

Alkaline phosphatase (ALP), widely distributed in bone, intestine, kidney and other tissues, is one of the diagnostic indexes for bone disease. The total alkaline phosphatase (TALP) level of patients with osteopenia or osteoporosis is higher than that of normal subjects.

Osteocalcin (OSTEOC), the most abundant proteins in bone and produced exclusively by osteoblasts, was initially believed to be an inhibitor of bone mineralization and now have proved to be a useful indicator of bone formation. The faster the bone regeneration rate, the higher the osteocalcin

value, and vice versa.

Propeptide of type I procollagen (PICP) and procollagen type 1 N-propeptide (P1NP) have been proven to be markers of bone formation. They reflect osteoblasts activity and bone formation rate.

Vitamin D (VIT-D) plays a key role in nutritional risk mediated osteoporosis. Vitamin D deficiency, associated with increased bone turnover, can be an important risk factor for osteoporosis.