



ADULT Medication Monograph

# MAGNESIUM

(Oral, IV injection and IV infusion)

This document should be read in conjunction with this [DISCLAIMER](#)

[Formulary: Unrestricted](#)



 **HIGH RISK Medication**

<b>Class</b>	Electrolyte / Mineral
<b>Presentation</b>	<p><b>IV Infusion Bag:</b> Magnesium Sulphate 8g in 100mL WFI (8%) (contains approx. <b>32mmol Magnesium</b>)</p> <p><b>Ampoule:</b> 10mmol/5mL (2.47g MgSO<sub>4</sub> in 5mL) (each 5mL contains <b>10mmol Magnesium</b> &amp; 10mmol Sulphate ions)</p> <p><b>Oral Tablets:</b></p> <p><i>Mag-Sup®:</i> Magnesium aspartate dehydrate 500mg (contains <b>1.55mmol Magnesium</b> or 37.4mg)</p> <p><i>BioMagnesium®:</i> Magnesium oxide - heavy 440mg, Magnesium phosphate 175mg, and calcium ascorbate 50mg, pyridoxine B6 50mg, cholecalciferol 2.5microg, manganese 4mg. (contains <b>12.3mmol Magnesium</b> or 300mg)</p>
<b>Storage</b>	Store at room temperature, below 25°C
<b>Dose</b>	<p><b><u>Pre-eclampsia/Eclampsia/Neuroprotection of the Fetus (use 32mmol Infusion Bag)</u></b></p> <p><b>IV infusion:</b></p> <p>Refer to <a href="#">Hypertension in pregnancy: Magnesium anticonvulsant therapy</a> and <a href="#">Magnesium Sulfate for neuroprotection of the fetus</a></p> <p><b><u>Recurrent seizures/eclampsia occurring during prophylaxis (use 32mmol Infusion Bag)</u></b></p> <p><b>IV infusion:</b></p> <p>Refer to <a href="#">Hypertension in pregnancy: Magnesium anticonvulsant therapy</a></p> <p><b><u>Advanced Life Support (use ampoules)</u></b></p> <p><b>IV injection:</b></p> <p>5mmol (2.5mL) bolus. May be repeated once. An infusion of 20mmol over 4 hours may follow.</p>

	<p><b><u>Blunting of Pressor Response to Intubation (use ampoules):</u></b></p> <p><b>IV injection:</b> 5 - 10mmol (2.5mL to 5mL) as part of induction sequence</p> <p><b><u>Leg cramps in pregnancy</u></b></p> <p><b>Oral:</b> <i>Magnesium Aspartate (Mag-Sup®):</i> 2 to 6 tablets daily <i>BioMagnesium®:</i> 1 tablet daily</p>
<b>Administration</b>	<p><b><u>IV infusion (32mmol infusion bag)</u></b> Infusion must be administered via a controlled infusion device</p> <p><b><u>IV Infusion (using ampoules):</u></b> <i>Preparation as per Option B below. Practical example as follows:</i> <b><i>Dilution:</i></b> Dilute 5mL in 100mL of Sodium Chloride 0.9%, Glucose 5% or Hartmann's. Concentration is 25mg/mL (0.1mmol/mL of magnesium) <b><i>Administration:</i></b> Infuse over 30 to 60 minutes</p> <p><b><u>IV Injection:</u></b></p> <p style="text-align: center;"><b>Option A (as per anaesthetics)</b></p> <p>Inject undiluted SLOWLY at a maximum rate of 150mg/minute (0.6mmol/minute of magnesium). For example, 5mL bolus is given over 15 minutes (0.3mmol/minute)</p> <p style="text-align: center;"><b>Option B (to facilitate slow administration)</b></p> <p><b><i>Dilution:</i></b> Dilute 5mL ampoule with at least 7.5mL of Sodium Chloride 0.9%, Glucose 5% or Hartmann's. Concentration is 200mg/mL (0.8mmol/mL of magnesium) <b><i>Administration:</i></b> Inject SLOWLY at a maximum rate of 150mg/minute (0.6mmol/minute of magnesium).</p> <p><b><u>Oral</u></b> Should be taken with food.</p>
<b>Pregnancy</b>	<p><b>1<sup>st</sup> Trimester:</b> Safe to use <b>2<sup>nd</sup> Trimester:</b> Safe to use <b>3<sup>rd</sup> Trimester:</b> Safe to use</p>
<b>Breastfeeding</b>	Safe to use
<b>Monitoring</b>	<p><b><u>IV:</u></b> Blood pressure, heart rate, respiratory rate, oxygen saturation, urine</p>

	<p>output and deep tendon reflexes.</p> <p>Cease infusion if:</p> <ul style="list-style-type: none"> <li>• Absent patella reflexes</li> <li>• Urinary output &lt;30mL/hour</li> <li>• Respiratory depression <math>\leq 12</math> breaths/minute</li> <li>• Respiratory arrest</li> </ul> <p>Monitor for signs of magnesium toxicity: nausea, vomiting, flushing, hypotension, muscle weakness, muscle paralysis, blurred or double vision, CNS depression and loss of reflexes.</p> <p>More severe hypermagnesaemia may result in respiratory depression, respiratory paralysis, renal failure, coma, cardiac arrhythmias and cardiac arrest.</p> <p><b>Treatment of toxicity:</b></p> <ul style="list-style-type: none"> <li>• <a href="#">Calcium gluconate</a> 1g/10mL IV over 3-10 minutes</li> </ul> <p>Concurrent use with <a href="#">nifedipine</a> may increase the risk of hypotension</p>
<p><b>Clinical Guidelines and Policies</b></p>	<p><b>KEMH Clinical Guidelines:</b></p> <p><a href="#">Hypertension in Pregnancy: Medical Management</a></p> <p><a href="#">Hypertension in pregnancy: Magnesium anticonvulsant therapy</a></p> <p><a href="#">Magnesium sulfate for neuroprotection of the fetus</a></p> <p><a href="#">Preterm Labour</a></p> <p><a href="#">Recognising and Responding to Clinical Deterioration</a></p> <p><a href="#">Adult Resuscitation Protocols</a></p> <p><b>KEMH Pharmaceutical &amp; Medicines Management Guidelines:</b></p> <p>KEMH Pharmaceutical &amp; Medicines Management Guideline: <a href="#">Medication Administration</a></p> <p><a href="#">Injectable Drugs Handbook - Procedure for Reconstitution and Administration of Intravenous Medications</a></p>
<p><b>References</b></p>	<p>Australian Medicines Handbook. Magnesium Sulphate. In: Australian Medicines Handbook [Internet]. Adelaide (South Australia): Australian Medicines Handbook; 2020 [cited 2020 Apr 7]. Available from: <a href="https://amhonline-amh-net-au">https://amhonline-amh-net-au</a></p> <p>Australian Medicines Handbook. Magnesium. In: Australian Medicines Handbook [Internet]. Adelaide (South Australia): Australian Medicines Handbook; 2020 [cited 2020 Apr 7]. Available from: <a href="https://amhonline.amh.net.au/">https://amhonline.amh.net.au/</a></p> <p>The Royal Women's Hospital. Magnesium. In: Pregnancy and Breastfeeding Medicines Guide [Internet]. Parkville (Victoria): The Royal Women's Hospital; 2020 [cited 2020 Apr 7]. Available from:</p>

	<p><a href="https://thewomenspbmg.org.au/">https://thewomenspbmg.org.au/</a></p> <p>MIMS Australia. Mag-Sup. In: MIMS Online [Internet]. St Leonards (New South Wales): MIMS Australia; 2020 [cited 2020 Apr 7]. Available from: <a href="https://www.mimsonline.com.au">https://www.mimsonline.com.au</a></p> <p>Society of Hospital Pharmacists of Australia. Magnesium Sulphate. In: Australian Injectable Drugs Handbook [Internet]. [St Leonards, New South Wales]: Health Communication Network; 2020 [cited 2020 APR 7]. Available from: <a href="https://aidh-hcn-com-au">https://aidh-hcn-com-au</a>.</p>
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<p><b>Printed or personally saved electronic copies of this document are considered uncontrolled.</b></p> <p><b>Access the current version from the WNHS website.</b></p> <p><b>For any enquiries relating to this guideline, please email <a href="mailto:KEMH.PharmacyAdmin@health.wa.gov.au">KEMH.PharmacyAdmin@health.wa.gov.au</a></b></p>			

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