

# Acid Base Online Tutorial



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## Metabolic Acidosis

***A primary metabolic acidosis is characterized by low arterial pH (< 7.35), reduced plasma HCO<sub>3</sub><sup>-</sup> concentration, and compensatory alveolar hyperventilation resulting in decreased PCO<sub>2</sub>.***

It can be induced by either increased endogenous acid production, increased exogenous acid administration, loss of HCO<sub>3</sub><sup>-</sup>, or by decreased ability to excrete the normal dietary H<sup>+</sup> load.

### Differential Diagnosis

The differential diagnosis of metabolic acidosis is vast and is best approached if one breaks down the causes of metabolic acidosis into normal vs elevated **anion gap** metabolic acidosis. See below.

Elevated Anion Gap (>16 meq)	Normal Anion Gap (8-16 meq)
<p><b>Increased Endogenous production:</b></p> <p>Ketoacidosis (Alcohol, Starvation, DKA)</p> <p>Lactic Acidosis</p> <p>Uremia</p>	<p><b>Loss of Bicarbonate:</b></p> <p>Diarrhea</p> <p>Carbonic anhydrase inhibitors</p> <p>Type 2 RTA (proximal)</p> <p>Pancreatic ileostomy</p> <p>Pancreatic, biliary, intestinal fistula</p>
	<p><b>Exogenous Administration:</b></p> <p>ammonium chloride or HCL</p>
	<p><b>Decreased Renal Acid Excretion:</b></p> <p>Type 1 (distal) ,4 RTA</p> <p>Renal Failure</p>
<p><b>Intoxications:</b></p> <p>Methanol, Ethylene Glycol, Paraldehyde, Salicylates, INH</p>	<p><b>Miscellaneous:</b></p> <p>Hyperkalemia</p> <p>Recovery from DKA</p>

Click submenu or next for select causes of metabolic acidosis

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