

# Evaluation of an Isolated Serum Alkaline Phosphatase (ALP) elevation

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## Possible causes

Further investigations

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## Consider

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**Pregnancy** (increased placental isoenzyme)

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**Age < 20 years** (may be physiological)

Due to the skewed distribution of ALP, levels of up to 400 IU/L are not uncommon in growth periods. Levels higher than this have also been reported.

Post menopausal usually <150 IU/L.

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## ALP Isoenzymes

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**Predominant bone**

Bone scan (if indicated)

Paget's disease

Healing fractures

CKD mineral and bone disorder

Hyperparathyroidism

Hyperthyroidism

Malignancy

(prostate, breast, kidney, lymphoma, etc.)

Osteomalacia/Rickets

(due to Vitamin D deficiency or resistance)

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**Placental (Regan isoenzyme)**

Malignancy (bronchus, ovary, pancreas)

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**Predominant liver**

Cholestatic liver disease

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**THI pattern (child)**

Transient Hyperphosphatasaemia of Infancy.

Typical age < 5 years; very high ALP (> 700).

May follow a viral illness.

Benign and asymptomatic.

High ALP persists for 8-12 weeks.