

<h1>Magnesium</h1>	
Description	Second most abundant intracellular cation. Cofactor in enzymatic reactions, particularly those involving the formation and utilisation of ATP.
Indication	Diagnosis and monitoring of hypo- and hypermagnesaemia. Hypomagnesaemia should be considered in the following: cardiac dysrhythmias, alcoholism, prolonged diarrhoea, TPN, unexplained hypocalcaemia or hypokalaemia.
Additional Info	Less than 0.5 % of the total body magnesium is present in the serum and therefore serum levels may not accurately reflect the overall magnesium status. Thus, a normal serum magnesium does not rule out deficiency. Hypomagnesaemia often coexists with hypokalaemia and hypocalcaemia. In such cases the hypokalaemia and hypocalcaemia will be resistant to treatment until the magnesium is adequately replaced.
Concurrent Tests	Potassium, calcium, PTH
Dietary Requirements	N/A
Interpretation	<p><u>Hypomagnesaemia</u>: May be symptomatic at serum levels <0.5 mmol/L. May be due to inadequate intake e.g. alcoholism, or gastrointestinal disturbances causing malabsorption e.g. IBD. Hyperaldosteronism, hyperparathyroidism, nephrotoxic drugs (e.g. cisplatin, amphotericin and cyclosporin) and diuretics may also cause hypomagnesaemia due to increased urinary loss, as may conditions causing an osmotic diuresis e.g. diabetes mellitus. Intracellular shifts e.g. refeeding syndrome can also cause hypomagnesaemia. Rare causes include the inherited disorders of renal reabsorption e.g. Gitelman's syndrome.</p> <p><u>Hypermagnesaemia</u>: Not usually symptomatic until serum concentration >3.0 mmol/L. May be caused by acute or chronic renal failure due to reduced glomerular filtration or magnesium overload e.g. the use of magnesium-containing antacids. Renal excretion of excess magnesium is very efficient, so iatrogenic hypermagnesaemia is often associated with concomitant renal disease. A common cause is the use of magnesium sulphate in the treatment of eclampsia.</p>
Collection Conditions	N/A
Frequency of testing	As required

