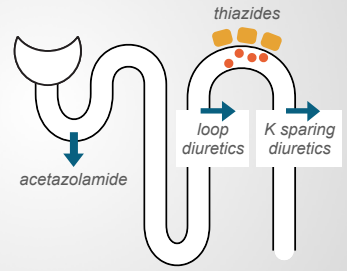
Diuretics

Thiazide diuretics

Thiazides act at the distal convoluted tubule

- *Proximal tubule*
- *Thick ascending limb of the loop of Henle*
- → *Distal convoluted tubule*
- *Cortical collecting duct*



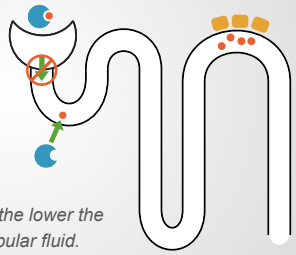
A closer look at thiazide diuretics

Active in the tubular fluid.

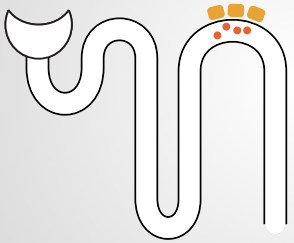
Protein bound. Not filtered.

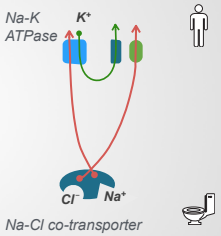
Secreted by the proximal tubule.

Secretion is GFR dependent—the lower the GFR, the less diuretic in the tubular fluid.



A closer look at thiazide diuretics





A closer look at thiazide diuretics

Increases renal excretion of:

- Sodium
- Potassium
- Hydrogen ions (causing metabolic alkalosis)

Decreases renal excretion of:

- Calcium

Thiazides are used to prevent kidney stones

Thiazide diuretics reduce

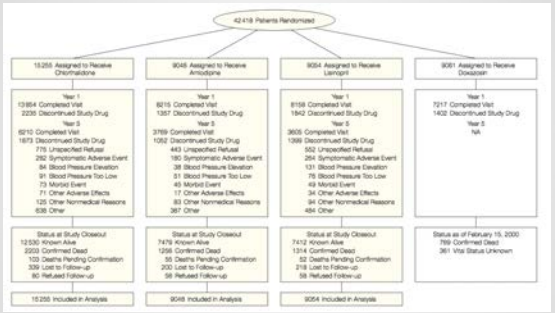
- urinary calcium
- prevent calcium-containing stones

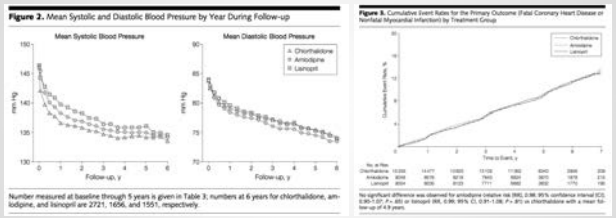
Primarily used in hypercalciuria.

- Women over 250 mg
- Men over 300 mg

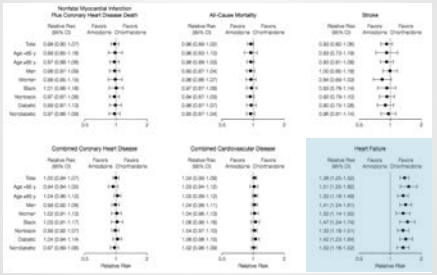
Metolazone	Hydrochloro–thiazide	Chlorthalidone
Zaroxolyn		Hygroton
Usual dose 2.5 to 20 mg qDay	Usual dose 12.5 to 50 mg qDay	Usual dose 12.5 to 50 mg qDay
half life 8-14 hours	*half life 2.5 hours*	*half life 40-60 hours*
Typically used in patients with GFRs < 30	Most popular thiazide drug combos	The drug in AllHat

ALLHAT randomized **42,000 people**

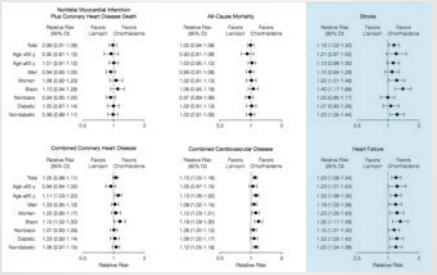




Chlorthalidone vs Amlodipine



Chlorthalidone vs Lisinopril



Thiazides summary

- Acts at the distal convoluted tubule
- A first line anti-hypertensive drug
- Only diuretic that decreases urinary calcium