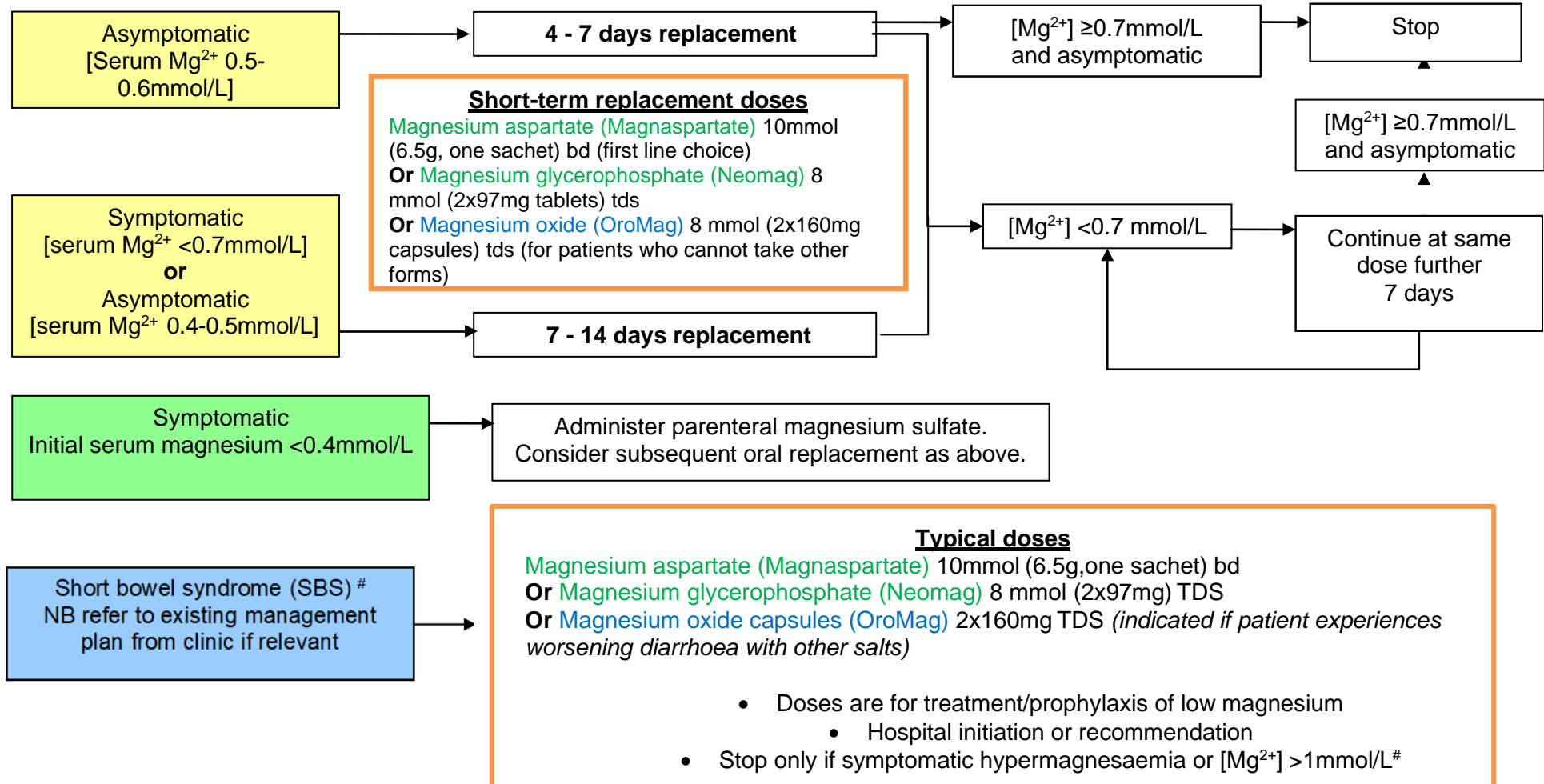


Oral Magnesium Supplementation Guide (Adults) 2023



N.B. If eGFR<30ml/min/1.73m² (increased risk of toxicity) – above doses should normally be halved

Key **Yellow** = refeeding syndrome or general deficiency states

Green = all patients

Blue = short bowel syndrome only



Monitoring

Serum $[Mg^{2+}]$ reference range 0.7 -1.0 mmol/L. Mild asymptomatic hypomagnesaemia ($[Mg^{2+}] >0.6$ mmol/L) does not usually require treatment but if started, replacement should be continued until $[Mg^{2+}] >0.7$ mmol/L. Initially monitor serum $[Mg^{2+}]$ every week (more frequently if $eGFR < 30$ ml/min/1.73m²). A single measurement at the end of treatment is sufficient if taken for 7 days or less. If giving for more than 2 weeks, monitor levels every 1-2 weeks or if symptoms persist.

Refeeding/general deficiency - therapy can usually be stopped once serum $[Mg^{2+}] \geq 0.7$ mmol/L and the patient is asymptomatic, however if hypomagnesaemia is chronic or recurrent or the patient has poor nutritional status it may be appropriate to continue until $[Mg^{2+}] \approx 1.0$ mmol/L to ensure that total body repletion is achieved.

#Short bowel syndrome - the frequency of monitoring depends on the clinical status of the patient. In most situations checking serum $[Mg^{2+}]$ once a month is sufficient but take into account any advice given by a hospital specialist or clinic. Mild asymptomatic hypomagnesaemia may occur despite ongoing supplementation and does not require additional action. Check $[Mg^{2+}]$ if the patient presents with symptoms of hypomagnesaemia. Stop magnesium supplements if $[Mg^{2+}] > 1$ mmol/L and recheck in 5-7 days. If $[Mg^{2+}] < 0.4$ mmol/L and the patient is symptomatic a dose of parenteral magnesium sulfate may be required. Seek advice from a consultant gastroenterologist, or nutrition nurse specialist if there is recurrent symptomatic hypomagnesaemia.

Medication information

- Magnesium aspartate dihydrate (Magnaspartate) comes as a 6.5g sachet of powder (equivalent to 10mmol magnesium) for oral solution. It is licensed for the treatment and prevention of magnesium deficiency. Bioavailability of magnesium aspartate is greater than from magnesium oxide.
- Magnesium glycerophosphate (Neomag) is chewable tablet. It is licensed for prevention of recurrence of a magnesium deficit. It is also available as an oral solution but this is an unlicensed formulation, for use only when other forms of magnesium cannot be swallowed.

A licensed preparation should always be used as a first choice agent, unless there is a patient specific need for one of the unlicensed preparations. This ensures quality, safety & efficacy.

- Magnesium oxide (OroMag) is an unlicensed medicine and blue on the BNSSG Formulary. It is generally reserved for prescribing on the advice of a Consultant Gastroenterologist for use in Short Bowel patients or for patients who don't like the large magnesium glycerophosphate tablets or the aspartate powder. It is suitable for vegetarians; soya and peanut free; gelatine free; gluten free; alcohol free.
- MagTabs (magnesium lactate) is an unlicensed preparation that may be prescribed by renal the renal team to patients with renal tubular disorders. It has no role the management of hypomagnesaemia due to short bowel or refeeding syndrome (red on BNSS Formulary).

Further clinical advice

- Further advice about the diagnosis and management of hypomagnesaemia may be obtained from Clinical Biochemistry, or from Gastroenterology if known to be due to increased gastrointestinal losses. Hospital admission for intravenous magnesium infusion should be



discussed with the relevant specialist team if the patient is already under secondary care, or with the acute medical team.

Adverse effects of Magnesium supplements

Diarrhoea Hypermagnesaemia Hypersensitivity

Magnesium is excreted mainly by the kidneys and is therefore retained in renal failure. Adverse effects may be greater in patients with severe renal impairment (eGFR<30ml/min/1.73m²) so consider halving doses.

Symptoms of hypomagnesaemia

Muscle weakness	Vertigo
Ataxia	Hyperinsulinism
Tremor	Seizures
Carpopedal spasm	
Ventricular arrhythmias, ECG abnormalities	
Depression, psychosis	

Symptoms of hypermagnesaemia

Respiratory depression	Confusion
Loss of deep tendon reflexes	Nausea,
vomiting	
Flushing of the skin	Thirst
Hypotension due to peripheral vasodilatation	Drowsiness
Slurred speech, double vision	Muscle
weakness	
Bradycardia	Coma

Drug interactions

Magnesium taken orally may reduce the absorption of tetracyclines or bisphosphonates. Magnesium salts may reduce absorption of other drugs (this is not necessarily clinically significant but it is best to avoid taking doses together): ACE inhibitors, rifampicin, quinolone antibiotics, isoniazid, azithromycin, cefaclor, gabapentin, phenytoin, itraconazole, ketoconazole, chloroquine, hydroxychloroquine, phenothiazides, atazanavir, digoxin, dipyridamole, rosuvastatin, mycophenolate, penicillamine, levothyroxine, ulipristal. Separate doses from magnesium by as long as possible.

Advice to the patient

It is best to take magnesium supplements with a meal to reduce stomach upset and diarrhoea unless otherwise directed by the product instructions or your doctor.