

INDICATION

Determines if a patient with acidosis has an elevated anion gap. Corrects for albumin.

This may assist in determining the cause of the acidosis

INTERPRETATION

Normal Anion gap = 4 - 12_{mmol/L}

ANION GAP	POTENTIAL CAUSES OF METABOLIC ACIDOSIS
<4 Low	Causes <ul style="list-style-type: none">• Non random analytical errors• Increase in unmeasured cations (multimyeloma, hypercalcaemia, hypermagnesaemia, lithium OD, polymixin)• Bromide OD (causes falsely elevated chloride)
4-12 Normal	<i>Results from loss of HCO3- from extracellular fluid</i> Causes (CAGE) <ul style="list-style-type: none">• Chloride excess• Acetazolamide/Addisons• GI causes• Extra – RTA Causes (ABCD) <ul style="list-style-type: none">• Addisons (adrenal insufficiency)• Bicarbonate loss (GI or Renal)• Chloride excess• Diuretics (Acetazolamide)
>12 High	<i>Results from accumulation of organic acids or impaired H+ excretion</i> Causes (LTKR) <ul style="list-style-type: none">• Lactate• Toxins• Ketones• Renal Causes (CATMUDPILES) <ul style="list-style-type: none">• CO, CN• Alcoholic ketoacidosis and starvation ketoacidosis• Toluene• Metformin / Methanol• Uremia• DKA• Pyroglutamic acidosis / Paracetamol / Phenformin / Propylene glycol / Paraladehyde• Iron / Isoniazid• Lactic acidosis• Ethylene glycol• Salicylates

CALCULATION

Anion gap (mmol/L) = Sodium_{mmol/L} - (chloride_{mmol/L} + Bicarbonate_{mmol/L})

Corrected Anion gap (mmol/L) =
Anion gap + (2.5 x (40 - Albumin_{g/L}))