

Intact PTH	
Description	Parathyroid hormone (PTH) is an 84 amino acid polypeptide released by the parathyroid gland.
Indication	PTH is measured as part of the investigation into calcium homeostasis.
Additional Info	Biological activity resides in the N-terminal portion of the molecule (1–34). Metabolism is via the liver and kidneys. PTH is secreted by the parathyroid gland in response to a decrease in serum ionised calcium concentration. PTH acts to increase serum calcium and decrease phosphate and bicarbonate. Although PTH increases the tubular reabsorption of calcium in the kidneys, its action on bone mobilises calcium into the extracellular fluid and thus increases the amount of calcium filtered by the glomeruli. The overall effect of this is to produce a hypocalciuria. Since release from the gland is magnesium dependant, severe hypomagnesaemia will reduce its secretion.
Concurrent Tests	Calcium profile, magnesium, 25-OH vitamin D
Dietary Requirements	N/A
Interpretation	PTH results should be used in conjunction with plasma calcium adjusted for albumin (ACa) in the diagnosis of hypo and hyperparathyroidism and other causes of hypercalcaemia. A PTH >3pmol/L is inappropriate if ACa is raised in a patient with normal renal function and is usually indicative of primary hyperparathyroidism. A raised calcium with suppressed PTH can be found in non-parathyroid causes of hypercalcaemia including malignancy. PTH is raised in many patients with chronic renal disease. This is partly in response to reduced 1,25 OH vitamin D production causing decreased calcium. PTH estimation in renal patients is used to monitor the adequacy of vitamin D/Ca supplementation.
Collection Conditions	EDTA plasma required. Ideally between 9.00 and 12.00. Samples should be transported to the lab as quickly as possible due to the labile nature of PTH
Frequency of testing	Chronic condition monitoring should take place on a 6 monthly basis. In acute conditions, concentrations of PTH can change quite rapidly, and should be discussed with the laboratory prior to sampling