



## Drug Therapy Protocols: Hypertonic saline 7.5%

<b>Policy code</b>	DTP_HYPS_0924
<b>Date</b>	September, 2024
<b>Purpose</b>	To ensure a consistent procedural approach to hypertonic saline 7.5% administration.
<b>Scope</b>	Applies to all Queensland Ambulance Service (QAS) clinical staff.
<b>Health care setting</b>	Pre-hospital assessment and treatment.
<b>Population</b>	Applies to all ages unless specifically mentioned.
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# Hypertonic saline 7.5%

September, 2024

## Drug class

Osmotic diuretic

## Pharmacology

Hypertonic saline (HTS) 7.5% exerts an osmotic effect on swollen cerebral tissue and the extracellular space to control intracranial pressure in an attempt to diminish the effects of secondary brain injury. Animal and human studies additionally suggest beneficial vasoregulatory, haemodynamic, neurochemical and immunological properties.<sup>[1-3]</sup>

## Metabolism

Excreted by the kidneys

## Indications

- **Traumatic head injury** with a GCS  $\leq 8$   
AND one or more of the following criteria:
  - fixed dilated pupil/s
  - unilateral neurological signs
  - GCS deterioration of a further 2 points ( $\leq 6$ ) while in QAS care

## Contraindications

- Nil

## Precautions

- Nil in the setting of acute neurotrauma that satisfies the QAS indications listed above

## Side effects

- Phlebitis
- Volume overload
- Renal failure
- Osmotic demyelination syndrome
- HTS induced hypernatraemia
- Electrolyte abnormalities

## Presentation

- Viaflex<sup>®</sup> plastic container, 500 mL *hypertonic saline 7.5%*

## Onset (IV INF)

Immediate

## Duration (IV INF)

Hours

## Half-life

Not applicable

### Schedule

- Unscheduled.

#### Routes of administration

Intravenous infusion (IV INF)



Intraosseous infusion (IO INF)



#### Special notes

- Ambulance officers must only administer medications for the listed indications and dosing range. Any consideration for treatment outside the listed scope of practice requires mandatory approval via the *QAS Clinical Consultation and Advice Line*.
- Transfusion of packed red blood cells must be independent of a HTS infusion.

### Adult dosages<sup>[1-3]</sup>

**Traumatic head injury with GCS ≤ 8 AND one or more of the following criteria:**

- Fixed dilated pupil/s
- Unilateral neurological signs
- GCS deterioration of a further 2 points (≤ 6) while in QAS care



**IV/IO  
INF**

**4 mL/kg over 10 minutes  
Single dose only, not to exceed 500 mL.**

### Paediatric dosages<sup>[1-3]</sup>

**Traumatic head injury with GCS ≤ 8 AND one or more of the following criteria:**

- Fixed dilated pupil/s
- Unilateral neurological signs
- GCS deterioration of a further 2 points (≤ 6) while in QAS care



**IV  
INF**

*QAS Clinical Consultation and Advice Line approval required in all situations.*

**4 mL/kg over 10 minutes  
Single dose only, not to exceed 250 mL.**