


There is a vast list of stated possible causes (1,2) for a low alkaline phosphatase (ALP) level - less than 30IU:

- zinc deficiency
- magnesium deficiency
- hypophosphatasia
 - an inborn error of metabolism, is characterized clinically by defective bone mineralization, resulting in excessive unmineralized bone matrix, and biochemically by deficient activity of the tissue-nonspecific isoenzyme of ALP in tissues and in serum, increased urinary excretion of phosphoethanolamine and inorganic pyrophosphate, increased plasma pyridoxal 5'- phosphate, decreased total serum ALP activity, and radiological, histological, and clinical features of rickets
- cardiac surgery and cardiopulmonary bypass
- artifacts associated with collection of blood in EDTA or oxalate anticoagulant
- **hypothyroidism**
 - associated with low serum ALP activity, which returns to normal after therapy with thyroid hormones
- severe anaemia 
- pernicious anaemia
 - in pernicious anaemia, osteoblast activity is dependent on cobalamin, and bone metabolism is affected by deficiency of cobalamin
 - cobalamin-deficient patients have significantly lower concentrations of serum ALP (skeletal ALP) and osteocalcin than do unaffected control patients
- protein/calorie deficiency
- oestrogen replacement therapy in postmenopausal women
 - oestrogen replacement therapy in postmenopausal women with osteoporosis is associated with low ALP concentrations, an effect attributed to inhibition of bone resorption by oestrogen
- end-stage osteopaenia of chronic renal osteodystrophy
- Wilson's disease
- achondroplasia and hypothyroidism in children
 - in children, decreased or low ALP activity may signal disturbed skeletal growth , the cessation of bone growth, or clinical conditions such as achondroplasia
- vitamin C deficiency
- other conditions that have suggested as possible causes of a low ALP include:
 - milk-alkali syndrome, excess ingestion of vitamin D, coeliac disease, hypoparathyroidism, intake of radioactive heavy metal, drugs such as clofibrate, recent massive blood transfusions, or posthepatic resection and transplantation