THIAZIDES

- The thiazide diuretics were discovered in 1957, as a result of efforts to synthesize more potent carbonic anhydrase inhibitors.
- Like carbonic anhydrase inhibitors and three loop diuretics, all of the thiazides have an unsubstituted sulfonamide group
- Thiazides inhibit NaCl reabsorption from the luminal side of epithelial cells in the DCT by blocking the Na^+/Cl^- transporter (NCC). In contrast to the situation in the TAL, in which loop diuretics inhibit Ca^{2+} reabsorption, thiazides actually enhance Ca^{2+} reabsorption.

THIAZIDES DRUGS

thiazide	Not a thiazide but a sulfonamide qualitatively similar to the thiazides
• Bendroflumethiazide • Chlorothiazide • Hydrochlorothiazide • Hydroflumethiazide • Methyclothiazide • Polythiazide • Trichlormethiazide	• Chlorthalidone • Indapamide • Metolazone • Quinethazone

Clinical Indications

- The major indications for thiazide diuretics are
- **hypertension**
- **heart failure**
- **nephrolithiasis** due to idiopathic hypercalciuria
- **nephrogenic diabetes insipidus**

POTASSIUM-SPARING DIURETICS

- Potassium-sparing diuretics prevent K^+ secretion by antagonizing the effects of aldosterone in collecting tubules. Inhibition may occur by direct pharmacologic antagonism of mineralocorticoid receptors (spironolactone, eplerenone)
- or by inhibition of Na^+ influx through ion channels in the luminal membrane blunts Na^+ uptake and Na^+/K^+-ATPase in collecting tubules and increases GFR through its vascular effects. (amiloride, triamterene)

POTASSIUM-SPARING DIURETICS DRUGS

- **Spironolactone**
- **Eplerenone**
- **Amiloride**
- **Triamterene**

Clinical Indications

- **Edema**
- **Hypokalemia**
- **Heart failure**
- **Resistant hypertension**
- **Polycystic ovary syndrom** spironolactone is often used off lable for treatment of polycystic ovary syndrome it block androgen receptors and inhibits steroid synthesis at high doses>