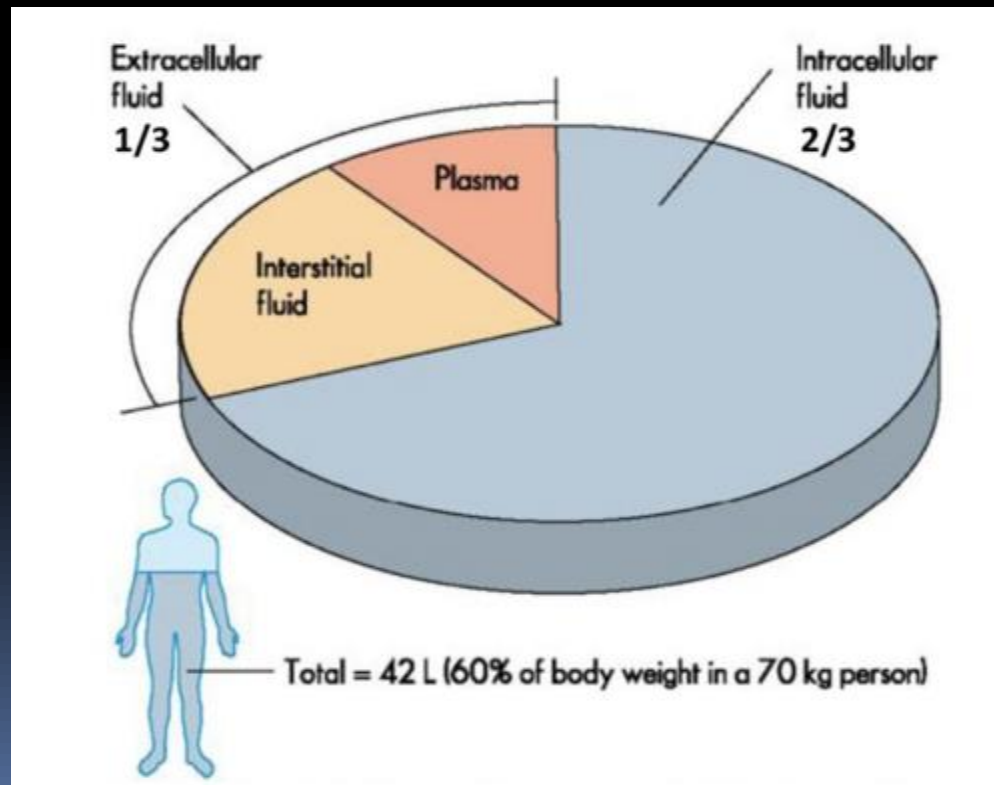


Body Fluids and Fluid Compartments



Prepared and Presented by:

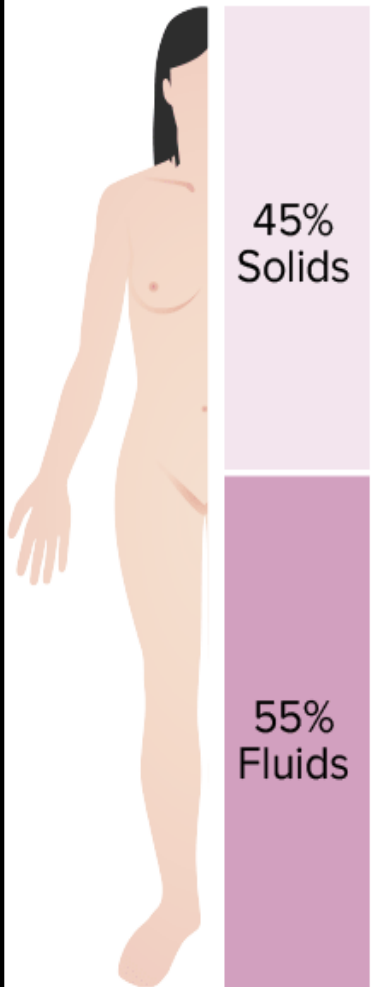
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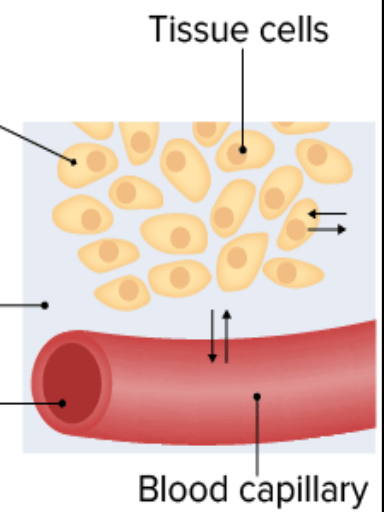
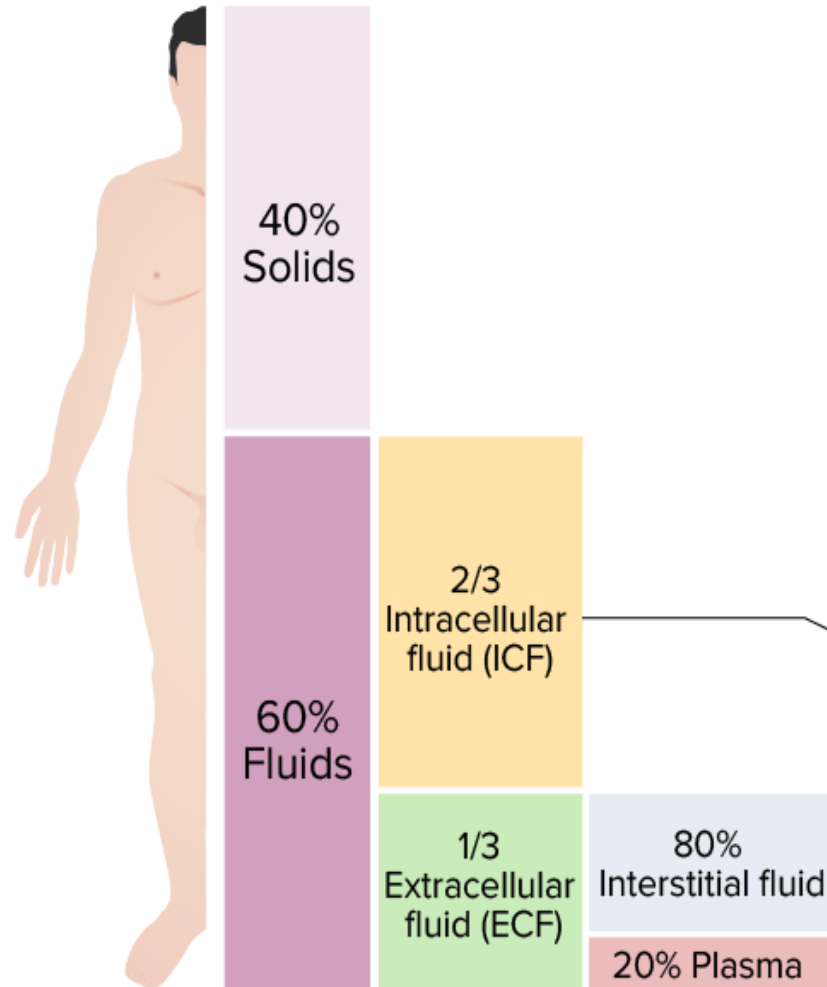
Body fluids are liquids originating from inside the bodies of living humans. They include fluids that are excreted or secreted from the body. Human blood, body fluids.

- Total amount of fluids in the human body is approximately 70% of body weight.
- Body fluid has been divided into two compartments.
 - **Intracellular fluid (ICF)**
Inside the cells, 55% of total body water
 - **Extracellular fluid**
Outside the cells, 45% of total body water

Total body mass (female)



Total body mass (male)



Composition of body fluids

- Organic substances

Glucose, Amino acids, Fatty acids, Hormones, Enzymes.

- Inorganic substances

Iron, calcium, sodium, potassium and magnesium.

1- Extracellular fluid

- Interstitial fluid**

Present between the cells, Approximately 80% of ECF.

- Plasma**

Present in blood, Approximately 20% of ECF

- Also includes**

Lymph

synovial fluid

cerebrospinal fluid

pleural, pericardial and peritoneal fluids.

Interstitial Fluid:

Also known as intercellular fluid and tissue fluid is fluid between the cells of multi-cellular organisms which delivers materials to the cells, intercellular communication, and removal of metabolic waste.

- It represents the largest portion of the ECF compartment.**
- Interstitial fluid consists of a water solvent containing amino acids, sugars, fatty acids, coenzymes, hormones, neurotransmitters, salts, as well as waste products from the cells.**
- This fluid presents as gel-like extracellular matrix.**

Barriers separate ICF, interstitial fluid and plasma.

- Plasma membrane**

Separates ICF from surrounding interstitial fluid.

- Blood vessel wall**

Separate interstitial fluid from plasma.

Blood plasma:

Plasma, also known as blood plasma, appears light-yellowish. It serves as the liquid base for whole blood.

Lymph

Clear and colorless fluid, 96% water and 4% solids, Solids.

Functions of Lymph:

- Return protein from tissue spaces into blood.**
- Removal of bacteria, toxins and other foreign bodies from tissues.**
- Maintain structural and functional integrity of tissue.**
- Route for intestinal fat absorption.**
- Transport lymphocytes.**

2- Intracellular Fluid:

- The cytosol or intracellular fluid is the liquid found inside the cells .**
- Physiological Function :**
- The cytosol has no single function and instead it is the site of multiple cell processes including metabolic processes (such as glycolysis, gluconeogenesis, PPP).**

It is also involved in signal transduction from the cell membrane to sites within the cell .

The body fluid composition of tissue varies by

- **Tissue type: lean tissues have higher fluid content than fat tissues.**
- **Gender: males have more lean tissue and therefore more body fluid.**
- **Age: lean tissue is lost with age and body fluid is lost with it.**

