



# Clinical Practice Guidelines: Environmental/Hypothermia

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<b>Date</b>	January, 2020
<b>Purpose</b>	To ensure consistent management of patients with hypothermia.
<b>Scope</b>	Applies to Queensland Ambulance Service (QAS) clinical staff.
<b>Health care setting</b>	Pre-hospital assessment and treatment.
<b>Population</b>	Applies to all ages unless stated otherwise.
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# Hypothermia

January, 2020

**Hypothermia** is a medical emergency that occurs when body heat is lost faster than it can be produced, resulting in an abnormally low body temperature.

Normal body temperature is around 37°C and hypothermia is defined as a core body temperature of less than 35°C.<sup>[1]</sup>

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

Despite Queensland's warm climate, hypothermia can occur in any season or setting.<sup>[4]</sup>

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
- stroke
- hypoxaemia
- malignancy
- encephalopathy.



## Clinical features

Signs and symptoms depend on the underlying aetiology and core temperature.<sup>[5]</sup>

- **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 (less than 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.

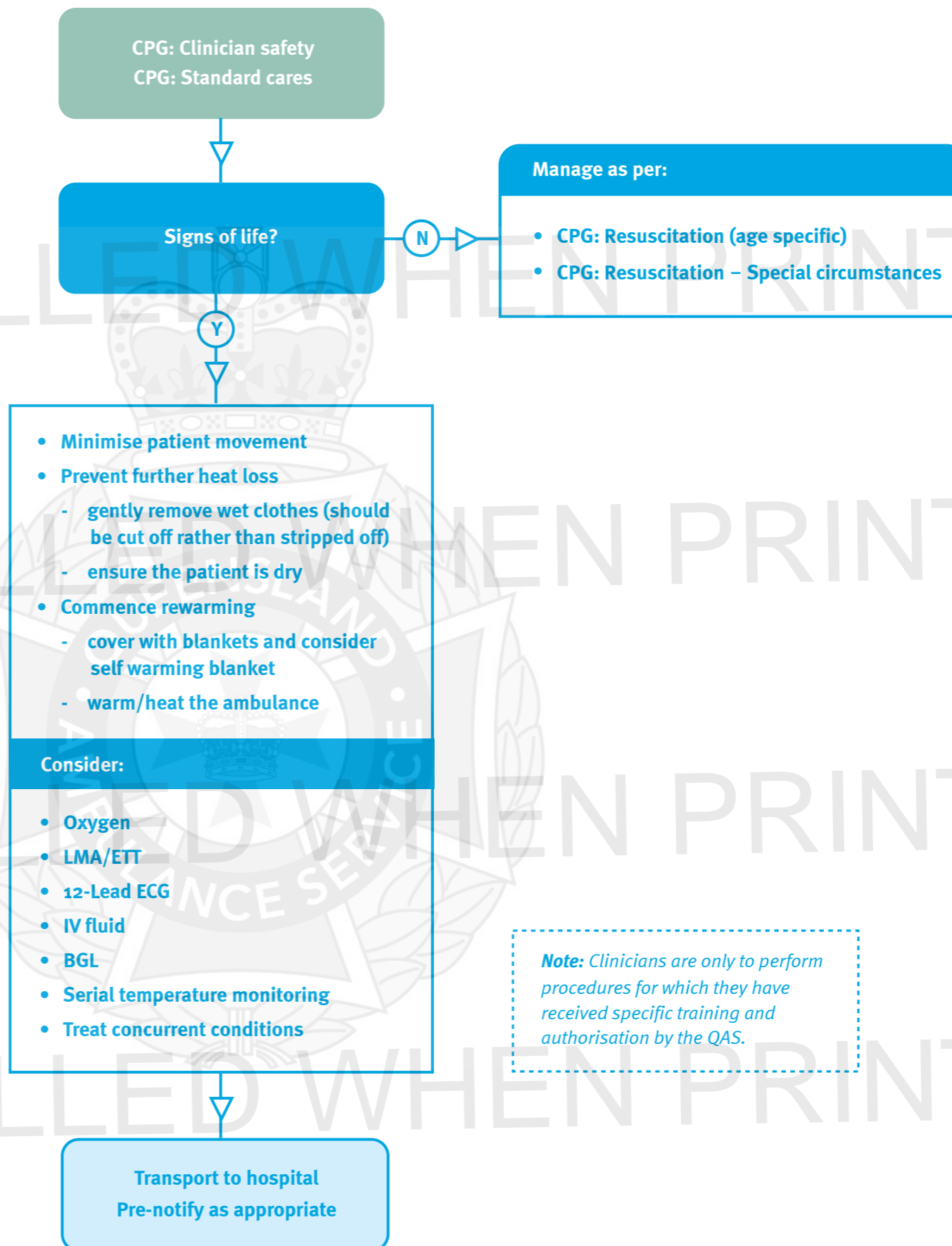


## Risk Assessment

- Not applicable

## **+ Additional information**

- Manage treatable underlying conditions concurrently, for example, overdose, hypoglycaemia, seizure, trauma.
- In the pre-hospital setting it is difficult to accurately measure core temperature (tympanic thermometers lack accuracy at temperature extremes).
- Move hypothermic patients carefully and gently as they are at an increased risk of developing VF due to impaired cardiac conduction.<sup>[5]</sup>



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