**Bone-specific Alkaline Phosphatase**

<table>
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<tr>
<th>Description</th>
<th>Marker of osteoblast activity (bone formation).</th>
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| **Indication** | • to assess activity of disease in Paget’s disease  
• to monitor response to anti-resorptive therapy  
• to confirm patient compliance and assess efficacy of new therapies in patients with metabolic bone disease e.g. osteoporosis, Paget’s disease, primary hyperparathyroidism and metastatic bone disease  
• as a bone marker in renal bone disease when other bone markers are affected by renal clearance |

| **Additional Info** | Bone-specific alkaline phosphatase (bone ALP) constitutes about 40% of serum total ALP in health. It is produced by osteoblasts to provide a high phosphate concentration at the osteoblast cell surface during bone mineralization and is a marker of bone formation. Bone ALP is a more sensitive index of bone formation than total ALP activity.  

High liver ALP activity in serum (e.g. in hepatobiliary disease) can interfere with the measurement of bone ALP since current immunoassays for bone ALP have up to 20% cross-reactivity with the liver isoform despite using isoform-specific monoclonal antibodies. |

| **Concurrent Tests** | N/A |
| **Dietary Requirements** | N/A |

| **Interpretation** | Reference intervals  
Male:  
Female:  
Pre-menopausal  
Post-menopausal  
10 – 40 U/L  
10 – 26 U/L  
14 – 50 U/L  
The least significant change between samples taken at 3-month intervals is +/- 30%.  
Bone ALP levels may remain elevated for up to 6-9 months following healing of bone fractures.  
Paediatric samples and young adults:  
Bone ALP levels are higher in children and young adults, especially during the pubertal growth spurt (levels 4-5 times adult range). |

| **Collection Conditions** | N/A |

| **Frequency of testing** | Single measurements of bone ALP are of limited value. A blood sample should be taken at baseline and 3 months after starting anti-resorptive therapy to monitor response to treatment or disease progression. |