

# Fluid and Electrolytes

Water consists of 60-65% of total body weight

## Fluid compartments

- Intracellular 45% of body weight
- Extracellular 15% of body weight (Intravascular 4.5% & Interstitial 10.5%)

## Electrolytes

### Cations (+)

|           |                  |   |
|-----------|------------------|---|
| Hydrogen  | H <sup>+</sup>   | (pH) End product of metabolism  |
| Sodium    | Na <sup>+</sup>  | Major extracellular cation. Responsible for fluid balance, balances calcium and potassium, assists in controlling neuromuscular activity                  |
| Potassium | K <sup>+</sup>   | Major intracellular cation. Responsible for acid base regulation, acid base regulation, muscle excitability, nerve impulse conduction(smooth and cardiac) |
| Calcium   | Ca <sup>++</sup> | Most abundant cation in the body. Responsible for bone growth, transmission of nerve impulses, promotion of blood clotting                                |
| Magnesium | Mg <sup>++</sup> | Responsible for body temperature regulation, carbohydrate and protein metabolism, mediator of neuromuscular contraction within the CNS                    |

### Anions(-)

|             |                               |  |
|-------------|-------------------------------|--|
| Chloride    | Cl <sup>-</sup>               | Major extracellular anion. Responsible for water balance, acid base, combines with hydrogen in the stomach to create hydrochloric acid |
| Bicarbonate | HCO <sub>3</sub> <sup>-</sup> | Major intracellular anion. Responsible for maintaining acid base balance   |
| Phosphate   | HPO <sub>4</sub> <sup>-</sup> | Major intracellular anion. Responsible for acid base balance, cellular metabolism  |