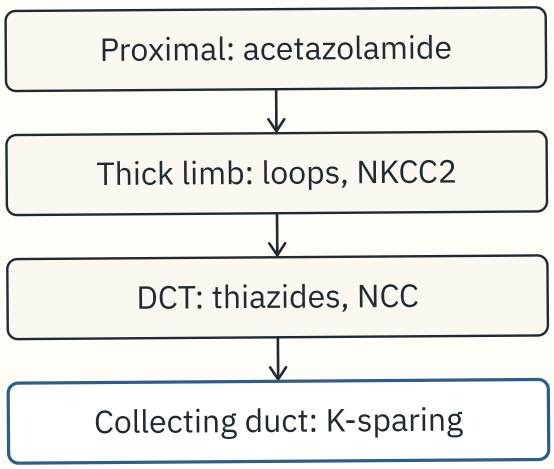
Diuretics by segment in one page

Transporter first, then predict the labs



Step by step

1. Name the segment and transporter the drug blocks
2. Upstream block: more sodium reaches the collecting duct
3. Collecting duct trades sodium for potassium and acid
4. Loops lose calcium; thiazides keep it
5. Collecting-duct drugs raise K^+ and cause acidosis

Class	Site / target	Signature
Acetazolamide	Proximal tubule, carbonic anhydrase	High chloride acidosis, normal anion gap
Loop	Thick ascending limb, NKCC2	Low K^+, alkalosis, urinary Ca loss, hearing loss
Thiazide	Distal convoluted tubule, NCC	Low K^+, alkalosis, Ca kept, low Na^+
ENaC blockers	Collecting duct, ENaC	High K^+, high chloride acidosis
Aldosterone receptor blockers	Collecting duct, receptor	High K^+, high chloride acidosis

Class, site and signature

Rule of thumb

Loops lose calcium, thiazides keep it

Among diuretics, only the collecting-duct drugs raise potassium

Exam traps

- Loops and thiazides both cause hypokalemic alkalosis: use calcium to separate them.
- Acetazolamide causes acidosis, not alkalosis.
- Risk of hyperkalemia with potassium-sparing drugs rises with kidney disease and ACE inhibitors.
- Hearing loss is more likely with aminoglycosides or reduced kidney function.

Diuretics by nephron segment: loop, thiazide and more

Video, written lesson, practice question and sources: medservatory.com/usmle-step-1/renal-physiology/diuretics-by-nephron-segment

For exam study only, not medical advice. Follow local guidelines and your lab's ranges.
© 2026 Medservatory, a project of ADMR Solutions Ltd. Free to print and share for personal study.