

Phosphate (plasma)

Description	85% of total body phosphorous (P) is complexed as hydroxyapatite in bone. 14% is incorporated into cellular macromolecules within the tissues and only 1% of total body phosphorus is present in extracellular fluids. Phosphate (PO ₄) is the level of inorganic phosphate in serum, plasma and urine. Phosphate is required for high energy reactions involving adenine and guanine dinucleotides.
Indication	Phosphate is measured as part of Ca/bone profile.
Additional Info	Haemolysis causes an increase in the measured serum/plasma phosphate due to release of intracellular phosphate. Therefore for accurate quantification haemolysis should be avoided.
Concurrent Tests	Calcium profile, 25 OH Vit D, PTH, FGF23
Dietary Requirements	N/A
Interpretation	Serum/Plasma phosphate reference range is 0.80-1.50 mmol/L. Mild hypophosphataemia (0.40 –0.80 mmol/L) is not harmful in the short term, but if chronic may induce osteomalacia. Severe hypophosphataemia (<0.40 mmol/L). Persistent low phosphate may indicate congenital causes of rickets such as X-linked hypophosphataemic rickets or oncogenic osteomalacia.
Collection Conditions	Serum Gel (Sarstedt brown top) is the preferred sample type. Plain Serum (Sarstedt white top) and Lithium Heparin (Sarstedt orange top) are also acceptable.
Frequency of testing	Acute setting – repeat testing at 48 hour intervals as part of bone profile. Non-acute setting – repeat testing at 3 monthly intervals as part of bone profile unless earlier re-testing is clinically indicated. Acute hypo/hypercalcaemia, TPN and ITU patients may require more frequent monitoring.