



Calcium

Synonyms

Ca, adjusted calcium, corrected calcium

Clinical Indication

Hypercalcaemia is often discovered incidentally. There are no specific clinical features. Any of the following may occur: abdominal pain, renal/ureteric colic (due to calculi), bone pain, thirst and polyuria. Hypocalcaemia can cause paraesthesia, muscle cramps and spasm.

Calcium should be measured when hyper- or hypocalcaemia is suspected on clinical grounds, in conditions known to cause disturbance in calcium homeostasis, in patients with known hyper- or hypocalcaemia and as part of the investigation of metabolic bone disease.

Part of Profile / See Also

Bone

Request Form

Combined Pathology manual Blood form or ICE request

Availability / Frequency of Analysis

On request. May be requested urgently.

Turnaround Time

Same day

Patient Preparation

Samples for further investigation of mild hypercalcaemia should be taken fasting.

Sample Requirements

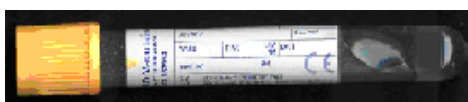
Specimen Type

Serum and plasma.

Volume

2 ml

Acceptable Containers



Yellow top (SST) tube or



Green top (lithium-heparin) tube



paediatric orange top (lithium-heparin) or



paediatric green top (lithium-heparin)

Plain serum samples may also be used.

Do not take blood into an EDTA (purple top) tube.

Reference Range & Units

Calcium is corrected for albumin as follows:

'Adjusted calcium' = measured calcium + (0.0115 x (43.3 - Albumin))

Age	Adjusted Calcium mmol/L
Neonate (<30 days)	2.00 - 2.70
Infant - 16 years	2.20 - 2.70
Adult	2.20 - 2.60

To convert from mg/dL to mmol/L multiply by 0.25

To convert from mmol/L to mg/dL multiply by 4.0

Interferences

Stasis during venepuncture will falsely elevate results. Ideally, blood should ideally be drawn from a vein in which the blood is free flowing (that is, without a tourniquet)

Free or 'ionised' calcium is the biologically active fraction, with the remainder protein bound (principally to albumin) or complexed (primarily with phosphate). Plasma albumin can alter total calcium independent to free calcium, this is accounted for by the 'adjusted calcium' calculation. This formula is unreliable with albumin <25 g/L, abnormal globulins, jaundice, high free fatty acids and in acid/base disturbances.

Interpretation & Clinical
Decision Value (if applicable)

Critical Difference 8%

Critical phoning limits: <1.9 mmol/L and >3.4 mmol/L

References

Reference: Pathology Harmony Group, Clinical Biochemistry Outcomes, January 2011 (www.pathologyharmony.co.uk)
 ACB analyte monographs – calcium (www.acb.org.uk)

Test code

BONE

Lab Handling

Analysed from primary tube and stored at 4°C

Serum and plasma samples stable for 3 weeks at 2-8°C.

Serum and plasma samples stable for 7 days at 15-25°C.