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# Magnesium Sulphate for Neonatal Neuro-protection Guideline

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Brief Summary of Document:	Magnesium Sulphate for Neonatal Neuro-protection
Scope	

To be read in conjunction with:	
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Owning group	Obstetric Written Documentation Review Group
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Reviews and updates		
Version no:	Summary of Amendments:	Date Approved:
1	New Guideline	14.9.2017

## Glossary of terms

Term	Definition

Keywords	Magnesium Sulphate for Neonatal Neuro-protection
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## 1. OVERVIEW

Magnesium sulphate can prevent neurological damage in pre-term infants.

Magnesium sulphate is routinely used for seizure prophylaxis in severe pre-eclampsia and the abolition of fits in eclampsia. There is an increasing body of evidence that magnesium sulphate used in high dose reduces the incidence of cerebral palsy in preterm infants.

A total dose of 4-10.5 gm lies within the 'therapeutic window' and provides safe and effective reduction in the incidence of cerebral palsy.

There is evidence that magnesium sulphate, irrespective of the dose, is not tocolytic and does not suppress labour.

## 2. WHEN SHOULD IT BE CONSIDERED.

- Antenatal magnesium sulphate administration should be considered for fetal neuroprotection in women with imminent preterm birth ( $\leq 31+6$  weeks).
- Antenatal magnesium sulphate for fetal neuroprotection should be considered from viability to  $\leq 31+6$  weeks gestation.
- Magnesium sulphate should be discontinued if delivery is no longer imminent or a maximum of 24 hours of therapy has been given.
- Neonatal services in GGH have services to care for babies  $\geq 32/40$  gestation. Ensure that transferring unit is informed if MGSO<sub>4</sub> has been commenced for neuroprotection and that this is documented on the All Wales In-Utero Transfer proforma.

## 3. ADMINISTRATION

**For women at risk of imminent preterm birth**, antenatal magnesium sulphate for fetal neuroprotection should be administered as a 4g IV loading dose, over 30 minutes, followed by a 1g/hr maintenance infusion until birth.

**For planned preterm birth for fetal or maternal indications**, magnesium sulphate should be started, ideally within 4 hours before birth, as a 4g IV loading dose, over 30 minutes, followed by a 1g/hr maintenance infusion until birth.

**Loading dose = 4g.**

**Magnesium Sulphate by slow IV bolus over 30 minutes.**

**Draw up 8mls of 50% Magnesium Sulphate solution(4g) followed by 12mls of NaCl 0.9% into a 20ml syringe.**

**This will give a total volume of 20mls. This can be administered in a syringe driver over 30 minutes.**

**Maintenance infusion = 1g/hour.**

**Draw up 20ml of 50% Magnesium Sulphate (10g) followed by 30ml of NaCl).9% into a 50 ml syringe. This will give a total volume of 50mls.**

**Set syringe driver to infuse at 5mls/hr.**

**This should last for ten hours. Continue the infusion until delivery.**

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## Administration FAQs

- If antenatal magnesium sulphate has been started for fetal neuroprotection, tocolysis can be continued.  
If Nifedipine has been used for tocolysis or hypertension there is NO contraindication for the use of magnesium sulphate for neuroprotection.
- Delivery should not be delayed in order to administer antenatal magnesium sulphate for fetal neuroprotection if there are maternal and/or fetal indications for emergency delivery.
- Magnesium sulphate should be discontinued if delivery is no longer imminent or a maximum of 24 hours of therapy has been administered.

**There is insufficient evidence to repeat courses of antenatal magnesium sulphate for fetal neuroprotection**

## 4. MONITORING

When magnesium sulphate is given for fetal neuroprotection, maternity care providers should use existing guidelines to monitor women who are receiving magnesium sulphate for preeclampsia/eclampsia. **This should take place on Labour Ward.**

Indications for fetal heart rate monitoring in women receiving antenatal magnesium sulphate for neuroprotection should follow the local fetal monitoring recommendations.

Since magnesium sulphate has the potential to alter the neonate's neurological status; causing hypotonia or apnoea, health care providers caring for the neonate should have an increased awareness of this effect. Please refer to the neonatologist for further advice.

Monitoring of serum Mg level is not required.

## 5. REFERENCES

1. <http://www.adelaide.edu.au/arch/antenatalMagnesiumSulphateGuidelines.pdf>
2. <http://www.rcog.org.uk/womens-health/clinical-guidance/magnesium-sulphate-prevent-cerebral-palsy-following-preterm-birth-sa>
3. <http://sogc.org/wp-content/uploads/2013/01/gui258CPG1106E.pdf>

## 6. AUDITABLE STANDARDS

1. All women in whom 'opportunistic' steroids are considered.
2. Management plan to include use of MgSO<sub>4</sub> to prevent neurological damage
3. Neonatal outcome in preterm infants