

1,25 Dihydroxy vitamin D	
Description	1,25 Dihydroxy vitamin D
Indication	To evaluate bone and mineral disorders such as rickets, renal osteodystrophy and osteomalacia and sarcoidosis. To aid the investigation of hypercalcemia, vitamin D deficiency/toxicity and parathyroid diseases.
Additional Info	Circulating vitamin D is bound to a vitamin D-binding protein. It is then transported to the liver, where it is hydroxylated to form 25-hydroxy vitamin D. Further hydroxylation occurs at the kidney where the biologically active metabolite 1,25 dihydroxy vitamin D is produced. This form of vitamin D promotes calcium absorption in the small intestine and increases the resorption of calcium from bone.
Concurrent Tests	Calcium profile, 25-hydroxy vitamin D, PTH
Dietary Requirements	None
Interpretation	<p>Low 1,25-dihydroxy vitamin D may suggest severe vitamin D deficiency and the possibility that osteomalacia is present, but cannot prove its presence.</p> <p>In vitamin D deficiency plasma 1,25-dihydroxy vitamin D levels may be normal or even raised. This is due to the compensatory secondary hyperparathyroidism, a greater proportion of 25-hydroxy vitamin D is converted to 1,25-dihydroxy vitamin D in order to maintain normocalcaemia. Eventually when production is depleted an overt hypocalcaemia and hypophosphataemia occur and osteomalacia may follow.</p> <p>Osteomalacia may also occur from deficiency of the renal 1α-hydroxylase enzyme or from defective action of the 1,25-dihydroxy vitamin D receptor. Deficiency of the renal 1α-hydroxylase enzyme can occur in chronic renal failure, or can occur as a rare autosomal recessive disorder known as vitamin D dependent rickets type I (VDDR). In VDDR type I the 25-hydroxy vitamin D is normal but the 1,25-dihydroxy vitamin D is low. In VDDR type II the clinical picture is similar to VDDR type I but it is the receptor that is abnormal and the 25-hydroxy vitamin D is normal but the 1,25-dihydroxy vitamin D is high.</p> <p>High levels of 1,25-dihydroxy vitamin D may also be seen in primary hyperparathyroidism, in granulomatous disease such as sarcoid or TB (extra renal 1 hydroxylase activity) and in patients taking excess calcitriol.</p>

Collection Conditions	N/A
Frequency of testing	Contact lab before requesting