



# NTIS

## NORTHERN TERRITORY INSTITUTE OF SPORT

### NTIS Sun and Heat Guidelines

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#### *Policy Rationale/ Background*

As a high performance athlete, you will often be placed in situations that carry the risk of harmful sun or heat exposure. The NTIS has a duty of care to reduce the risks of ultraviolet radiation-related skin and eye damage, heat illness and injury caused by exercising in poorly shaded or hot external environments. As a result, the NTIS has adopted a "Sun and Heat Protection Policy", which provides guidelines to ensure all NTIS scholarship athletes, coaches and staff are aware of the importance of protecting skin and eyes from the sun.

In a broader sense, by adhering to the appropriate sun protection behaviour outlined in this policy, you may be able to positively modify and influence community attitudes to sun protection.

The NTIS Acknowledges the New South Wales Institute of Sport for the use of their "Sun and heat protection policy" in the development of this document.

#### *Policy Summary*

Please take a moment to read the following facts on Ultraviolet Radiation (UVR) and the Risks of Heat Stress

#### 1. The Risks of Ultraviolet Radiation

- Ultraviolet Radiation (UVR) cannot be seen or felt and UVR levels are not related to air temperature (i.e. there can be very high levels of UVR on cool, cloudy days).
- Ozone, the gas present in the upper atmosphere, absorbs most of the UVR entering the atmosphere before it reaches the earth's surface. Variations in ozone layer by season and latitude can affect UVB radiation (the most dangerous form of radiation). Scattered or thick cloud may decrease direct UVR from the sun but may even increase total global UVR through increased reflection.
- Reflected UVR from some surfaces (particularly sand, water or snow) can damage a person's skin under a hat and in the shade, and can be more intense than direct UVR, particularly in the morning and evening.
- At high altitudes (especially over 1500 m where the atmosphere is thinner) the amount of UVR reaching the skin can be 20 per cent higher than at sea level.
- Skin damage, including skin cancer, may occur as a result of cumulative or intermittent exposure to UVR. Much of the skin damage occurs during childhood and adolescence, but may also occur in adults. Over-exposure to UVR can cause wrinkles, sunspots, blemishes, premature ageing and eye damage. Some studies link exposure to UVR with suppression of the immune system.



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- The danger period for UVR is from 10am-2pm (standard time) or 11am-3pm (daylight saving time).
- Everyone is at risk of getting sunburnt and developing skin cancer or skin damage, although fair-skinned people with reddish or fair hair are at greatest risk.
- Dark-skinned people can get sunburnt, particularly on the lips, feet and hands and still require protection.

### 2. The Risks of Heat Stress

- Heat injury or heat illness can occur when the body's temperature control mechanism cannot cope with heat in the environment. This heat comes from the sun's infra red radiation, but also derives from the metabolic heat of muscle action when exercising.
- Normally, the most effective method of controlling body heat in hot environments is by sweating. A large amount of skin blood flow is required for sweating to be efficient. When exercising in the heat, the skin and muscle blood flow related to exercise compete for cardiac output, increasing the stress on the heart and circulation.
- Large amounts of fluid can be lost in sweating whilst exercising in hot environments. High humidity and little or no wind reduce the efficiency of heat loss due to sweating.
- Severe heat stress can cause exhaustion, cramps, alteration of consciousness, collapse, coma, permanent injury to internal organs such as the kidneys, liver, muscles and parts of the brain, or death.

### **Prevention of Sun Damage and Heat Stress**

There are a number of preventative measures that may assist in eliminating or controlling the risks of over-exposure to heat and UVR:

#### Training and Competition Times

- Outdoor activities should be scheduled to avoid peak UVR times (10am–2pm standard time or 11am–3pm daylight saving time), or alternatively moved inside.
- Consideration should be given to cancellation of training or events in situations of high temperature (greater than 27 degrees), high humidity and poor wind.
- Temperatures at indoor training and competition venues should be appropriately controlled and monitored.

#### Training and Event Venues

- Permanent and temporary shade structures for outdoor venues should be provided.
- Regular announcements (at least every hour) promoting sun protection should be made over the public address system at competitions.
- Available shade should be used wherever possible. Remember that reflected and scattered UVR can still damage skin even in shade.



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### Appropriate Clothing

- Clothing should be light coloured and preferably made of close weave (but breathable) cotton or cotton-blend fabric.
- The ultraviolet protection factor (UPF) on the clothing should have a rating of 40 or above (AS/NZS 4399).
- Shirts should have long or  $\frac{3}{4}$  length sleeves. Collars should be turned up to protect the neck.
- Training shorts should be long (to the knee if possible). For maximum protection, coaches should wear loose fitting long trousers.
- Long-sleeved, lycra rash vests should be considered for aquatic sports where sun exposure is a problem.

### Headwear

- Hats with a broad rim should be worn after 8am to protect the face, ears and neck (caps offer very little protection from UVR). In some circumstances, a close fitting legionnaire-style cap with a back flap may be a better choice.
- Athletes are encouraged to wear hats during warm up and, as much as possible during exercise, removing them only when necessary.

### Use of Sunscreens

- No sunscreen offers complete protection from the sun and other forms of protection should be used in conjunction with sunscreen.
- Sunscreen should be broad spectrum, water-resistant and SPF 30+.
- Sunscreen should be applied at least 20 minutes before going outside and reapplied every two hours or after it has been wiped or washed off.
- Total 'block-out' with zinc SPF 30+ cream should be used where possible, particularly on areas such as ears, lips and nose.
- Alcohol-based, water-resistant sunscreen should be used in sports where oily based lotions are inappropriate (e.g. swimming).

### Sunglasses

- Sunglasses should be the close-fitting, wrap-around style that meet Australian Standard 1067 or have an eye protection factor (EPF) of 10.

### Medical Skin Checks

- The NTIS strongly recommends that athletes undergo a skin check annually, either with their local GP or a dermatologist/ skin specialist, in order to identify evidence of skin damage and to provide the opportunity for early detection of skin cancer. The responsibility and cost of organising this lies with the athlete.

### Fluid Replacement



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- 500ml of fluid (2-3 standard glasses) should be ingested 30-60 minutes prior to hot or strenuous activity in the heat.
- Regular intake of fluid is necessary during the activity.
- 500ml – 1 litre (5-6 glasses) of fluid should be consumed after the activity.
- Measuring body weight before and after strenuous activity may assess fluid requirement. 1kg of body weight loss is equivalent to 1 litre of fluid loss. Serious heat injury can occur if 5 per cent or more body weight is lost as fluid during activity.
- The most appropriate fluid replacement is water or diluted fluid replacement sports drink.
- Thirst is a poor indicator of the need for fluid replacement.

### Environmental Variables

The risks of heat and sun exposure are increased, and must be allowed for, in the following situations:

- a) High altitude.
- b) Surfaces reflecting a high proportion of UVR such as water, sand or snow.
- c) Days of scattered cloud.
- d) Situations of high humidity, particularly with light or no winds.
- e) Summer months.