Potassium (Serum)

Description	Most abundant intracellular cation. Part of U&E profile.
Indication	Diagnosis and monitoring of hypo and hyperkalaemia. Hypokalaemia should be considered in the following: alcoholism, anorexia, prolonged diarrhoea, alkalosis, hypomagnesaemia and diuretic use. Hyperkalaemia should be considered in: renal failure, acidosis and when ECG changes are present (tented T waves).
Additional Info	Hypokalaemia may coexist with hypomagnesaemia. In such cases the hypokalaemia will be resistant to treatment until the magnesium is adequately replaced.
Concurrent Tests	Magnesium, phosphate
Dietary Requirements	N/A
Interpretation	Hypokalaemia (< 3.5 mmol/L). Intracellular shifts e.g. refeeding syndrome, insulin administration and alkalosis can cause hypokalaemia. Other common causes include: inadequate intake e.g. alcoholism or malabsorption (e.g. IBD), extrarenal loss e.g. diarrhoea and vomiting and renal loss e.g. diuretics, nephrotoxic drugs (e.g. cisplatin) and conditions of hyperaldosteronism (e.g. Conn's syndrome). Rare causes include the inherited disorders of renal reabsorption (e.g. Gitelman's syndrome) and renal tubular acidosis (RTA) i.e. type 1 (classic distal RTA) and type 2 (proximal RTA). Hyperkalaemia. (>5.9 mmol/L). Due to the high intracellular concentration of potassium compared to the extracellular concentration, any leakage of cellular potassium can raise the serum concentration significantly. Artefactual causes e.g. haemolysis, high white blood cell or platelet count and storage of samples at low temperature should be excluded. Causes of in vivo cellular redistribution include: acidosis and tissue damage (e.g. tumour lysis syndrome or rhabdomyolysis). A common cause of hyperkalaemia is decreased renal clearance due to reduced glomerular filtration e.g. chronic or acute renal failure. Reduced renal tubular secretion e.g. potassium sparing diuretics and hypoaldosteronism can also cause hyperkalaemia. Addison's disease should be considered in any patient presenting with hyponatraemia and hyperkalaemia.
Collection Conditions	DO NOT refrigerate samples. Avoid haemolysis.
Frequency of testing	As required.