FLUIDS

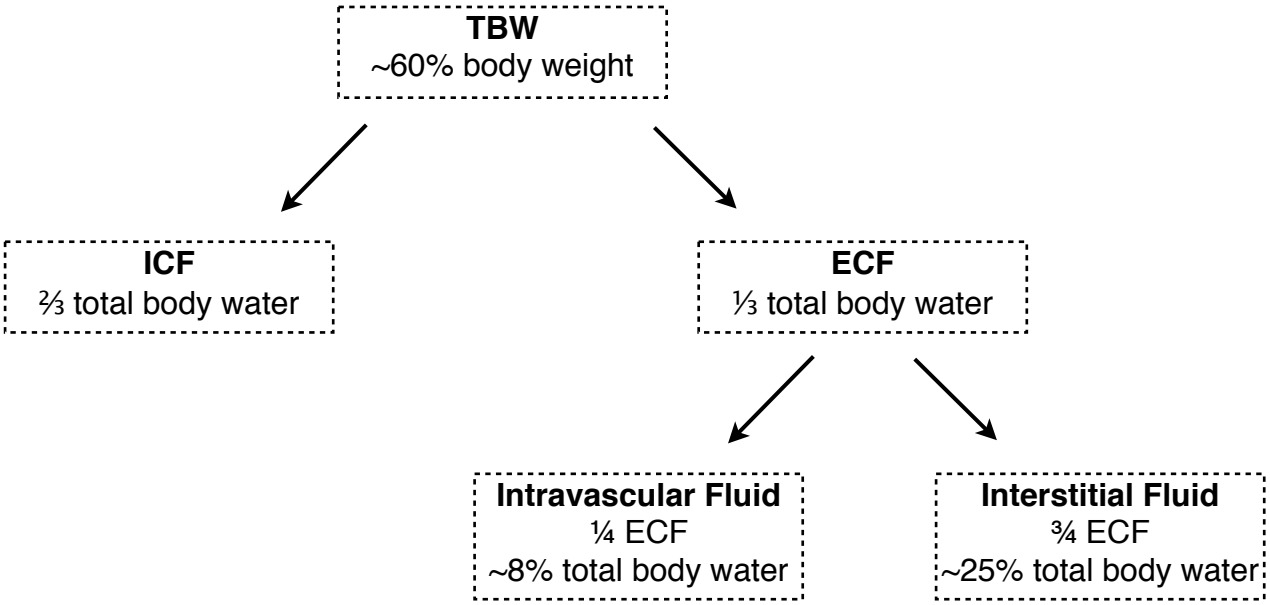

Table 21-1 Electrolyte Concentrations of Fluids (mEq/L)

Solution	Plasma	Interstitial	Intracellular	Normal Saline	Lactated Ringer's Solution
Cations					
Sodium	142	144	10	154	130
Potassium	4	4.5	150	—	4
Magnesium	2	1	40	—	—
Calcium	5	2.5	—	—	3
Total cations	153	152	200	154	137
Anions					
Chloride	104	113	—	154	109
Lactate	—	—	—	—	28
Phosphates	2	2	120	—	—
Sulfates	1	1	30	—	—
Bicarbonate	27	30	10	—	—
Protein	13	1	40	—	—
Organic acids	6	5	—	—	—
Total anions	153	152	200	154	137

Solutes.

- 1Eq = Mass of 1mol of a substance (in grams) divided by its charge.
- 1Eq of Na^+ = 23 grams, whereas 1mol of $Ca2^+$ = 40grams/2 = 20grams
    - ∴ 1mol of Na^+ = 1Eq of Na^+, whereas 1mol of $Ca2^+$ = 2Eq of $Ca2^+$!

- Osmole = Amount of substance (in moles) that dissociates to form 1mol of osmotically active particular.
    - eg. 0.5mol NaCl → 0.5mol of both Na^+ & Cl^- in soln. → 1 osmole !!

- Osmolarity = 2x [Na^+] + glucose + urea + ethanol
    - 2x [Na^+] estimates Na^+ + Cl^- + $HCO3^-$
    - Normally 275-295 mOsm/L
    - Normal Osmolar Gap = ~10.

Homeostasis.

- Average normal adult requires;
    - 2000-3000mL of H_2O per day.