

Antenatal magnesium sulphate (MgSO₄) prior to preterm birth for neuroprotection of the fetus, infant and child



When to give MgSO₄?

- Gestational age < 30 weeks
- Birth planned or definitely expected within 24 hours

Give MgSO₄ regardless of :

- plurality
- parity
- reason at risk of preterm birth
- whether antenatal corticosteroids have been given or not
- anticipated mode of birth

What/When to administer?

MgSO₄ intravenously using a **dedicated** intravenous line:

- Commence MgSO₄ as close to four hours before birth as possible.
- Loading: 4g dose (slowly over 20-30 minutes).
- Maintenance: 1g/hour for up to 24 hours or until birth, whichever comes first.

When urgent delivery/birth needed:

- Do not delay delivery to administer MgSO₄

What if birth does not occur within 24 hours?

- Once 6 hours has transpired following the cessation of the 24 hour maintenance dose, a further loading and maintenance infusion may be considered.

How to monitor women?

- Monitoring is essential for both loading and maintenance doses.
- Monitor **pulse, blood pressure, respiratory rate** and **patellar reflexes**: (a) before loading infusion (b) 10 mins after starting infusion (c) after loading infusion is complete (d) every 4 hours during the maintenance infusion.
- Resuscitation and ventilator support should be available during and after administration of both magnesium sulphate and calcium gluconate.

When to stop MgSO₄ administration?

- Urine output <100mL in 4 hours
- Absent patellar reflexes
- Respiratory depression (< 12 breaths/min)
- Hypotension (diastolic BP < 15 mm Hg below baseline).

→ **If Magnesium toxicity occurs:** Stop MgSO₄ infusion and administer antidote of calcium gluconate (10mL of 10% solution slowly intravenously over approx. 10 minutes).

Potential interactions between MgSO₄ and nifedipine may result in hypotension and neuromuscular blockade effects. If such interactions are evident, cease nifedipine and MgSO₄ infusion and seek medical review.