INDICATION

Determines if a patient with acidosis has an elevated anion gap but does not correct for albumin (see Anion Gap Albumin for corrected calculation).

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** • Non random analytical errors • Increase in unmeasured cations (multimyeloma, hypercalcaemia, hypermagnesaemia, lithium OD, polymixin) • Bromide OD (causes falsely elevated chloride)
4-12 Normal	*Results from loss of HCO3- from extracellular fluid* **Causes (CAGE)** • Chloride excess • Acetazolamide/Addisons • GI causes • Extra – RTA **Causes (ABCD)** • Addisons (adrenal insufficiency) • Bicarbonate loss (GI or Renal) • Chloride excess • Diuretics (Acetazolamide)
>12 High	*Results from accumulation of organic acids or impaired H+ excretion* **Causes (LTKR)** • Lactate • Toxins • Ketones • Renal **Causes (CATMUDPILES)** •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) = $Sodium_{mmol/L}$ - ($chloride_{mmol/L}$+ $Bicarbonate_{mmol/L}$)