## Drug Therapy Protocols: Metaraminol

<table>
<thead>
<tr>
<th>Policy code</th>
<th>DTP_META_0919</th>
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<tbody>
<tr>
<td>Date</td>
<td>September, 2019</td>
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<tr>
<td>Purpose</td>
<td>To ensure a consistent procedural approach to metaraminol administration.</td>
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<tr>
<td>Scope</td>
<td>Applies to all Queensland Ambulance Service (QAS) clinical staff.</td>
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<tr>
<td>Health care setting</td>
<td>Pre-hospital assessment and treatment.</td>
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<tr>
<td>Population</td>
<td>Applies to all ages unless specifically mentioned.</td>
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<tr>
<td>Source of funding</td>
<td>Internal – 100%</td>
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<tr>
<td>Author</td>
<td>Clinical Quality &amp; Patient Safety Unit, QAS</td>
</tr>
<tr>
<td>Review date</td>
<td>September, 2022</td>
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All feedback and suggestions are welcome. Please forward to: Clinical.Guidelines@ambulance.qld.gov.au

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**Metaraminol**

**Drug class**
Sympathomimetic amine

**Pharmacology**
Metaraminol causes release of accumulated noradrenaline from nerve endings which then acts to increase systolic and diastolic blood pressure by directly and indirectly stimulating the alpha receptors in the sympathetic nervous system. This alpha stimulation causes vasoconstriction of the blood vessels. It also has a positive inotropic effect on the heart.[1,2]

**Metabolism**
Hepatic.[1]

**Indications**
- Hypotension (without hypovolaemia)
- Prevention and treatment of the acute hypotensive state occurring with anaesthesia

**Precautions**
- Ischaemic heart disease
- Thyroid disease
- Hypertension
- Diabetes

**Side effects**
- Tissue necrosis if extravasation occurs
- Reduced blood flow to 'non vital' (skin and gut) organs

**Contraindications**
- Allergy and/or Adverse Drug Reaction
- Current MAOI therapy
- Pregnancy
- Hypovolaemia secondary to ongoing haemorrhage

**Presentation**
- Injection (prefilled syringe), 2.5 mg/5 mL metaraminol

**Onset (IV)** | **Duration (IV)** | **Half-life**
--- | --- | ---
1–2 minutes | up to 20 minutes | Minutes
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 Consult and Advice Line.
- Rapid excessive hypertension may precipitate APO, cardiac arrhythmias, cerebral haemorrhage or cardiac arrest.
- Failure to prepare the metaraminol syringe in accordance with the documented instructions may lead to excessive bolus doses being administered.
- All cannulae/EZ-IO® and IV lines must be flushed thoroughly with sodium chloride 0.9% following each medication administration.

Adult dosages

- **Hypotension** (without hypovolaemia)
- Prevention and treatment of the acute hypotensive state occurring with anaesthesia

<table>
<thead>
<tr>
<th>Routes of administration</th>
<th>Adult dosages</th>
<th>Paediatric dosages</th>
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</thead>
<tbody>
<tr>
<td>Intravenous injection (IV)</td>
<td>IV/IO 0.5 mg</td>
<td>Repeated at 1 minute intervals. No maximum dose.</td>
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<tr>
<td>Intraosseous injection (IO)</td>
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</table>

**Note:** QAS officers are NOT authorised to administer metaraminol to paediatric patients.
### Metaraminol 2.5 mg/5 mL pre-filled syringe instructions

1. Remove the metaraminol pre-filled syringe from the packaging.
2. Check that the syringe tip cap is in place.
3. Inspect clarity – solution should be clear, colourless and free of particulate matter.
4. Depress the plunger to release stopper seal.
5. Complete the required drug checks (refer to *QAS Drug Management Code of Practice*).
6. With a gentle twisting motion remove the blue end cap from the syringe ensuring that there is no touch contamination of the sterile luer connection.
7. Confirm the syringe seal tip has been completely removed.
8. Hold the syringe upright and expel the air.
9. Connect the syringe to the patient’s vascular access device.
10. Gently push the syringe plunger to administer the required metaraminol dose.
11. Monitor the insertion site for signs of extravasation.
12. Recap the metaraminol syringe with the blue end cap ensuring that there is no touch contamination of the sterile luer connection.
13. At the completion of the case ensure the syringe is discarded in accordance with the *QAS Infection Control Framework*. 