

## CMG 11 – TEMPERATURE ABNORMALITIES

(Revised: July 2018)



### (a) HEAT ABNORMALITIES

**Hyperthermia is defined as a core temperature above 37.5°C.**

The accuracy of tympanic thermometers in the field, and in hyperthermia in general, has not been established; assessment should be based on all aspects of patient presentation and history.

There are many potential causes of elevated body temperature. Consider the possibility of other causes, including sepsis, and manage accordingly.

**The aim of cooling is to actively reduce core body temperature to about 38°C. Active cooling should be ceased at this point to avoid overcooling.**

(Note that some organised events may have facilities for active cooling available – consider using these prior to transport if appropriate).

**Cooling may include:**

- Evaporative cooling (spray/sponge patient's body with tepid water and then fan over the moist skin)
- Ice packs (placed on the skin overlying vascular beds, such as groin, axillae and neck – avoid direct exposure of ice packs on skin)
- Cooled intravenous fluid (approximately 4°C – from the refrigerator)

#### MINOR HEAT SYNDROMES (INCLUDING HEAT EXHAUSTION):

- normal, or transient disturbances in mentation
- sweating
- **core temperature typically <40°C**
- other symptoms include headache, nausea, vomiting, tachycardia, tachypnoea, dizziness, collapse, muscle cramps

ICP	Cease exertion	AP
ICP	Move patient to a cool location	AP
ICP	Gentle cooling	AP
ICP	Oral rehydration – allow small sips only	AP
ICP	IV rehydration if: nausea +/- vomiting; significant dehydration.	AP
ICP	Consider antiemetic administration	AP

#### HEATSTROKE:

- altered conscious state and/or abnormal neurological signs
- no sweating – hot, dry skin
- **core temperature typically ≥40°C**
- other complications can include cardiovascular, respiratory, neurological, haematological and musculoskeletal involvement

**Heat stroke is a time-critical life-threatening condition. Transport should always occur due to the risk of multiple organ failure.**

ICP	Rapid, active cooling – as aggressive as possible	AP
ICP	IV resuscitation – cool fluids if possible	AP
ICP	Treat significant arrhythmias (as per appropriate CMG)	
ICP	Check BGL	AP
ICP	Aggressively manage seizures and shivering	AP

continues over



**(b) HYPOTHERMIA**

**Hypothermia is defined as a core temperature below 35°C.**

The accuracy of tympanic thermometers in the field, and in hypothermia in general, has not been established; assessment should be based on all aspects of patient presentation and history.

There are many potential causes of hypothermia. Consider the possibility of coexisting and alternate causes (e.g. sepsis, trauma, hypoglycaemia, drug intoxication) and manage accordingly.

Accidental hypothermia can occur even with exposure to mild or warm temperatures.

<b>MILD HYPOTHERMIA</b>		
	<ul style="list-style-type: none"> <li>• normal mentation, though may display apathy / confusion</li> <li>• shivering</li> <li>• <b>core temperature approx 32 – 35°C</b></li> <li>• other symptoms may include dysarthria, ataxia</li> </ul>	
<b>ICP</b>	More rapid warming is acceptable	<b>AP</b>
<b>ICP</b>	Warm oral fluids (sweetened if possible)	<b>AP</b>

**continues over**

## CMG 11 (cont) – TEMPERATURE ABNORMALITIES



### (b) HYPOTHERMIA – (cont)

MODERATE TO SEVERE HYPOTHERMIA		
	<ul style="list-style-type: none"> <li>significantly altered conscious state</li> <li>no shivering, increased muscle tone</li> <li><b>core temperature &lt; approx 32°C</b></li> </ul>	<ul style="list-style-type: none"> <li>decreased heart rate and respiration rate</li> <li>may present with arrhythmias – slow AF, junctional bradycardia, progressing to VF/asystole</li> </ul>
ICP	Handle patient gently (rough handling may precipitate arrhythmias)	AP
ICP	Remove wet clothing if sheltered; dry patient off <i>(prevention of further cooling is more important than speed of rewarming)</i>	AP
ICP	Gentle rewarming – wrap in warm blankets, then space blankets	AP
ICP	If intravenous fluids required, use warmed fluids	AP
ICP	Check BGL and correct where necessary (the body requires energy to produce heat – have a low threshold for treatment)	AP
ICP	If IPPV required – do not hyperventilate	AP
ICP	Note that the actions of medications are substantially altered or unknown at low body temperatures. Carefully consider the need for medications.	AP
ICP	Most cardiac arrhythmias resolve with rewarming – consider actively treating only life-threatening arrhythmias. Magnesium is the most promising medication for ventricular arrhythmias associated with hypothermia.	
ICP	<b>Cardiac arrest:</b> <ul style="list-style-type: none"> <li>normal cardiac arrest management</li> <li>if in VF / VT, no more than 3 shocks (defibrillation is unlikely to be effective &lt;32°C)</li> <li>no more than 3 doses of adrenaline</li> <li>do not cease resuscitation</li> </ul>	AP