



SNS COLLEGE OF ALLIED HEALTH SCIENCES
SNS Kalvi Nagar, Coimbatore - 35
Affiliated to Dr MGR Medical University, Chennai



DEPARTMENT OF CARDIO PULMONARY PERFUSION CARE
TECHNOLOGY

COURSE NAME : Pharmacology Pathology and Clinical Microbiology

II nd YEAR

TOPIC : SODIUM



SODIUM



- ▶ (Na+) Sodium Total body Sodium is 4000 meq.
- ▶ 50% in bones, 40% in ECF & 10% in Soft tissues.
- ▶ It is the major Extracellular **cation**.



BIOCHEMICAL FUNCTIONS:

- 1) Sodium regulates Osmotic pressure and fluid balance.
- 2) Regulates Acid-base balance in association with chloride and bicarbonate.
- 3) It is involved in absorption of Glucose, Galactose & Aminoacids.
- 4) It helps in cell permeability.





DAILY REQUIREMENT AND FOOD SOURCES:

- ▶ Daily requirement 5-10 gm/day In Hypertensive 1 gm/day is recommended.
- ▶ 5g of NaCl contains 2g of sodium.
- ▶ Table salt (NaCl) is the major source. Other sources are Bread, whole grains, vegetables, nuts, eggs and milk.



Absorption, excretion and plasma sodium

- ▶ Sodium is readily absorbed in GIT.
- ▶ Normal Serum level is **135-145 meq/L**.
- ▶ Sodium is extracellular cation so very less amount is present in RBC's (35 meq/l).
- ▶ **Mineralocorticoids** secreted by adrenal cortex, influence sodium metabolism.
- ▶ Kidney is the major source of excretion.
- ▶ Around 800 gm/day is filtered by Glomerulus in that **99%** is reabsorbed by tubules.

Reabsorption is controlled by **Aldosterone**.



DISEASE STATES



Hyponatremia.

- ▶ Decrease Sodium levels.
- ▶ - Diarrhea, Vomiting, - Chronic renal failure
Addisons disease (adreno cortical Insufficiency) ,Mild - head ache, Moderate & severe - Low Blood pressure & Circulatory failure.
- ▶ Overhydration,administration of salt free fluids to patients.



Hypernatremia

- ▶ Increase Sodium levels.
- ▶ Cushing's syndrome.
- ▶ Prolonged administration of steroid hormones (Cortisone, ACTH/Sex hormones).
- ▶ Severe dehydration (only water) as in case of Diabetes Insipidus → Increased Blood volume → Hypertension.



THANK YOU