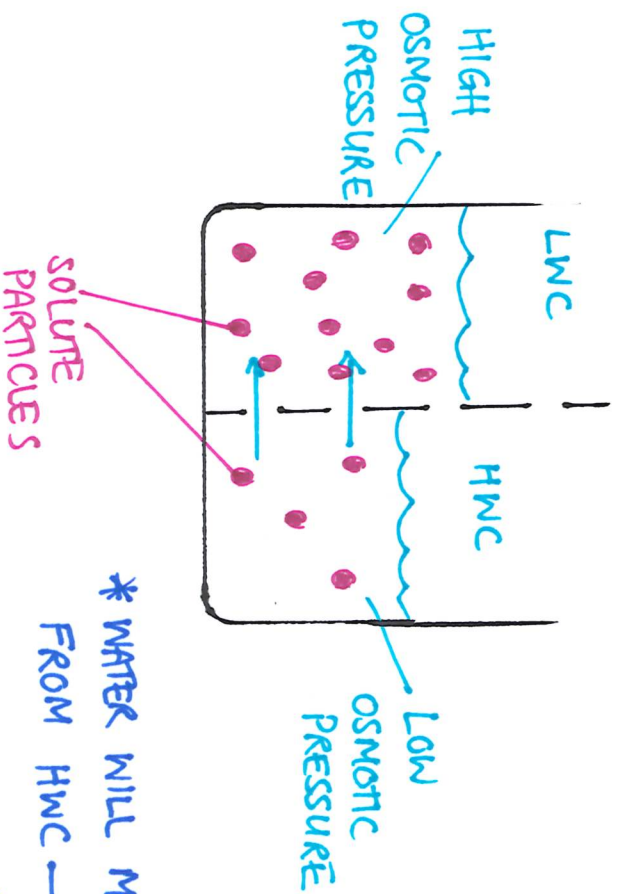


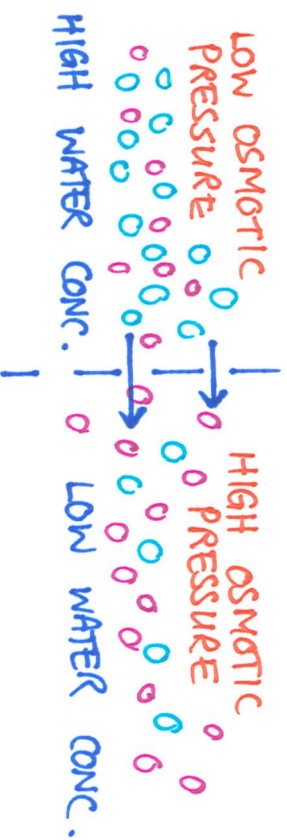
# OSMOTIC PRESSURE

→ THE PRESSURE EXERTED ON A FLUID BY SOLUTES

→ THE HIGHER THE CONCENTRATION OF SOLUTES IN SOLUTION, THE HIGHER THE OSMOTIC PRESSURE



\* WATER WILL MOVE BY OSMOSIS \* FROM HWC → LWC



## REGULATION OF WATER

### OSMOREGULATION



DETECTED BY OSMORECEPTORS IN THE HYPOTHALAMUS  
→ RESPOND TO CHANGES IN OSMOTIC PRESSURE

ADH  
ALDOSTERONE  
THIRST RESPONSE

## FLUID REGULATION

OSMOTIC PRESSURE  
KEY CONCEPT

HORMONES

THIRST RESPONSE

WATER CONTENT OF THE BODY IS ALTERED BY:

→ ANT-DIURETIC HORMONE (ADH)  
→ ALDOSTERONE  
→ THIRST CENTRE

OSMORECEPTORS STIMULATE THE THIRST CENTRE IN THE HYPOTHALAMUS  
→ PROMOTES PERSON TO DRINK

→ WATER ABSORBED INTO BLOODSTREAM  
→ INCREASE OSMOSIS = ↓ OSMOTIC PRESSURE

### ANTI-DIURETIC HORMONE (ADH)

\* MADE IN HYPOTHALAMUS  
\* SECRETED BY PPG INTO BLOODSTREAM

\* TARGETS NEPHRON → DCT & C.D.

\* PROMOTES REABSORPTION OF WATER IN RESPONSE TO AN INCREASE IN OSMOTIC PRESSURE

### ALDOSTERONE

→ MADE IN ADRENAL CORTEX  
→ SECRETED INTO BLOODSTREAM & TARGETS COLLECTING DUCT AND DCT OF NEPHRON

\* PROMOTES:

→ REABSORPTION OF  $\text{Na}^+$  & SECRETION OF  $\text{K}^+$  ( $3\text{Na}^+$  INTO BLOOD :  $2\text{K}^+$  OUT)  
→ ↓ BLOOD VOL. INCREASES & SO DOES BLOOD PRESSURE AS A RESULT.