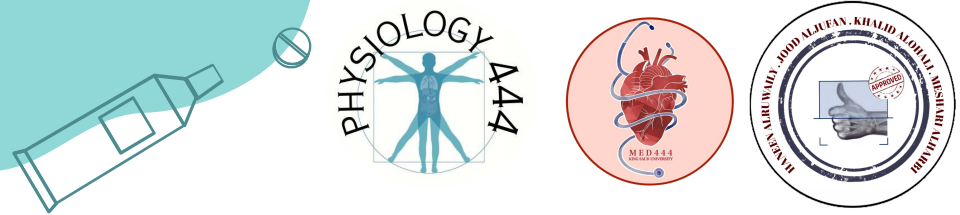


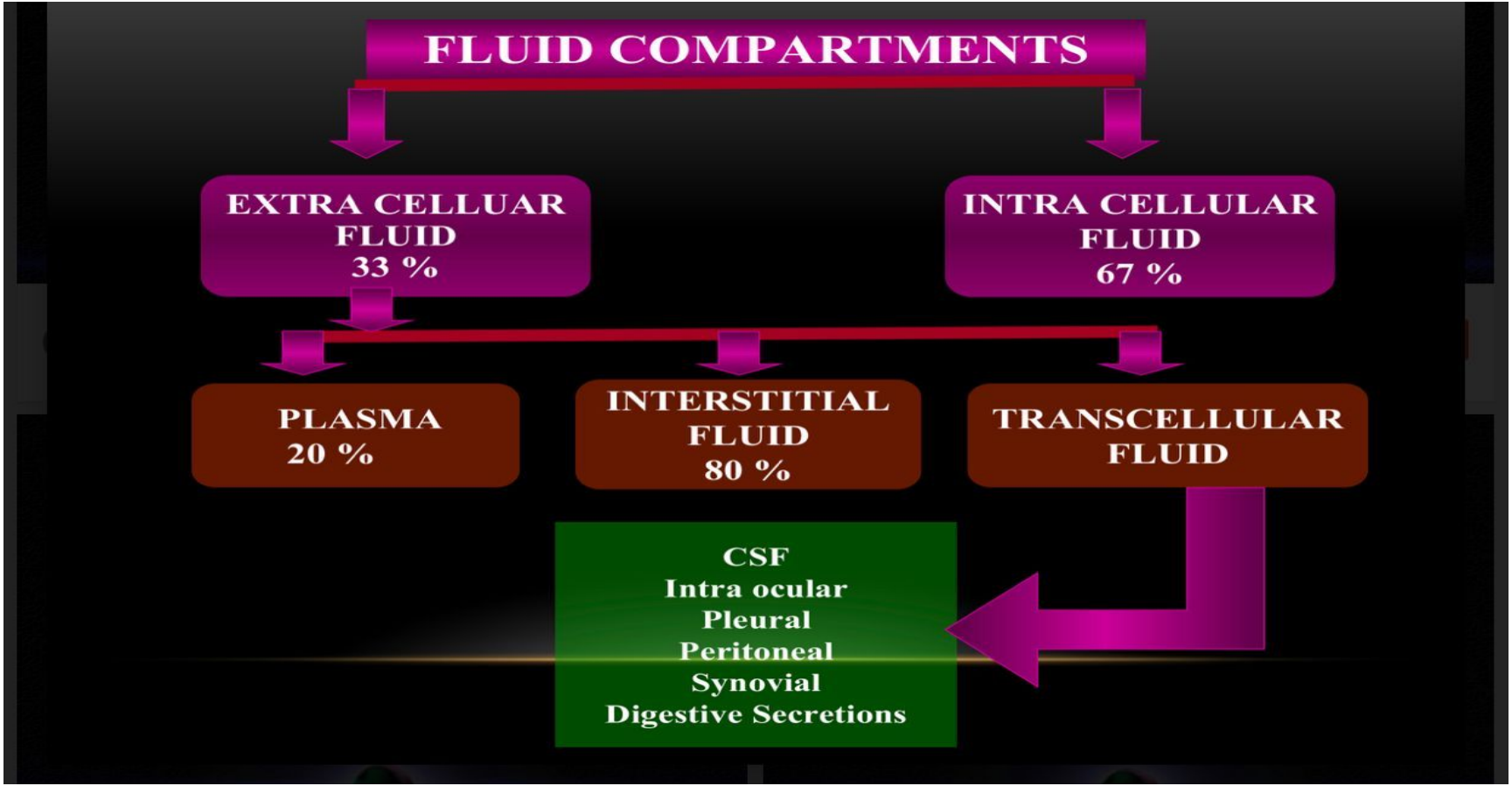
Tutorial
Body Fluids

Color index:

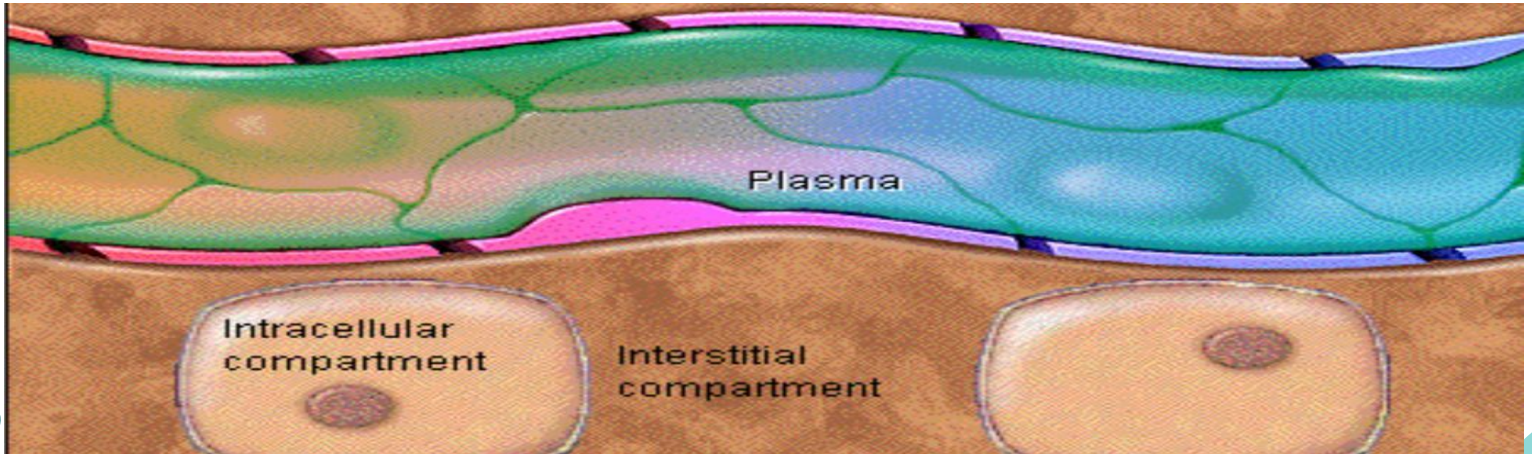
- Main Text
- IMPORTANT
- Girls' slides only
- Boys' slides only
- Extra Info
- Drs Notes

Objectives

- Revision of body fluids


FLUID COMPARTMENTS
EXTRA CELLUAR FLUID 33 %
INTRA CELLULAR FLUID 67 %
PLASMA 20 %
INTERSTITIAL FLUID 80 %
TRANSCELLULAR FLUID
CSF
Intra ocular
Pleural
Peritoneal
Synovial
Digestive Secretions

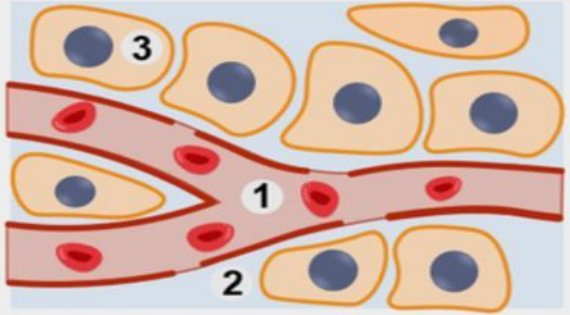
Three major fluid compartments	
Intracellular fluid (ICF)	Fluid within cells known as cytosol
Extracellular fluid (ECF)	Fluid found outside of cells
Interstitial fluid	Fluid surrounding the cells
Plasma	Fluid component of blood



Body Fluid Compartments

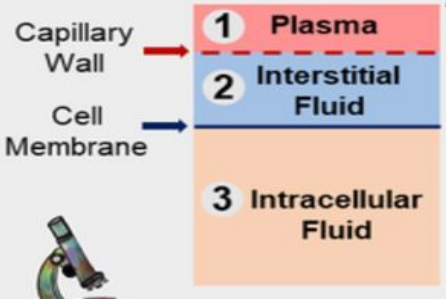
Intracellular Fluid (ICF)
is the cytosol within the cell.

Extracellular Fluid (ECF)
surrounds the cell.



Interstitial Fluid
is the body fluid between the circulatory system and the cells.

Blood Plasma
is the liquid portion of blood.

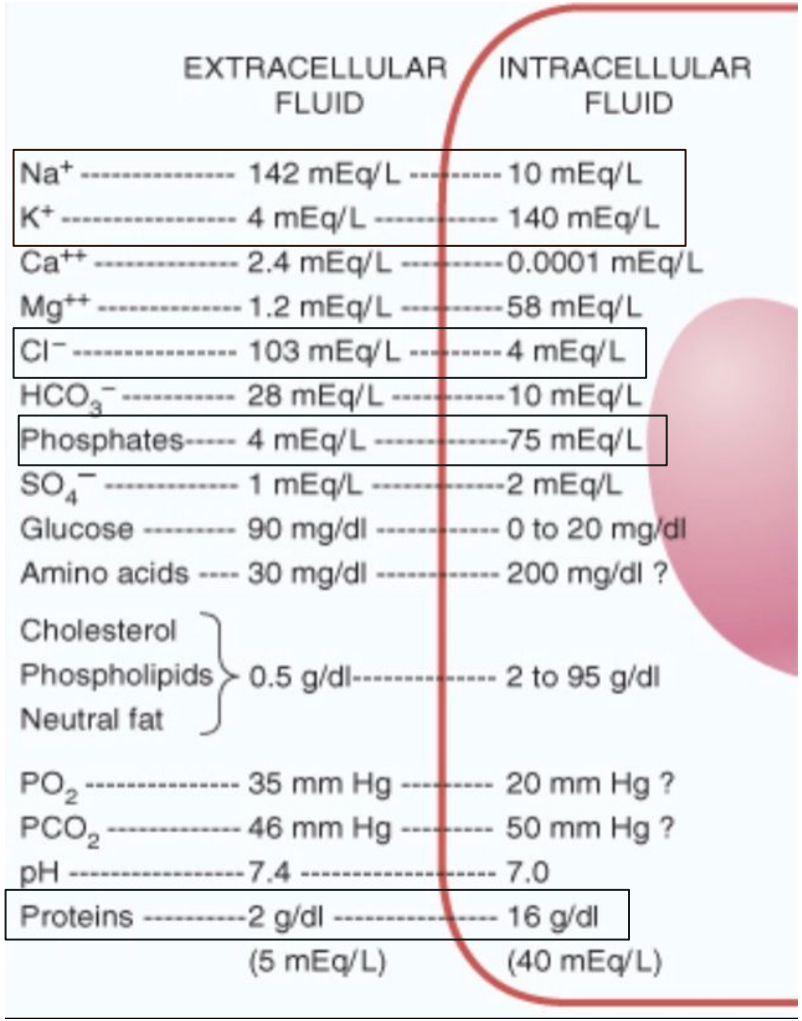


The Composition of Body Fluid Compartments

Solutes (mEq/L)	Intracellular Fluid	Interstitial Fluid	Plasma
Na^+	12	146	140
K^+	160	5	4
Cl^-	2	117	105
Ca^{+2}	<1	3	5
Proteins	54	7	15

We know where solutes concentration are higher
Exp: Na+ are higher in ECF

Dr.Taj said :

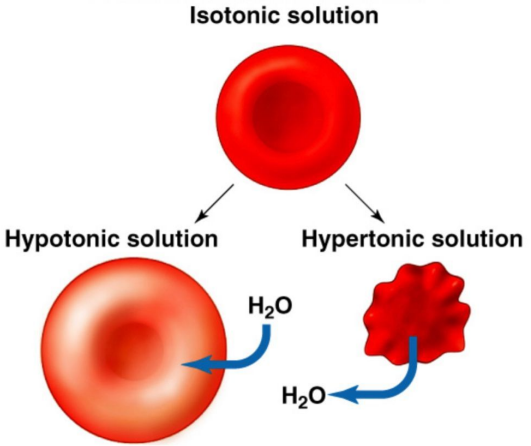


Important!!!
The ones inside the rectangles are important to know where their concentration are higher and lower

Tonicity

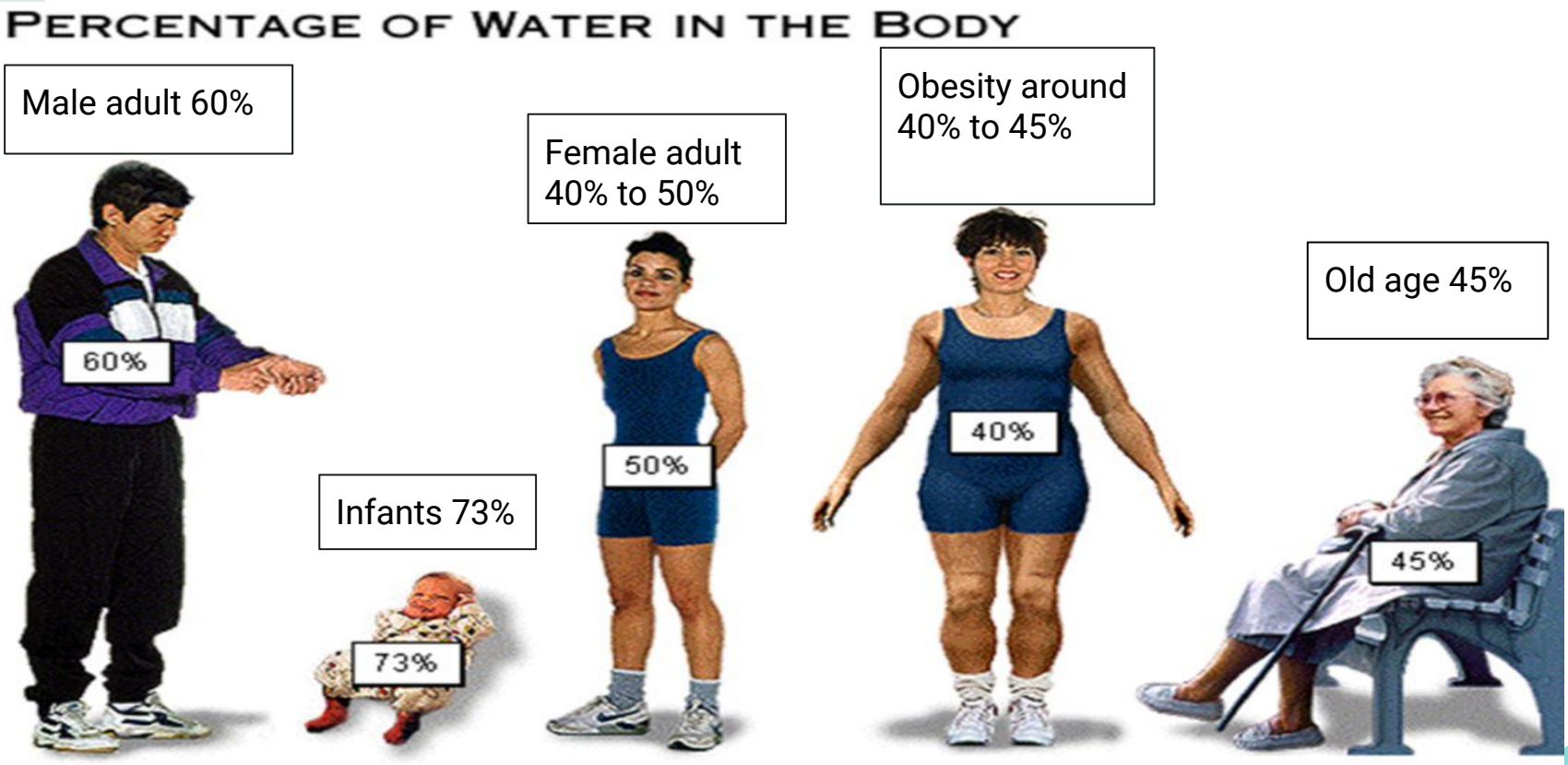
TONICITY AND ITS EFFECT ON MOVEMENT OF H_20

- **Isotonic:**
  - Equal tonicity osmolality (300 mosm/l) to plasma.
    - RBCs will not gain or lose H_20.
- **Hypotonic:**
  - Osmotically active solutes in a lower osmolality and osmotic pressure than plasma.
    - RBC will hemolyse.
- **Hypertonic:**
  - Osmotically active solutes in a higher osmolality and osmotic pressure than plasma.
    - RBC will crenate.



Factors affecting

Total Body Water depends on body fat



Extra

DEHYDRATION

Dr.taj didn't pay too much attention to it

hat are the common causes of dehydration?

hat are the common clinical features of dehydration?

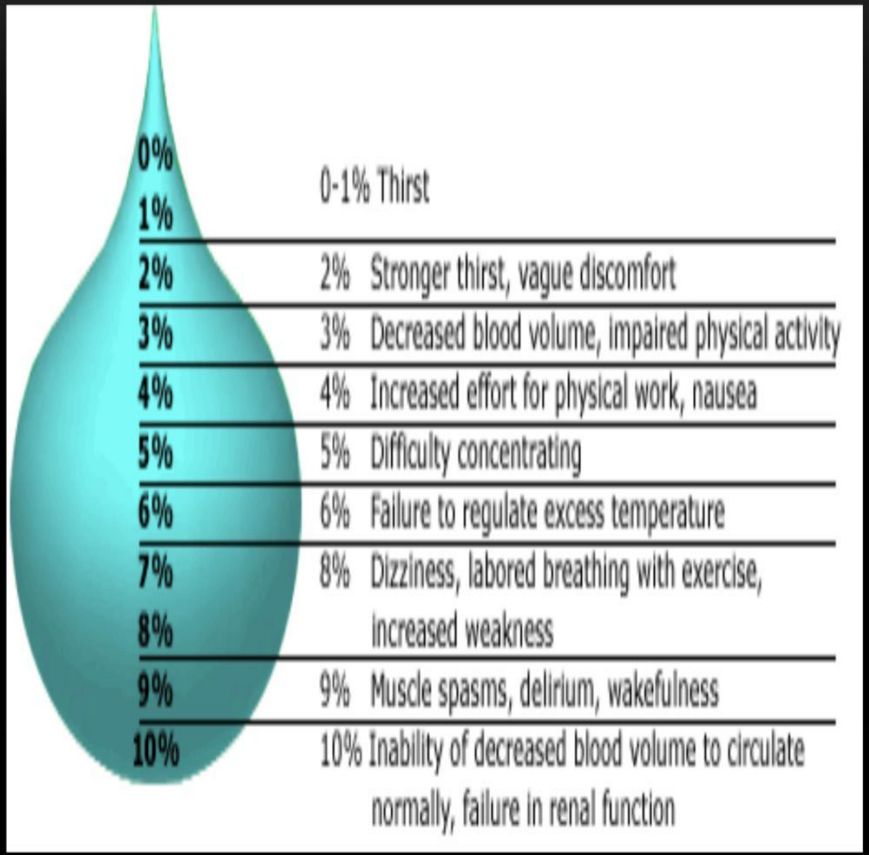
w is dehydration classified?

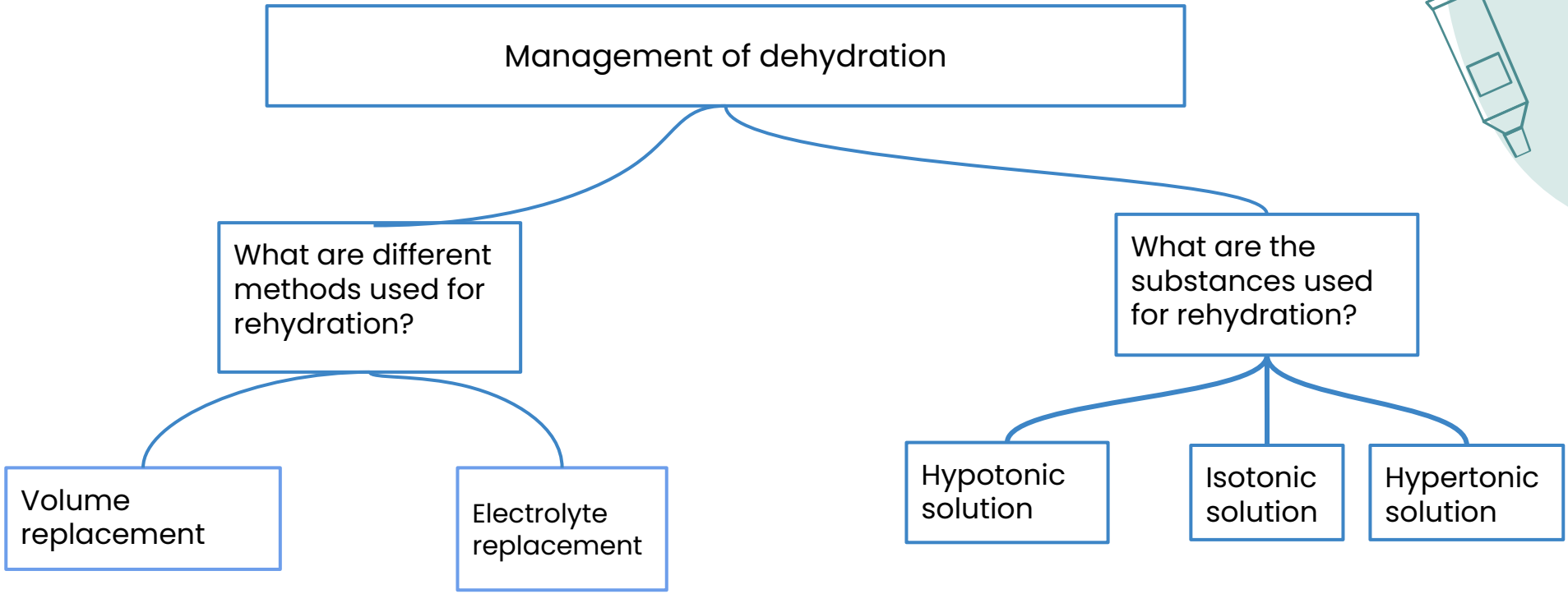
What happens when you get dehydrated?

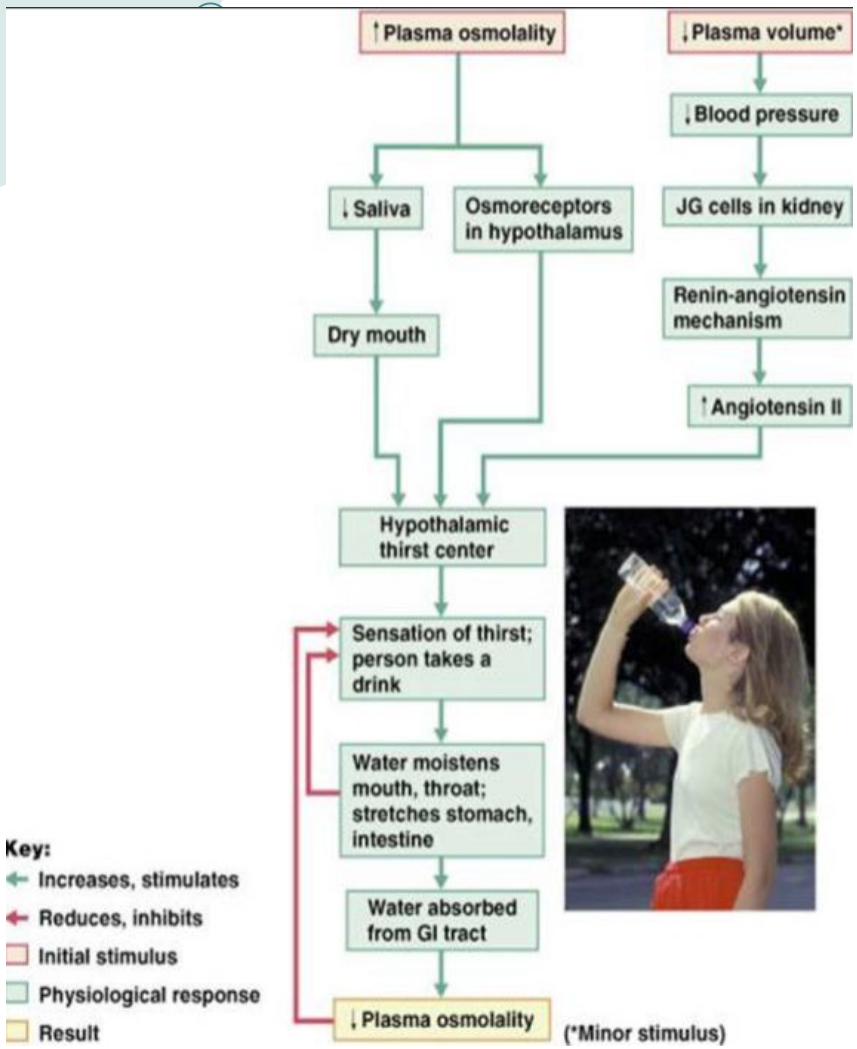
Sign and Symptoms of Dehydration

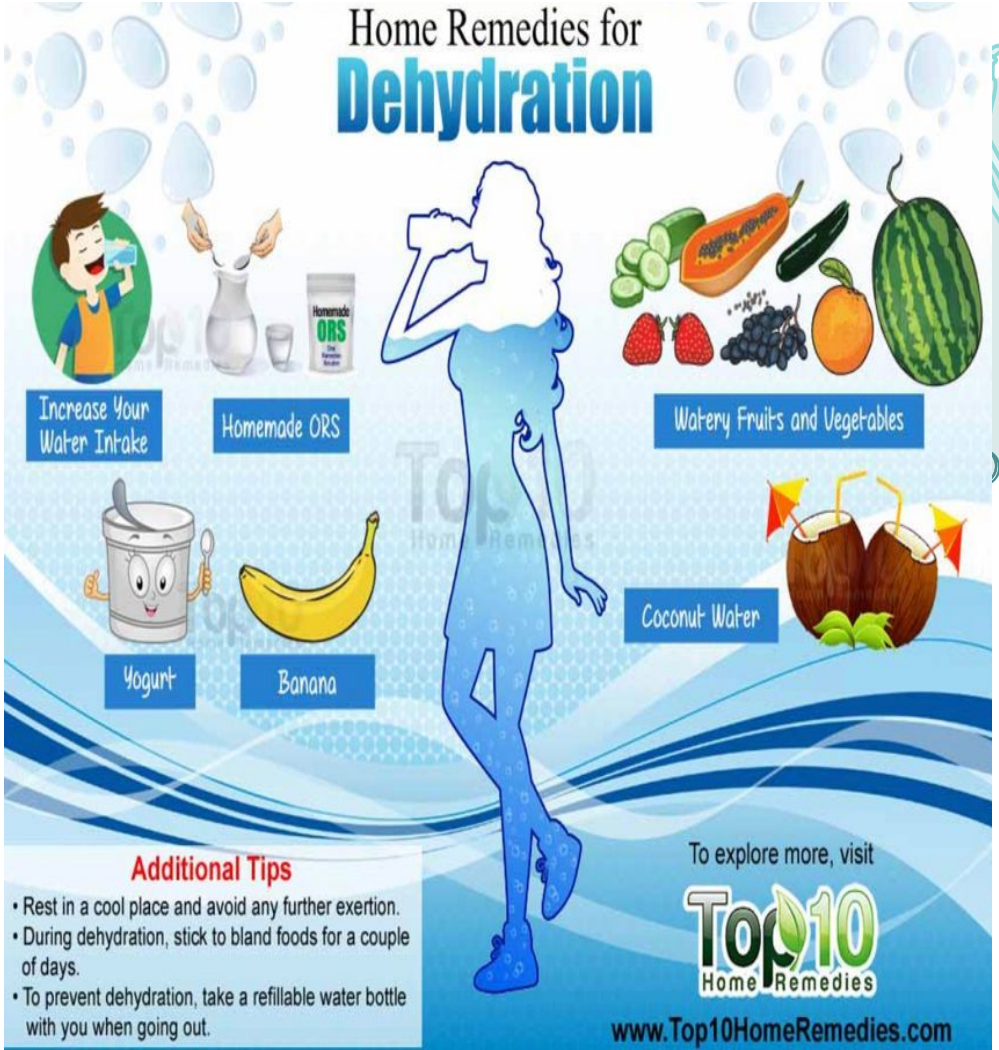
- Dry or sticky mouth
- Lethargy
- Sunken eyes
- Weight loss
- Low or no urine input
- Dark yellow urine
- Poor skin turgor
- Delayed capillary refill
- Dizziness
- Confusion/changes in mental status
- Lack of tears/sweat
- Falls/difficulty walking
- Low blood pressure
- Rapid heart rate
- Abnormal labs/electrolytes

SYMPTOMOLOGY OF DEHYDRATION




Management of dehydration
What are different methods used for rehydration?
What are the substances used for rehydration?
Volume replacement
Electrolyte replacement
Hypotonic solution
Isotonic solution
Hypertonic solution


↑Plasma osmolality
↓Plasma volume*
↓Blood pressure
↓Saliva
Osmoreceptors in hypothalamus
JG cells in kidney
Renin-angiotensin mechanism
Dry mouth
↑Angiotensin II
Hypothalamic thirst center
Sensation of thirst; person takes a drink
Water moistens mouth, throat; stretches stomach, intestine
Water absorbed from GI tract
↓Plasma osmolality
(*Minor stimulus)
Key:
Increases, stimulates
Reduces, inhibits
Initial stimulus
Physiological response
Result


Home Remedies for
Dehydration
Increase Your Water Intake
Homemade ORS
Watery Fruits and Vegetables
Yogurt
Banana
Coconut Water
Additional Tips
• Rest in a cool place and avoid any further exertion.
• During dehydration, stick to bland foods for a couple of days.
• To prevent dehydration, take a refillable water bottle with you when going out.
To explore more, visit
Top 10 Home Remedies
www.Top10HomeRemedies.com

Team Leaders:

- Lulwah Ali Alwabel
- Basmah Ali Alghamdi
- Rakan Abdullah Alwadani

Team members:

- Yara Mohammed
- Rassel Aldajany
- Ritaj Alsubaie
- Hessah Alyousef
- Elaaf Albadi
- Manar saad
- Nisreen Alotaibi
- Rimaz Ahammad
- Bassmah fahad
- Lama Alahmari
- Samiyah Sulaiman
- Roaa Alhajeri
- Shahad Alshehri
- Sahar Alfallaj
- Abdulaziz Alanazi
- Turki alaskar
- Meshari Alharbi
- abdulmohsen alrahaimi
- Omar Alattas
- Khalid Alkanhal
- Nasser Alabdusalam
- Meshal Aljari
- Abdulaziz Sahhari
- Abdulaziz Nasser
- Ziyad Bukhari
- Khaled Aldukhyel
- Faisal Bakri

Contact us through:
physiology.444ksu@gmail.com