body should adopt when assessing extreme weather conditions.

There are various methods to measure weather conditions and this policy sets out guidelines for the most common methods: *Ambient Temperature/Relevant Humidity & Wet Bulb Globe Temperature (WBGT)*.

When using a measuring device, ensure it is situated as per directions of use.

If no measuring device can be used, use closest weather station to venue on BOM website.

3. Extreme Weather

Extreme weather may be defined as weather that threatens the immediate or long-term safety of individuals, because of rain, hail, lightning, wind chill or heat.

The risk is determined in conjunction with Sport Medicine Australia's Guidelines as well as the Bureau of Meteorology's forecast conditions.

Weather Condition	Extreme Weather Determinant
Ambient Temperature	>35° (Social/Seniors): >38° (Competition)
Wet Bulb Globe Temperature	>30 (Social/Seniors): >32 (Competition)
Apparent Temperature (Wind Chill)	<2° Celsius
Wind Speed	>45km per hour
Rainfall	>80mm within 24 hours

Notes:

Wind may create additional hazards in regard to mats, trees, branches or other materials becoming projectiles.

Rain also needs to be considered in relation to its impact on the safety of the playing surface and surrounds.

4. Onus On Player

Players have a responsibility to ensure that the impact of environmental factors such as extreme heat is not exacerbated by their own conduct.

Accordingly, the following general guidelines should be followed

Players should:

- (i) ensure adequate fluid (non-alcoholic) intake prior to game and during game
- (ii) monitor hydration
- (iii) notify staff/controlling body when effected by heat or when performance is noticeably effected
- (iv) use water and electrolyte drinks
- (v) use pre-game, game and post-game cooling strategies
- (vi) do not play in the heat with an illness; and
- (vii) apply sun protection factor 30+ sunscreen in sunny conditions.
- (viii) wear appropriate warm clothing on cold or chilly, windy conditions

5. Extreme Heat

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.

In cool weather, heat illness can also present when exercising at high intensity.

Heat illness in sport presents as heat exhaustion (more common) or heat stroke (rare but life threatening).

Symptoms may include light-headedness, dizziness, nausea, obvious fatigue or loss of skill and coordination, unsteadiness, cessation of sweating, confusion, aggressive or irrational behaviour, collapse or ashen grey pale skin.

Children And Heat Stress

Children sweat less and get less evaporative cooling than adults.

- In warm and hot weather, they have greater difficulty getting rid of heat; they look flushed and feel hotter and more stressed than adults.
- Overweight children are particularly disadvantaged exercising in warm weather.
- Children seem to be effective at 'listening to their bodies' and regulating their physical activity. For this reason, children should always be allowed to exercise at their preferred intensity. They should never be urged to exercise harder or compelled to play strenuous sport in warm weather.
- If children appear distressed or complain of feeling unwell, they should stop exercising.
- In warm weather, wet sponging will make children feel more comfortable.
- Drinks should be provided for children playing sport.

6. Heat Illness Chart

The Heat Illness Chart is a guide to the relationship between ambient temperature and the risk of heat illness.

When observing this chart consider:

- there are not clear demarcations in risk between temperature ranges
- stress increases with rising air temperature and relative humidity
- at low ambient temperatures, the body can cope with higher humidity than at high ambient temperatures
- stress increases with relative humidity as it becomes more difficult to regulate body temperature due to a decrease in the evaporation of sweat (a mechanism used to keep the body cool in the heat and while exercising)
- individual risk factors including acclimatisation to location conditions

Ambient Temperature (°Celsius)	Relative Humidity	Risk of Heat Illness	Recommended Management
<20°		Low	Normal Play
21° - 25°	Exceeds 70%	Low – Moderate	Increase vigilance – Caution players
26° - 30°	Exceeds 60%	Moderate – High	Caution players – Take steps to introduce breaks or reduce time of play
31° - 35°	Exceeds 50%	High – Very High	Uncomfortable for most people (especially aged persons). Limit duration of matches, if possible. Introduce 5 min breaks every 25 minutes. If temperature reaches 35° it is recommended to call off social/senior matches.

6. Heat Illness Chart - continued

Ambient Temperature (°Celsius)	Relative Humidity	Risk of Heat Illness	Recommended Management
35° - 38°	Exceeds 30%	Very High – Extreme	Very stressful for most people. Introduce 5 min breaks every 20 minutes. If temperature reaches 38° it is recommended to call off competition matches until temperature at least drops back to under 35°
>38°	Exceeds 25%	Extreme	It is recommended to cancel all outdoor sporting events or at least postpone until temperature drops back to under 35°

WBGT

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

WBGT	Risk of Heat Illness	Recommended Management
Less than 20	Low	Normal Play
21 – 25	Moderate	Increase vigilance – Caution players- Take steps to introduce breaks or reduce time of play.
26 – 29	High	Limit duration of matches, if possible. Introduce 5 min breaks every 25 minutes.
30- 31	Very High	It is recommended to call off social/senior matches. Introduce 5 min breaks every 20 minutes for competition.
32 or Greater	Extreme	It is recommended to cancel all outdoor sporting events or at least postpone until reading is below 30.

7. Lightning

Lightning is the visible part of an electrical discharge. Thunder is the resulting sound from the rapid expansion of the air after this electrical discharge. Sound follows light at 0.34 km/sec.

Check the forecast and watch the sky. Darkening skies, flashes or lightning, or increasing wind may indicate an approaching storm. Lightning safety tips:

- Use the 30/30 Lightning Rule.
If the time between the lightning flash and the thunder sound is less than 30 SECONDS then play should be suspended, and not resumed until 30 MINUTES after the last thunder sound is heard within 30 seconds of a lightning flash. (30 seconds relates to 10 Kilometres away).
- Find safe shelter. Sturdy buildings are the safest place to be during lightning storms. Avoid sheds, picnic shelters, metal framework. Staying in a car with windows closed also offers some protection.

Note: Thunder is not usually heard 24-32 kilometres from the lightning strike.

8. Hail

All hailstorms present some risk to players in an open playing field, and the size and intensity of the storm can change dramatically in a short period of time.

All play should be suspended during hailstorms so that players and officials can seek suitable shelter.

It is important to also be aware of any significant temperature drop, rainfall and increased wind that may be associated with the hail conditions.

Play should be restarted after the hail has stopped falling, with attention being given to the amount of ice on the playing surface (size and thickness of layer).

In some cases, it may be unsafe to resume play immediately due to an ice-covered surface.

Deferral of the restart to allow melting (or manual clearing in parts) should be considered in extreme circumstances.

9. Chill

Extreme weather can produce two chill risks: the absolute air temperature and the wind chill factor. Of these, wind chill in winter is the more significant risk.

Apparent Temperature (AT) is an adjustment to the actual air (ambient) temperature based on the perceived effect of the extra elements such as humidity and wind.

AT is valid over a wide range of temperatures, and it includes the chilling effect of the wind at lower temperatures.

2°Celsius (AT) is the point where play should be suspended for wind chill factor. When using the AT as a wind chill indicator, the model assumes an appropriately dressed adult for those conditions.

If clothing were to get wet, the cooling effect would be greater than that predicted by the model, and the chance of hypothermia would be greater than indicated by the AT.

In wet, windy conditions, someone wearing inadequate clothing can become hypothermic in quite mild conditions.

The risk also increases for children.

10. Air Quality

Please see separate Bowls NSW Air Quality Guidelines Policy.