

EXTREME HEAT: SAFETY RECOMMENDATIONS



ATLANTIC DIVISION
CANOEKAYAK CANADA

Do not deny athletes water. Heat Stroke and brain damage are NOT a part of a normal fitness or team building exercise.

Where the Atlantic Division - Canoe Kayak Canada (ADCKC) has a responsibility to the safety of its participants, this document is offered as a guideline to our member clubs when considering participation in programming or events when heat and humidity become oppressive.

When ambient temperature and relative humidity combine to reduce the effectiveness of the bodies natural heat regulation, heat related illness can lead to life-threatening situations. Heat Stress, if untreated, can quickly lead to Heat Stroke – a serious health concern.

The active human body generates considerable heat, and is usually cooled by the evaporation of sweat from the skin. When the temperature is high, and/or humidity is high, there is a lessened evaporative effect, and the body may become unable to cool itself. In children, this effect is greater since children sweat less than adults and have a lower body surface area and thus their ability to cool and regulate body temperature is even less than in adults.

In the most simple terms, if the adult leaders are uncomfortable in the heat, an athlete or child may be in a much more serious condition.

These recommendations apply to all events and programs under the direction of the Atlantic Division and its Member clubs.

Ensure participants:

Wear a hat, cap or visor – a broad brimmed hat is preferred.

Wear a 30+ sunscreen to prevent skin damage and skin cancer.

Wear sunglasses.

Replace sweat-saturated garments with dry clothing.

Stay hydrated. *Maintaining proper hydration is a preferred response over recovery from dehydration. DO NOT use deprivation of water as a 'coaching' tool.*

Temperature:

The ADCKC has updated its website to include weather feeds for the club regions of the ADCKC. Refer to our webpage for current conditions, consult Environment Canada, and ensure that reliable, basic weather information is available for your club site. Pay special attention to any weather alerts or advisories for your area.

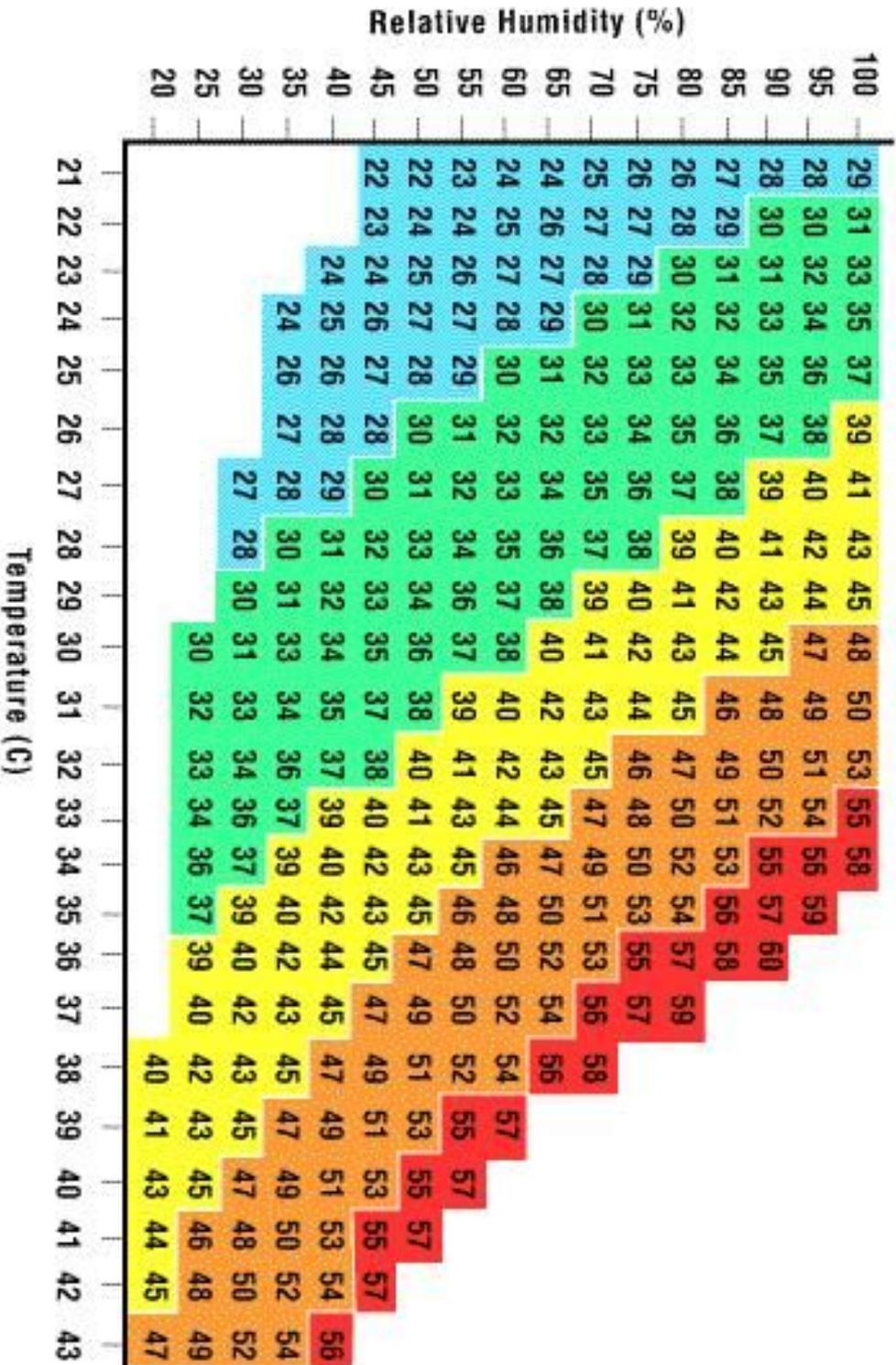
General:

Ambient Temperature(C)	Relative Humidity	Risk of Heat Illness	Recommended Management for Sports Activities
15 - 20		Low	Heat illness can occur in distance paddling. Caution over- motivation.
21 - 25	Exceeds 70%	Low – Moderate	Increase vigilance Caution over-motivation.
26 - 30	Exceeds 60%	Moderate	Moderate early pre-season training. Reduce intensity and duration of training. Take more breaks.
31 - 35	Exceeds 50%	High - Very High	Uncomfortable for most people. Limit intensity, take more breaks. Limit duration to less than 60 minutes per session.
36 and Above	Exceeds 30%	Extreme	Very stressful for most people. Postpone to a cooler part of the day or cancel the session.

Developed by Sport Medicine Australia

The **HUMIDEX** was developed by Canada's Atmospheric Environment Service and while no two people react the same way to weather (age and health, including respiratory issues and fitness levels, affect how hot it feels), the Humidex is a useful measure based on the ambient temperature, and the relative humidity and is an indication of what a particular temperature 'feels like' given the reduced effectiveness of the internal temperature regulation of the human body under those conditions. The Humidex chart (below) is simple to read, and once understood, the numbers speak for themselves: Any Humidex number above 39 (yellow) is cause for concern, and beyond 45 (red), requires the cessation of activities.

Humidex from Temperature and Relative Humidity Readings



LEGEND

HUMIDEX RANGE	DEGREE OF COMFORT
Less than 29	No discomfort
30 - 39	Some discomfort
40 - 45	Great discomfort; avoid exertion
Above 45	Dangerous
Above 54	Heat Stroke Imminent

For Participants 16 Years and Younger

Activities must be curtailed and precautions taken (on completion of the current race if in competition) if;

Humidex is 34 or higher

Activities must be suspended (on completion of the current race if in competition) if;

The Ambient Temperature is 34°C or greater

OR

Humidex is 40 or higher

Participants Over 16 Years of Age

Activities must be curtailed and precautions taken (on completion of the current race if in competition) if;

Humidex is 40 or higher

Activities must be suspended (on completion of the current race if in competition) if

The Humidex is 45 or above

HYDRATE

- **Do Not Wait To Feel Thirsty Before You Drink!**
- Sweat is mainly water and a very little salt.
- Drink cool water as it is absorbed more rapidly than warm water.
- If active for more than one hour, use a sports drink - a carbohydrate drink of 5-10% concentration with a small amount of sodium chloride (salt tablets should be avoided because of their very high sodium chloride content, which can make dehydration worse). Diluted sports drinks, cordial and fruit juices should also be made available or recommended. Not only will this make the fluids more palatable but it will be beneficial for replacing fluids, energy and electrolytes lost during exercise. It will delay the onset of exercise-induced exhaustion and hence aid in the prevention of heat stroke.
- It is recommended that officials and participants drink at least 7-8ml of fluid per kg of body mass to diminish the risk of heat illness.
- Fluid should begin to be consumed at least two hours before exercising to promote adequate hydration.
- Thirst is a poor indicator – it is a late signal of severe fluid loss.
- Drink at least 500 ml (2-3 glasses) 1/2 to 1 hr before a race. Drink at least 500 ml to 1 litre (5-6 glasses) after a session and continue to drink until fluid losses are replaced.

Progression of Dehydration by Percent of Total Body Weight Loss

1% - Already classified as mild dehydration and characterized by reduced blood volume and compromised cardiovascular capacity

2% - Dehydration is well established and is classified by marked thirst

4% - Dry mouth and throat

5% - Shown to impair work abilities

6-8% - Loss of saliva production, speech becomes difficult and large increases in heart rate

10%-12% - Mental incapacitation No longer able to swallow, and cannot recover without medical assistance

SYMPTOMS OF HEAT EXHAUSTION / HEAT STRESS

- Dehydration can lead to Heat Exhaustion. Symptoms of heat exhaustion may include:
- High heart rate
- Dizziness
- Headache
- Loss of endurance / skill
- Confusion
- Nausea
- Cramps
- The skin may still be cool/sweating, but there will be signs of developing vasoconstriction, e.g. pale colour.
- They will pass little urine, which will be highly concentrated.
- Collapse on cessation activity.

If you have these symptoms; stop activity, drink more fluids and cool down (seek medical treatment if symptoms do not improve rapidly).

EMERGENCY PLAN FOR HEAT EXHAUSTION

If a person is showing any symptoms of heat exhaustion take the following action:

- Stop the person
- Lie the person down, preferably in shaded area out of direct sunlight
- Loosen and remove excessive clothing
- Cool by fanning
- Give cool water to drink if conscious
- If the person is confused or unable to drink water seek medical help immediately.

SYMPTOMS OF HEAT STROKE

Severe dehydration may lead to heat stroke, which is potentially fatal and must be treated immediately by a medical practitioner. Participants who keep participating when suffering from heat exhaustion may experience heat stroke. Heat stroke can occur even when drinking plenty of fluid. It is important to cool the person down as quickly as possible. Heat stroke symptoms include:

- Dry skin
- Confusion
- Collapsing

EMERGENCY PLAN FOR HEAT STROKE

If a person is showing any symptoms of heat stroke take the following action:

- Call a Doctor or Ambulance immediately
- Stop the person
- Lie the person down
- Loosen and remove excessive clothing
- Cool by fanning
- Give cool water to drink if conscious
- Apply wrapped ice packs to groin and armpits
- SEEK MEDICAL ASSISTANCE

References – Sources

Health Canada – Environmental Workplace Health, Extreme Heat Events Guidelines:

<https://www.canada.ca/en/health-canada/services/environmental-workplace-health/reports-publications/climate-change-health/extreme-heat-events-guidelines-technical-guide-health-care-workers.html>

Canadian Centre for Occupational Health: Humidex Rating and Work:

https://www.ccohs.ca/oshanswers/phys_agents/humidex.html

Australian Canoe – Extreme Heat Recommendation:

http://canoe.org.au/wp-content/uploads/old-files/ac/downloads/pdf_rules/130315%20Heat%20Recommendation%20FINAL.pdf
