**Distribution and composition of body fluids**

**Total Body Composition**

- **Blood**: 5%
- **Interstitial**: 15%
- **Intracellular**: 40%
- **Fat**: 15%
- **Protein**: 18%
- **Mineral**: 7%

**Body Fluid Distribution**

- **Blood**: 5%
- **Interstitial**: 15%
- **Intracellular**: 40%

**Capillary membranes:**

- Size barrier, rather than charge.
- Thus, ionic concentration is much the same between the blood and interstitial fluid.
- However, proteins stay on the blood side of the barrier (they are too big).

**Cellular membranes:**

- Selective membrane
- The maintenance of an ionic and an osmotic barrier is maintained by pumps and by membrane selectivity.

**Composition of Body Fluids**

**Blood Plasma**

- **Positive Ions (Cations):**
  - Sodium: 140 mEq
  - Potassium: 5 mEq
  - Calcium: 5 mEq
  - Magnesium: 2 mEq

- **Negative Ions (Anions):**
  - Chloride: 110 mEq
  - Bicarbonate: 25 mEq
  - Proteins: 15 mEq
  - Organic acid: 5 mEq
  - Phosphate: 2 mEq

**Interstitial Fluid**

- **Positive Ions (Cations):**
  - Sodium: 140 mEq
  - Potassium: 5 mEq
  - Calcium: 5 mEq
  - Magnesium: 2 mEq

- **Negative Ions (Anions):**
  - Chloride: 110 mEq
  - Bicarbonate: 30 mEq
  - Proteins: 5 mEq
  - Organic acid: 5 mEq
  - Phosphate: 2 mEq

**Intracellular Fluid**

- **Positive Ions (Cations):**
  - Sodium: 10 mEq
  - Potassium: 163 mEq
  - Calcium: 2 mEq
  - Magnesium: 25 mEq

- **Negative Ions (Anions):**
  - Chloride: 10 mEq
  - Bicarbonate: 10 mEq
  - Proteins: 65 mEq
  - Phosphate: 100 mEq

- Also,
  - Sulfate: 15 mEq

**REFERENCES:**

- Ganong's review of medical physiology, 23rd ed: Section I; as well as Guyton and Hall (11th edition), and, sadly, Wikipedia.