

Always follow local guidelines and discuss with Senior if unsure
Especially patients with significant fluid / electrolyte losses or those with co-morbidities such as Heart / Renal Failure

Normal range: 0.7 - 1.1mmol/L

SIGNS AND SYMPTOMS

MILD

0.5-0.7 mmol/L

MODERATE - SEVERE

<0.5 mmol/L

Usually Mild / Asymptomatic

- Muscle weakness
- Paraesthesia
- No ECG changes

- Muscle weakness
- Ataxia
- Vertigo
- Seizures
- Depression / Psychosis

Commonly cause secondary:

- Hypokalaemia
- Hypocalcaemia

- ECG changes:
 - PR prolongation
 - QT prolongation
 - T wave inversion
 - P wave inversion
- Arrhythmias:
 - VT
 - VF
 - Torsades de Pointes

CAUSES

ABNORMAL LOSSES

REDUCED INTAKE

Medications:

- Diuretics
- Gentamicin
- Digoxin
- PPI

- Starvation
- Malnutrition
- Re-feeding Syndrome
- Long term IV nutrition
- Chronic Alcoholism

GI losses:

- Acute pancreatitis
- Malabsorption
- Diarrhoea

METABOLIC / ENDOCRINE

- Hyperaldosteronism
- Hyperthyroid
- Hyperparathyroidism
- DKA

Renal losses:

- Osmotic diuresis
- Acute tubular necrosis

Up to 5 days of oral treatment usually required as magnesium levels may be artificially high while equilibrating with intracellular compartment

Monitoring

- Consider cardiac monitor during IV infusion (check with senior)
- Monitor BP / Heart rate / RR during IV infusion
- Monitor serum Magnesium daily during replacement

Caution should be used in following patients:

- Renal impairment
- Myasthenia gravis
- Hepatic impairment
- Heart block
- Concurrent medications:
 - Digoxin
 - Barbiturates / Opioids / Hypnotics

Always consult BNF for dose / administration and contraindications for all above medications

If patient at risk / has RE-FEEDING SYNDROME - see linked document for further advice