

Metabolic Alkalosis

Metabolic alkalosis is a metabolic state where the body's pH is elevated due to increased bicarbonate concentrations. The elevations in bicarbonate can be due to decreased bicarbonate excretion by the kidney, increased bicarbonate intake, or volume depletion. The most common causes are diuretics, vomiting, antacids, and hyperaldosteronism.



PLAY PICMONIC

Diuretic use

Die-rocket

Diuretic use can cause a metabolic alkalosis due to decreases in total volume with minimal change in bicarbonate levels which leads to a relative increase in the concentration of bicarbonate. Alkalosis can also result due to renal compensatory mechanisms used to correct volume loss, which leads to increased bicarbonate reabsorption in the kidney. This is referred to as contraction alkalization.

Vomiting

Vomit

Vomiting causes alkalosis due to depletion of volume as well as loss of HCl from vomiting stomach acid.

Antacid

Ant-acid-bottle

Excess antacid use can lead to alkalosis as the bicarbonate binds acid in the gut lumen, allowing extra bicarbonate to be reabsorbed in the stomach.

Hyperaldosteronism

Hiker-Aldo-stereo

Hyperaldosteronism can be caused by a variety of etiologies such as aldosterone secreting tumors or renal artery stenosis and results in bicarbonate resorption.