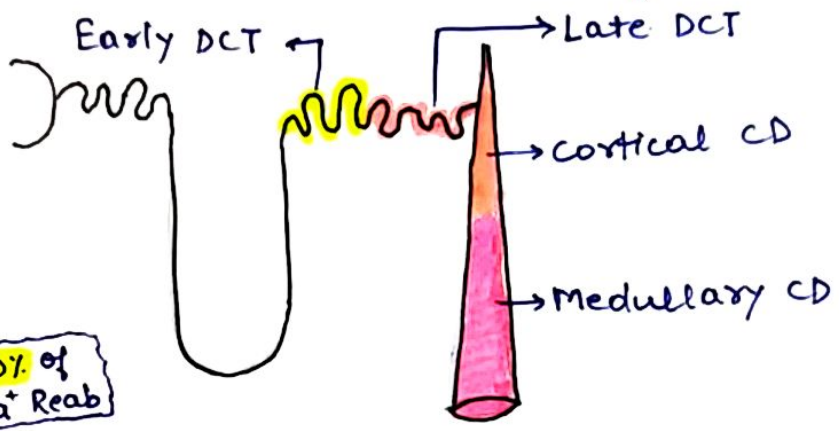
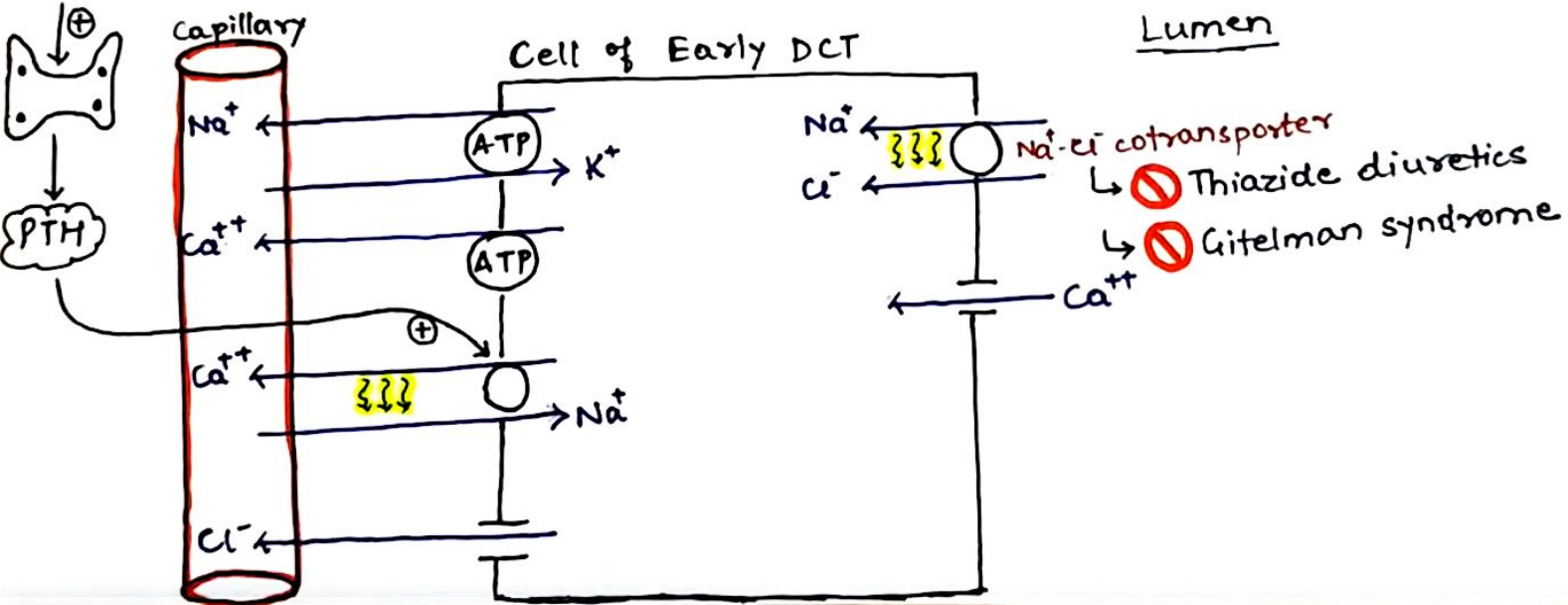
DCT & Collecting Duct



EARLY DCT :-

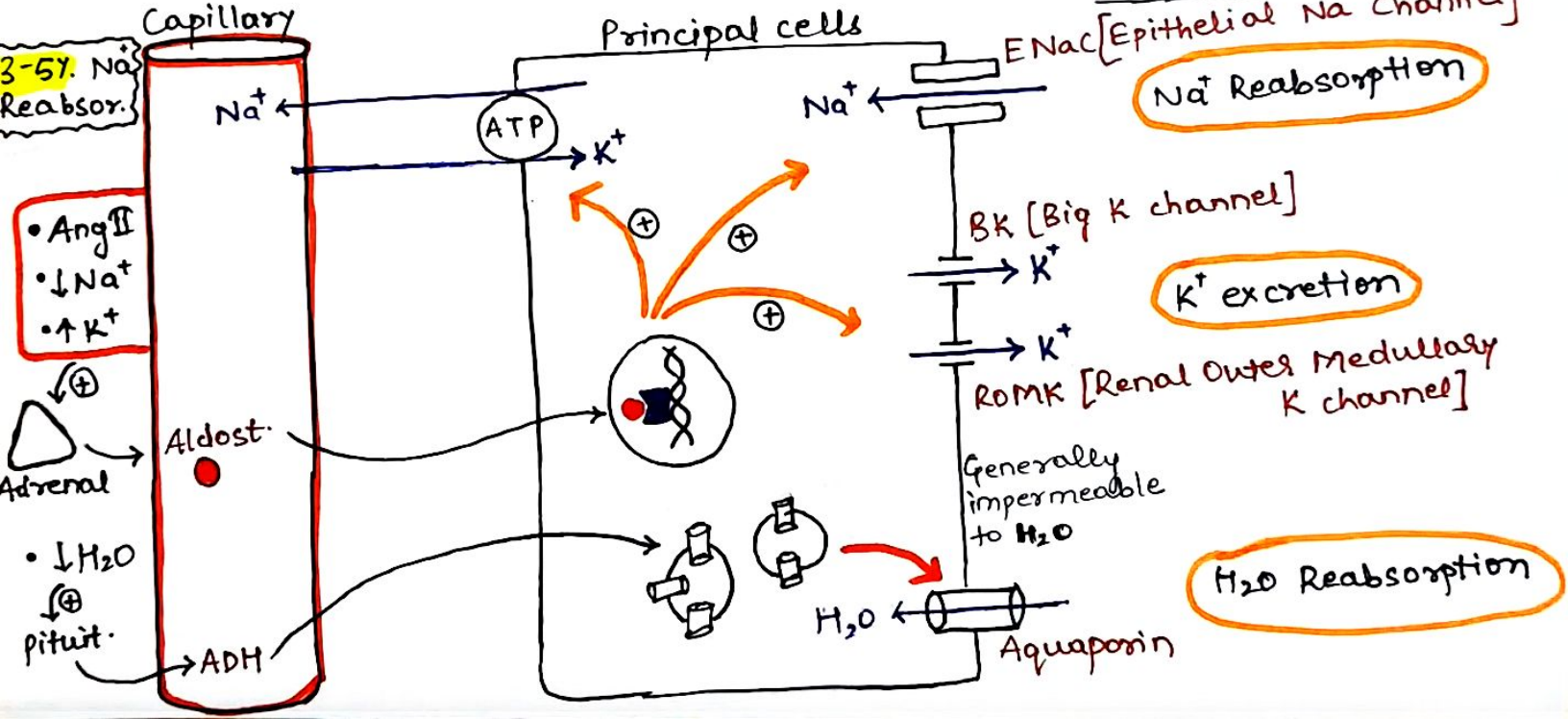
Hypocalcemia

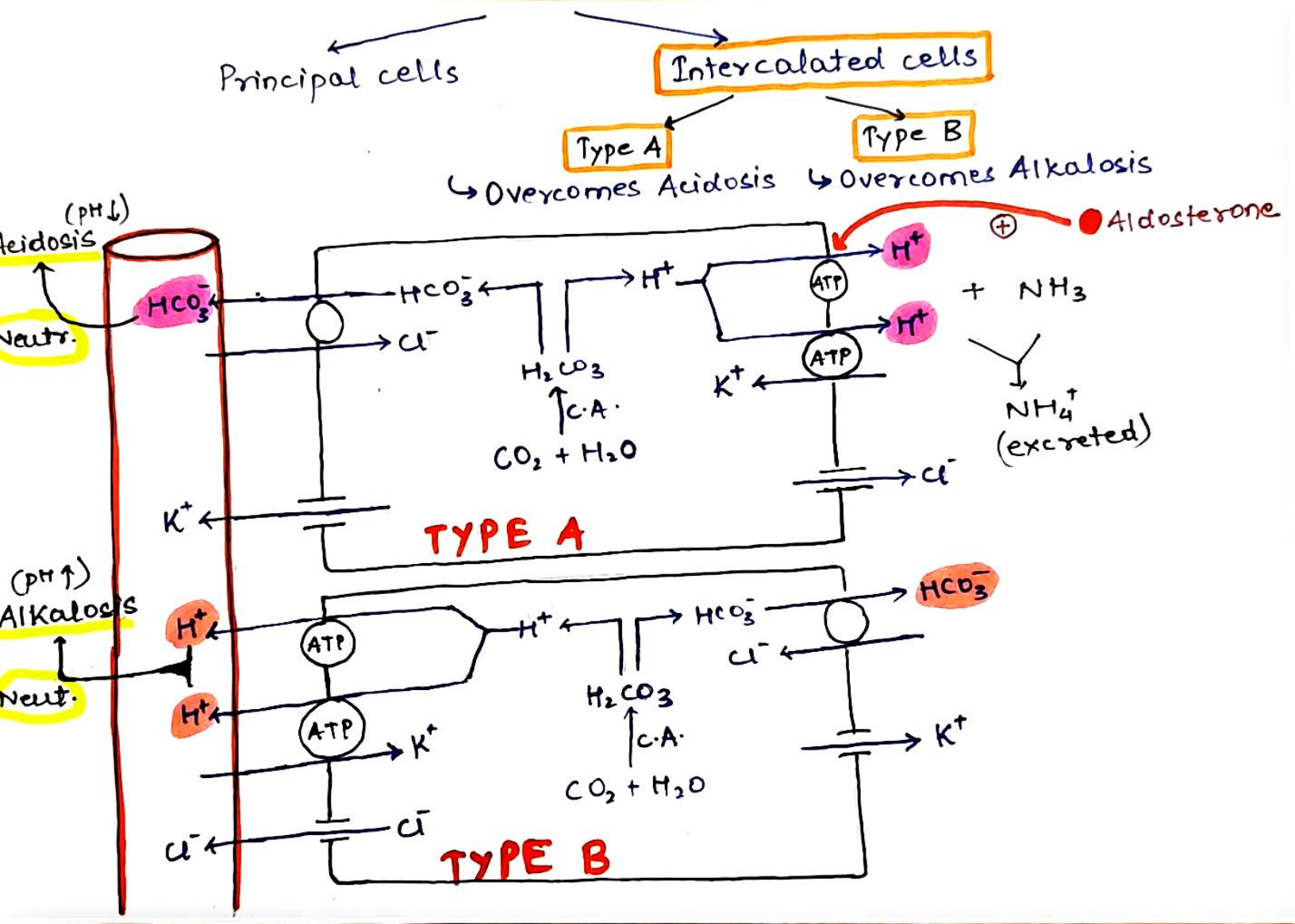
5-10% of Na^+ Reab



LATE DCT & COLLECTING DUCT :-

- **Principal cells**
  - Aldosterone ⊕ → { ↳ Na^+ Reabsorption ; ↳ K^+ excretion }
  - ADH ⊕ → { ↳ H_2O Reabsorption }
- **Intercalated cells**
  - ↳ Acid-Base balance



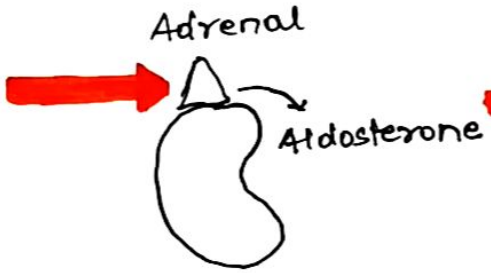

Principal cells
Intercalated cells
Type A
Type B
↳ Overcomes Acidosis
↳ Overcomes Alkalosis
(pH ↓)
Acidosis
Neutr.
Aldosterone
+ NH3
NH4+ (excreted)
H2CO3
C.A.
CO2 + H2O
ATP
TYPE A
(pH ↑)
Alkalosis
Neut.
TYPE B

Summary for Hormones

Aldosterone :-

Stimuli

- Low Blood vol. (RAAS)
- Ang II
- ↓ Na^+
- ↑ K^+



Effect

- principal cells
  - ↳ Na^+ Reabsorption ↑
  - ↳ K^+ excretion ↑
- Type A intercalated cells
  - ↳ H^+ excretion ↑

ADH :-

Stimuli

- Low Blood vol.
  (↑ plasma osmol.)

Pituitary
↓
ADH

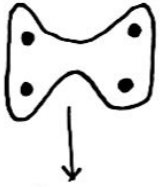
Effect

- Late DCT
  - ↳ H_2O reabsorption ↑
- CD
  - ↳ H_2O reabsorption ↑

PTH :-

Stimuli

- Low S. Calcium
- High S. Phosphate
- Low Vit D



Effect

- PCT → phosphate reab ↓
- DCT → Calcium reab ↑
- PCT → 1 α Hydroxylase ↑
  - ↳ Vit D ↑