Date: February, 2015

Purpose: To ensure consistent management of patients with Hypothermia.

Scope: Applies to all QAS clinical staff.

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URL: https://ambulance.qld.gov.au/clinical.html
Hypothermia is defined as a core body temperature of < 35°C and is caused by excessive cold stress and/or inadequate body heat production.[1]

Early compensatory mechanisms include shivering, increasing muscle tone, peripheral vasoconstriction, increased respiratory rate and cardiac output. When these mechanisms no longer compensate for heat loss, body temperature falls.[1,2,3]

Despite Queensland’s climate, hypothermia can occur in any season or setting.[4]

Causes of hypothermia can be classified under three (3) broad headings:

**Increased heat loss**
- vasodilation
- environmental
- trauma
- loss of skin integrity e.g. burns
- neuropathy

**Decreased heat production**
- age
- endocrine disorders
- nutritional deficits
- immobility

**CNS dysfunction**
- trauma
- CVA
- hypoxaemia
- malignancy
- encephalopathy.

### Clinical features

Signs and symptoms depend on the underlying aetiology and core temperature.[5]

- **Mild (35–32°C)** – vasoconstriction, apathy/lethargy, ataxia, tachycardia, tachypnoea and normotension.
- **Moderate (32–28°C)** – confusion, delirium, ALOC, hypotension, bradycardia and muscle rigidity.
- **Severe (< 28°C)** – stupor, coma, diminished or absent signs of life, dilated pupils, reduced/absent reflexes and apnoea. Dysrhythmias including SB, slow AF (may present with J-wave), VF and finally asystole.

The patient can also develop:
- blunted catecholamine release
- Hypo/hyperglycaemia
- Hypo/hyperkalaemia
- coagulopathy/disseminated intravascular coagulation/thromboembolic disorders
- rhabdomyolysis.

### Risk Assessment

- Not applicable
**Additional information**

- Ensure treatable underlying conditions (e.g. overdose, hypoglycaemia, seizure and/or trauma) are managed concurrently.
- In the pre-hospital setting it is difficult to accurately measure core temperature (typanic thermometers lack accuracy at temperature extremes).
- Move hypothermic patients carefully and gently as they are at an increased risk of developing VF (impaired conduction system).[^5]

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**Consider:**

- Oxygen
- LMA/ETT
- 12-Lead ECG
- IV fluid
- BGL
- Serial temperature monitoring
- Treat concurrent conditions

**Manage as per:**

- CPG: Resuscitation *(age specific)*
- CPG: Resuscitation – *Special circumstances*

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**Note:** Officers are only to perform procedures for which they have received specific training and authorisation by the QAS.

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**Transport to hospital**

Pre-notify as appropriate