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| 25-hydroxycholecalciferol (Vitamin D) | | | |
| **Synonyms** | |  | 25-OHCC |
| **Clinical Indication** | |  | 25-hydroxycholecalciferol (25-D), the hepatic precursor to the biologically active 1,25 dihydroxycholecalciferol (1,25-D), is the major circulating metabolite of vitamin D. Measurement of 25-D provides a satisfactory index of vitamin D status for investigation of patients with suspected osteomalcia, rickets or obscure hypo- or hypercalcaemia.  The two most important forms of vitamin D are vitamin D3 (cholecalciferol)  and vitamin D2 (ergocalciferol). In contrast to vitamin D3, the human body  cannot produce vitamin D2 which is taken up with fortified food or given by  supplements. The assay used measures both vitamin D2 and D3.  In most cases monitoring of Vitamin D status especially following replacement is not necessary. If monitoring is necessary levels should not be repeated before 3 months.  Investigation of suspected vitamin D deficiency or toxicity. The following criteria have been agreed:  1. If bone disease is suspected due to clinical or biochemical indicators.  2. Before iv bisphosphonates or denosumab.  3. There is no need to repeat vitamin D levels once supplementation given,  except in patients who may have problems with absorption (e.g. GI  disease) or who were severely deficient on initial measurement and need  to continue on iv. For the majority it is adequate to measure calcium one  month after completing the loading dose. |
| **Part of Profile / See Also** | |  |  |
| **Request Form** | |  | Combined Pathology manual blood request form or ICE request |
| **Availability / Frequency of Analysis** | |  | On request.  Minimum retesting interval is 3 months. |
| **Turnaround Time** | |  | Same day |
| **Patient Preparation** | |  | A fasting sample is preferred but not essential. No further dietary or drug restrictions are required. |
| **Sample Requirements** | |  |  |
|  | **Specimen Type** |  | Serum (or plasma for paediatric samples) |
|  | **Volume** |  | 1 ml |
|  | **Container** |  | Yellow top (SST) tube  Or  Paediatric green top (lithium-heparin)  Or  Paediatric orange top (lithium heparin) |
| **Reference Range & Units** | |  | Most individuals are expected to have 25-OH vitamin D levels between 50 and 150 nmol/L. Levels will be lower during autumn/winter. |
| **Interferences** | |  | Patients on alpha-calcidol may have low results that are not indicative of actual vitamin D status. |
| **Interpretation & Clinical**  **Decision Value (if applicable)** | |  | Less than 25 nmol/L: profound deficiency (associated with high risk of osteomalacia or rickets).  Between 25 and 50 nmol/L: indicates insufficiency.  Between 50 and 75 nmol/L: may be sub-optimal, although these levels are commonly seen in autumn/winter. Please evaluate in light of clinical picture.  Levels above 75 nmol/L indicate optimal VItamin D status, however consistent levels above 250 nmol/L are associated with toxicity. |
| **References** | |  |  |
| **Test code** | |  | VITD |
| **Lab Handling** | |  | Analysed from primary tube and stored at 4°C. |

