

Ionised Calcium	
Description	<p>Calcium is a divalent cation with multiple roles. These can be broadly divided into structural and metabolic. Its structural role is in the skeleton where calcium deficiency leads to mechanical failure, either in the form of osteoporosis or osteomalacia. Its metabolic roles are numerous.</p> <p>In plasma 40% of calcium is protein bound, 10% is inorganic complexes and 50% is free (ionized) calcium. It is the ionized fraction that is physiologically active and it is this fraction that PTH responds to and regulates.</p>
Indication	<p>HYPERCALCAEMIA: May be clinically associated with fatigue, anorexia, weight loss, bone pain, nausea, polyuria, mental changes. Renal stones (hyperparathyroidism) and acute pancreatitis may also occur. Causes - most common cause in hospitalised patients is malignancy whereas in outpatients it is primary hyperparathyroidism. Other causes include vitamin D excess, thyrotoxicosis, sarcoidosis, tertiary hyperparathyroidism, PTHrP, lithium treatment, milk alkali syndrome, thiazide diuretics, immobilisation, Pagets, Addison's (rarely), acromegaly (occasionally) and familial hypocalcaemic hypercalcaemia (FHH).</p> <p>HYPOCALCAEMIA: May be asymptomatic or cause tetany, cataracts, depression (or other psychiatric problems). Causes include hypoalbuminaemia and chronic renal disease (no symptoms as the ionised levels are normal). Vitamin D deficiency (malabsorption or lack sunlight), renal failure and hypoparathyroidism (usually surgical). Also magnesium deficiency, acute pancreatitis, blood transfusions and during conditions resulting in shock.</p>
Additional Info	Ionised calcium is available by special request following the sampling procedure for blood gas analysis.
Concurrent Tests	Phosphate, albumin 25-hydroxy vitamin D, magnesium and PTH
Dietary Requirements	N/A
Interpretation	See algorithm on webpage
Collection Conditions	Arterial/venous blood specimen in a heparinised syringe should be sent to the lab immediately on ice. Do NOT use pneumatic tube.
Frequency of testing	N/A