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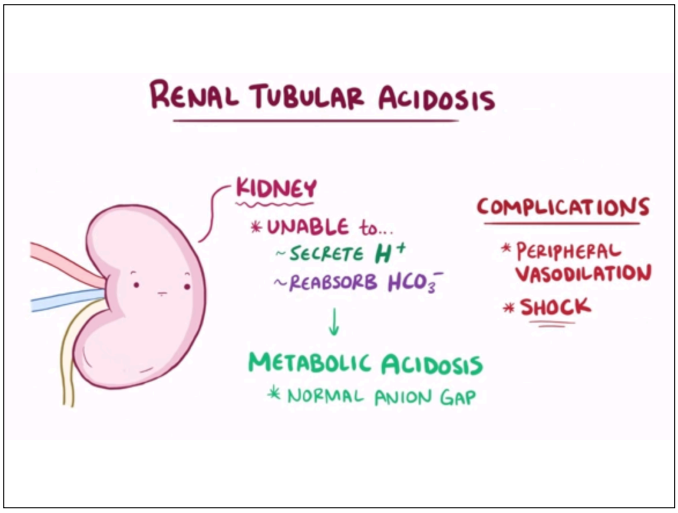

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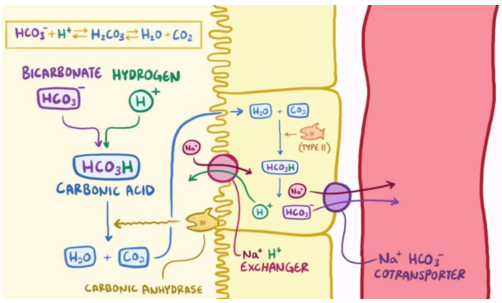
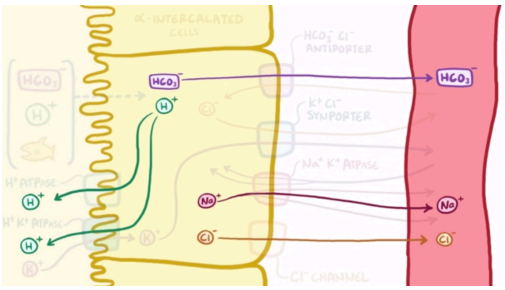


Proximal

Urine: H+
Blood: Na, HCO3-

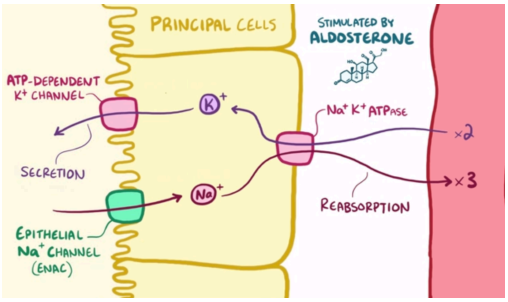
3



Distal: α-intercalated Cells

Urine: H+
Blood: NaCl, HCO3-

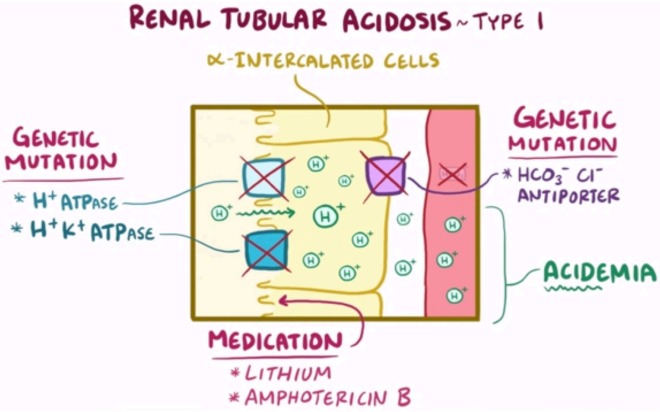
4



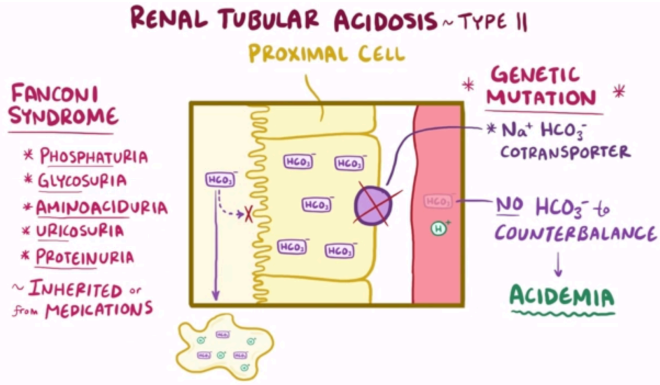
Distal: Principle Cells

Urine: Na+
Blood: K+

5

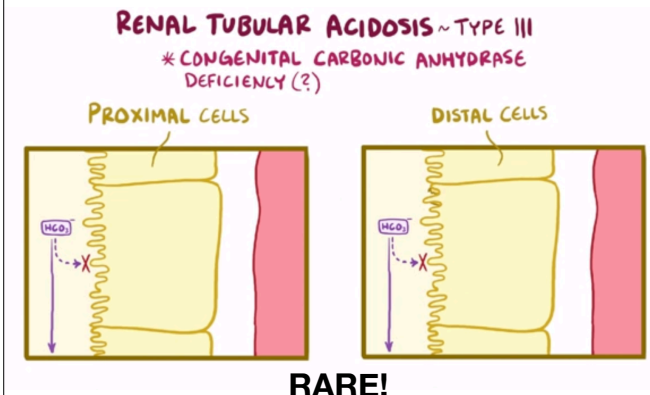


6



Medications: tetracyclines

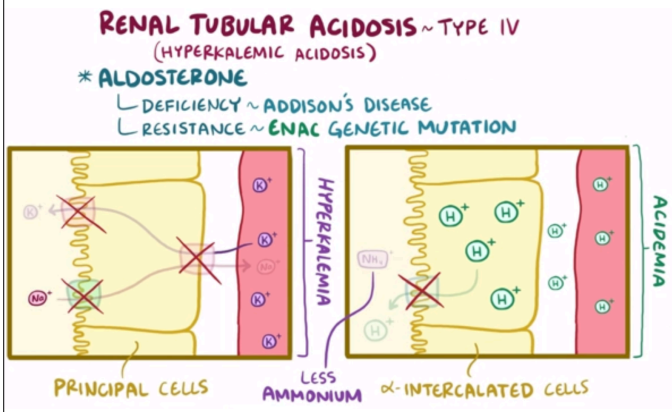
7



RARE!

Middle Eastern / North African Children

8



Other causes:

severe hypovolemia (low NA, less reabsorb-able)

SLE

Medications: Lithium, Amphotericin B (cells more permeable)

9

RTA Summary

Type	Where	Can't do…	Look for…	HCO3- Plasma	K+ Blood	Urine pH	Tx
1	Distal	secrete H^+ into urine	Hypocitraturia Renal calcs Kidney Stones	<10	↓	>6.5	Alkali Therapy (HCO_3^-, Citrate)
2	Proximal	reabsorb HCO_3^-	Fanconi Syndrome	14-20	↓	<6.5	Alkali Tx + K^+ + Thiazide
4	Distal	secrete H^+ & K^+ into urine	Lower urine ammonia	>15	↑	<5.5	Mineralocorticoid (Fludrocortisone)

References

Images: https://en.wikipedia.org/wiki/File:Renal_tubular_acidosis.webm

Summary Table: https://www.uptodate.com/contents/etiology-and-clinical-manifestations-of-renal-tubular-acidosis-in-infants-and-children

https://www.uptodate.com/contents/overview-and-pathophysiology-of-renal-tubular-acidosis-and-the-effect-on-potassium-balance