Name(s)

- **Generic:** hydrochlorothiazide (hye droe klor oh THYE a zide) | **Brand:** Microzide

Therapeutic Category

- Anti-hypertensive | Thiazide diuretic

Indication(s)

1. **Edema:** Used in the treatment of edema caused from various sources such as renal dysfunctions such as nephrotic syndrome, chronic renal failure, heart failure, corticosteroid therapy, or estrogen therapy.
2. **Hypertension**: IF a thiazide is chosen over preferred agents it can be used to lower blood pressure

- **OFF LABEL** *(Actually covered?!)*:
    - **Calcium nephrolithiasis prevention:** Prevents recurrent calcium nephrolithiasis in patients with high urine calcium concentrations
    - **Nephrogenic diabetes insipidus:** May be beneficial in the treatment of diabetes insipidus of a nephrogenic nature

Dosage Form / Strength / Dosing

- **Dosage Form:**
    - **Capsule:** 12.5 mg
    - **Tablet:** 12.5 mg, 25 mg, 50 mg
- **Dosing for Adults with Edema:**
    - Initiate 25 to 100 mg po qd divided into 1-2 doses. Max dose of 200 mg/day with dose adjustments based on patient tolerance and response
- **Dosing for Adults with Hypertension:**
    - Initiate 12.5 to 25 mg po qd with a target dose of 50 mg qd. Titration based on patient response. Although target is 50 mg qd some literature suggests max benefit is not seen past 25 mg due to adverse effects
    - NOTE: Chlorthalidone or indapamide is the preferred thiazide diuretic. However, this can be used in combination therapy.
- (OFF LABEL) **Dosing for Adults in the prevention of Calcium nephrolithiasis:**
    - Initiate 25 mg po qd. Titration based on pt tolerance and calcium levels in urine. Target dosing between 50 mg to 100 mg per day divided into 1-2 doses. Twice daily dosing suggested in doses ≥25 mg due to drug's short half-life
- (OFF LABEL) **Dosing for Adults with nephrogenic diabetes insipidus:**
    - 25 mg po qd or bid
- Pediatric dosing not discussed. Please consult the most current literature.

Special Populations / Considerations

- Drug absorption reduced in patients with chronic heart failure (CHF)
- Patients that are renally impaired:
    - Will have higher plasma concentrations of the drug

    - Prolonged elimination half-life
- Loop diuretics are "favored" in the treatment of edema but thiazide diuretics have their place as an adjunctive agent.
- Cross-sensitivity of sulfonamide-derived drugs is often challenged but should not be rule out due to similarity of chemical structures
- Geriatric patients may seen more electrolyte disturbances from this medication
- Pregnancy: Crosses placenta. Use is not desired and if used must be monitored.

Mechanism of Action & Pharmacology

- Sodium re-absorption is inhibited in the distal tubules of the kidneys. This sodium inhibition increases sodium and water excretion. Potassium and hydrogen ions are also excreted to a lesser extent.
- **Absorption:** Absorbed well in patients with healthy kidney function | **Distribution:** 3.6-7.8 L/kg | **Metabolism**: Not metabolized | **Excretion**: ≥61% in the urine as unchanged drug | **Onset of Action**: ~2 hours in adults w/ the peak effect in 4-6 hours and 2-6 hours in infants | **Time to Peak**: ~1-5 hours | **Duration of Action**: ~6-15 hours | **Half-Life Elimination**: ~6-15 hours | **Protein Binding**: ~40% - 68%

Side Effects

- **Orthostatic hypotension**, bloating, numbness, constipation, **diarrhea**, **dizziness**, **headache**, hives, irregular heartbeat, nosebleeds, and weight loss

Drug Interactions

- **Alcohol** could enhance orthostatic hypotension.
- **Allopurinol's** serum concentrations may be increased with concurrent hydrochlorothiazide usage
- **Amphetamines** may decrease effects of hydrochlorothiazide
- **Anti-diabetic agents** may have decreased efficacy from hydrochlorothiazide use

Monitoring Parameters

- **Blood pressure**, sodium, **potassium**, creatinine, blood urea nitrogen (BUN)

Patient Counseling Information

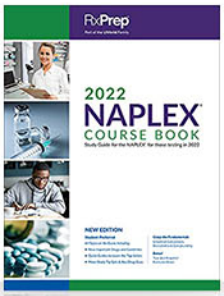
- Can be used to treat **blood pressure** or **edema**
- May experience constipation, diarrhea, dizziness, fatigue
- Caution **orthostatic hypotension**

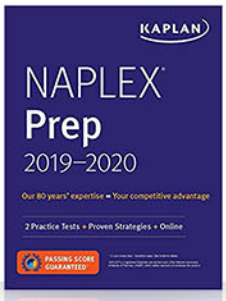
Reference(s)

- drugs.com/ppa/hydrochlorothiazide.html
- https://www.drugs.com/sfx/hydrochlorothiazide-side-effects.html

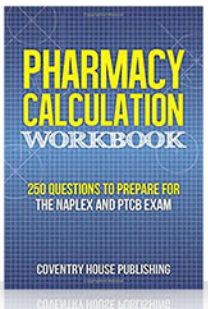
PREPARE FOR SUCCESS!

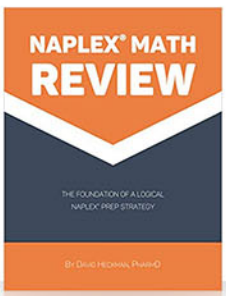
Comprehensive (NAPLEX)

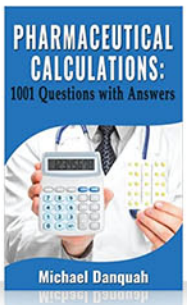


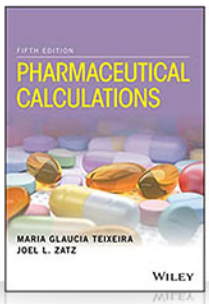


Calculations (NAPLEX)

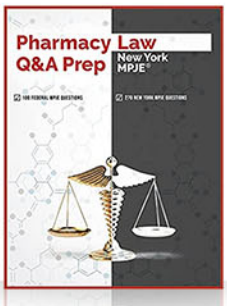


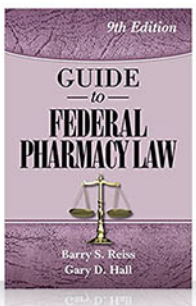




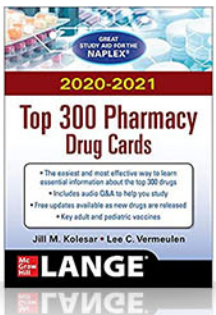


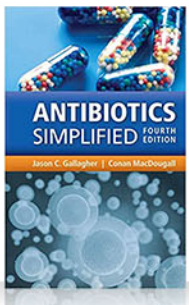
Pharmacy Law (MPJE)

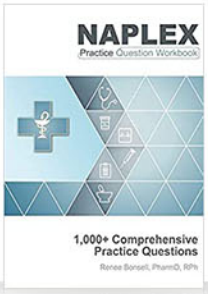


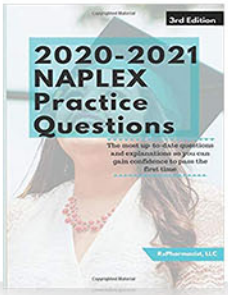


Supplemental









DISCLAIMERS

DRUG CARDS DAILY

Monday at 7 am EST
(6 am CST, 4 am PST)

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*HEY **STUDENT!***

When I was P1 one of the best pieces of advice I got from those before me was to use a NAPLEX Prep book while learning each topic.

This helps focus your learning and the repetition helps to retain info and indirectly prepare you for the NAPLEX

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