

## ACID & BASE

- Provide optimal cell function
  - Cells secrete **acid** and **bases** to maintain proper pH for enzymes to work.
- They both provide homeostatic regulation of pH of the body's ECF (extracellular fluid)
  - The Carbonic Acid-Bicarb Buffer System = pH homeostasis of blood

### ACID

CO<sub>2</sub> is regulated by the lungs + contributes to acid

- found in the stomach + urine + kidneys \*
  - ex: acid reflux, BPH, kidney failure

### BASE

Bicarb HCO<sub>3</sub> = form of carbon dioxide in our blood

- found in intestines \*
  - Regulated, excreted + reabsorbed in kidneys \*
  - Ex C-diff → bacteria in colon

## 2 FUNCTIONS

Metabolic + Respiratory

### METABOLIC

primary change is the **concentration of bicarbonate.**

#### METABOLIC **ACIDOSIS**

bicarb ↓ r/t the amount of acid in the body

- Increased Hydrogen ions
  - CAUSES: kidney failure, DKA, lactic acidosis (shock, sepsis), severe diarrhea
  - put pt. on bicarb drip to increase levels
- Respiratory compensation
  - Increased RR to rid of acid

#### METABOLIC **ALKALOSIS**

excess bicarb r/t the amount of acid in the body

- Decreased Hydrogen ions
  - CAUSES: loss of gastric fluids, antacid overdose
  - ex: too much NGT suctioning, hypokalemia, vomiting

### RESPIRATORY

primary change is the **concentration of carbonic acid**

#### RESPIRATORY **ACIDOSIS**

CO<sub>2</sub> is retained + inadequate O<sub>2</sub> exchange → increases amount of carbonic acid in the body

- CAUSES: Hypoventilation
- ex: Asthma, COPD, Pneumonia
- Decreased RR
  - Sleep apnea, drug overdose, head injuries

Compensation?

- Increasing RR

#### RESPIRATORY **ALKALOSIS**

Too much CO<sub>2</sub> is lost + carbonic acid levels fall

- Pt has increased RR
  - ex: hyperventilation due to anxiety attack

Compensation?

- slow + shallow breaths

# Acid And Base Study Guide

**Leo J. Malone**



## Acid And Base Study Guide:

**Acid-Base Equilibria - Quick Chemistry Review Outline and Handout** E Staff, Acid Base Equilibria Quick Review Outline and Handout for All Students Learn and review on the go Use Quick Review Chemistry Notes to help you learn or brush up on the subject quickly You can use the review notes as a reference to understand the subject better and improve your grades Easy to remember facts to help you perform better Perfect study notes for all high school and college students 10 Pages

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