



HESI Pharm: Top 100 Guide

Summary Brief

This comprehensive guide synthesizes the 100+ most frequently tested medications on the **HESI RN Exit Exam**.

Success requires moving beyond rote memorization to **pattern recognition** of drug classes.

Core content:

- mechanism of action
- critical assessments (when to hold), and
- safety parameters (antidotes and therapeutic levels)

Top 3 Priority Nursing Interventions:

 **Assess Before You Give:** Always check the specific vital sign or lab value tied to the drug's mechanism (e.g., AP Pulse for **Digoxin**, BP for Antihypertensives, RR for Opioids).

 **Safety First:** Know the Antidotes (e.g., **Naloxone**, **Protamine Sulfate**) Black Box Warnings (e.g., Suicidality with Antidepressants).

 **Patient Teaching:** Focus on safety at home, such as avoiding alcohol with sedatives or recognizing signs of bleeding with anticoagulants.

Overall Goal: Administer medications safely:

- Anticipate physiological responses
- Prevent adverse events through rigorous assessment
- Evaluate therapeutic effectiveness

■ Major Drug Classes

■ ❤️ Cardiovascular Medications

■ 1. **Antihypertensives** (ACEs, ARBs, Beta-Blockers, CCBs)

Lisinopril (ACE Inhibitor):

💡 Vasodilators. Block conversion of Angiotensin I to II. \downarrow HR, \downarrow heart workload.

🔍 **Intervention:** Monitor BP (risk for first-dose hypotension) and Potassium (K+).

⚠️ **Complications & Risks:**

- **Angioedema** (swelling of face/airway) - **Medical Emergency**.
- Cough (Persistent, dry, non-productive) [💡 Frequent test question!]
- Elevated Potassium - **Hyperkalemia**

Losartan (ARB):

💡 Vasodilators. Block Angiotensin II. \downarrow HR, \downarrow heart workload. Used if a patient cannot tolerate ACE cough.

🔍 **Intervention:** Monitor BP and renal function.

⚠️ **Complications & Risks:** **Angioedema** (rare), **Hyperkalemia**.

Metoprolol, Atenolol (Beta-Blockers)

💡 Beta-1 blockers. \downarrow HR, \downarrow BP.

🔍 **Intervention:** Hold if HR < 60 or SBP < 100.

⚠️ **Complications & Risks:** Bradycardia, Hypotension. **Masks signs of hypoglycemia**.

Propranolol (Beta-Blocker + Non-Selective)

💡 Beta-1 and Beta-2 blockers.

🔍 **Intervention:** Monitor BP/Pulse.

⚠️ **Complications & Risks:** **! Bronchoconstriction**; contraindicated in **Asthma/COPD**.

Amlodipine, Diltiazem (Calcium Channel Blockers)

💡 Vasodilation.

🔍 **Intervention:** Monitor BP/HR.

⚠️ **Complications & Risks:** **! Peripheral Edema**, constipation, bradycardia (**Diltiazem**).

Clonidine (Alpha-2 Agonist)

💡 Reduces sympathetic outflow. Reduces adrenaline release. \downarrow BP. \downarrow HTN.

🔍 **Intervention:** Monitor BP.

⚠️ **Complications & Risks:** Drowsiness, dry mouth.

Do not stop abruptly (rebound HTN).

2. Diuretics & Heart Failure

Furosemide (Loop Diuretic)

 Potent fluid removal. **Wastes Potassium.**

 **Intervention:** Monitor I&O, weight, BP, K+.

 **Complications & Risks:** Hypokalemia, Dehydration.

 **!** Push IV slowly (20mg/min) to prevent **Ototoxicity**.

Hydrochlorothiazide (Thiazide Diuretic)

 Action Moderate fluid removal. **Wastes Potassium.**

 **Intervention:** Monitor BP, K+.

 **Give in AM** to prevent nocturia.

Spironolactone (K+-Sparing Diuretic)

 Action Blocks aldosterone. **Retains Potassium.**

 **Intervention**

 **Monitor K+ levels.** (Risk for Hyperkalemia).

Digoxin (Cardiac Glycoside)

Indication Heart Failure, Atrial Fibrillation.

 **Intervention**

 **Check Apical Pulse for 1 full minute;** hold if < 60 bpm.

 **Critical Levels**  Therapeutic Range: 0.5 - 2.0 ng/mL. **Toxicity Signs**  Yellow/Green halos in vision, anorexia, nausea/vomiting. **Antidote** Digoxin **Immune Fab (Digibind)**. 
Hypokalemia increases the risk of Digoxin toxicity.

Nitroglycerin / Isosorbide (Nitrates) **Indication** Angina.  **Intervention** Monitor BP. Headache is common.  **Complications & Risks**  **Contraindicated with Sildenafil (Viagra)** due to fatal hypotension.

Hematology: Anticoagulants & Antiplatelets

Warfarin (Coumadin) **Route** PO (Long-term). **Monitoring**  PT/INR. Therapeutic INR: 2.0 - 3.0 (up to 3.5 for mechanical valves). **Antidote**  **Vitamin K** (Phytonadione). **Teaching**  Maintain consistent intake of green leafy vegetables.

Heparin Route IV/SubQ (Acute). **Monitoring**  aPTT. **Antidote**  **Protamine Sulfate.** **Complications**  HIT (Heparin-Induced Thrombocytopenia).

Enoxaparin (Lovenox) **Route** SubQ (Low-Molecular Weight Heparin).  **Intervention** Administer in "love handles" (abdomen). **Do not expel the air bubble.**

Clopidogrel (Plavix) & Aspirin **Indication** Prevent MI/Stroke.  **Intervention** Monitor for bleeding (tarry stools). **Discontinue 5-7 days before surgery.**

Apixaban / Rivaroxaban (DOACs) **Indication** Stroke prevention in Afib, DVT/PE.  **Intervention** No routine monitoring. Monitor for bleeding. **Antidote**  **Andexanet Alfa.**

CNS & Psych Medications

1. Antidepressants

SSRIs (Fluoxetine, Sertraline, Citalopram) Risks  **Suicide Risk** (Black Box, esp. in youth). **Serotonin Syndrome** (agitation, fever, hyperreflexia). **Teaching**  **Takes 4-6 weeks** for effect. Do not stop abruptly.

TCAs (Amitriptyline) Risks  **Cardiotoxicity** (fatal overdose risk). Anticholinergic effects.

MAOIs (Phenelzine) Diet   **NO Tyramine** (aged cheese, wine, cured meats) → Hypertensive Crisis.

Bupropion (Atypical) Indication Depression, smoking cessation. **Risks**  **Seizure risk** (contraindicated in seizure disorders/eating disorders).

2. Anxiolytics & Mood Stabilizers

Benzodiazepines (Lorazepam, Alprazolam) Indication Anxiety, seizures, alcohol withdrawal. **Risks**  **Sedation, respiratory depression, dependence.** **Antidote**  **Flumazenil**.

Lithium Carbonate Indication Bipolar Disorder. **Critical Levels**  **0.6 - 1.2 mEq/L**. Toxicity begins > 1.5. **Toxicity Signs** Coarse tremors, confusion, diarrhea/vomiting.  **Sodium relationship:** Low Na+ = High Lithium (Toxic). Maintain consistent salt/fluid.

Buspirone Indication Anxiety.  **Intervention** Non-sedating, no dependence. Takes weeks to work.

3. Anticonvulsants

Phenytoin (Dilantin) Critical Levels  **10 - 20 mcg/mL**. **Side Effects**  **Gingival Hyperplasia** (overgrowth of gums). **Administration** IV only with **Normal Saline**.

Valproic Acid Risks  Hepatotoxicity. Teratogenic.

Lamotrigine Risks   **Stevens-Johnson Syndrome** (Life-threatening rash). Report rash immediately.

Endocrine Medications

1. Insulins

Rapid-Acting (Lispro, Aspart) Timing Onset 15 min. Peak 1-2 hrs. **Nursing Action**   **Patient MUST eat within 15 min.**

Short-Acting (Regular) Timing Peak 2-4 hrs. **Nursing Action**  Only insulin allowed IV.

Long-Acting (Glargine) Timing No peak. Duration 24 hrs. **Nursing Action**  **DO NOT MIX.**

2. Oral Antidiabetics & Thyroid

Metformin Action Decreases hepatic glucose production.  **Intervention**  **Hold 48 hours before/after IV Contrast Dye** to prevent Lactic Acidosis/Renal Failure.

Glipizide (Sulfonylurea) Action Stimulates insulin release. **Risks**  **Hypoglycemia**.

Levothyroxine **Indication** Hypothyroidism. **Administration**  Take on an **empty stomach** in the AM. Lifelong therapy. Monitor TSH.

Antimicrobials

Vancomycin **Indication** MRSA, C. Diff. **Monitoring**  **Trough Levels** (10-20 mcg/mL). BUN/Creatinine. **Risks**  **Red Man Syndrome** (flushing/hypotension) if infused too fast. **Ototoxicity/Nephrotoxicity**.

Tetracyclines (Doxycycline) **Risks**  **Tooth Discoloration** (don't give to children <8 or pregnant women). **Photosensitivity**. **Teaching**  Do not take with milk/antacids. Sit upright for 30 min.

Fluoroquinolones (Ciprofloxacin, Levofloxacin) **Risks**   **Tendon Rupture** (Black Box Warning).

Metronidazole (Flagyl) **Teaching**   **NO ALCOHOL** (Disulfiram-like reaction: severe vomiting).

Sulfamethoxazole/Trimethoprim (Bactrim) **Risks**  Sulfa allergy, crystalluria (drink water!), Photosensitivity.

Respiratory Medications

Albuterol (SABA) **Indication** Acute asthma attack ("Rescue Inhaler"). **Side Effects** Tachycardia, tremors.

Fluticasone/Salmeterol (Advair) **Indication** Maintenance ("Controller"). **Teaching**  Rinse mouth after use to prevent **Thrush** (Candidiasis).

Montelukast **Indication** Asthma/Allergy prevention. **Risks**  Neuropsychiatric events (mood changes).   **Gastrointestinal & Miscellaneous**

Proton Pump Inhibitors (Omeprazole, Pantoprazole) **Indication** GERD, Ulcers. **Teaching**  Take 30-60 min before meals. Long term risk: C. Diff, Osteoporosis.

Ondansetron (Zofran) **Indication** Nausea/Vomiting. **Risks**  **QT Prolongation**.

Alendronate (Bisphosphonate) **Indication** Osteoporosis. **Administration**  Take on empty stomach with full glass of water.  **Sit upright for 30 mins** to prevent esophagitis.

Allopurinol **Indication** Gout (Prevention). **Teaching**  Increase fluids. Does not treat acute attacks.

Statins (Atorvastatin, Simvastatin) Indication High Cholesterol. Risks  Hepatotoxicity, **Rhabdomyolysis** (muscle pain). **Administration**  Take in evening.

Acetaminophen Risks  Hepatotoxicity. Max dose **4g/day**. **Antidote**  **Acetylcysteine (Mucomyst)**.

NSAIDs (Ibuprofen, Naproxen) Risks  GI Bleeding, Renal impairment. Take with food.

Common Comparative Pathology Examples

Feature	Hypoglycemia (Cold & Clammy)	Hyperglycemia (Hot & Dry)
Signs	Shaky, sweaty, confused, tachycardia.	Polyuria, Polydipsia, Polyphagia, fruity breath.
Priority	 Check BG. Give 15g Fast Carb (juice) .	 Check BG. Administer Insulin/Fluids .
Risk	Brain Damage / Coma.	DKA / HHNS.

Feature	Hyperthyroidism (Graves)	Hypothyroidism (Hashimoto's)
Metabolism	 HIGH (Fast) .	 LOW (Slow) .
S/S	Weight loss, heat intolerance, exophthalmos .	Weight gain, cold intolerance, lethargy.
Tx	PTU, Methimazole , Thyroidectomy.	Levothyroxine .

■ ADPIE: Case Study

Scenario: Mrs. J, 65, is admitted with **A-Fib** and started on **Warfarin**. She loves gardening and salads.

- **Assessment:** **Monitor INR**. Assess bruising, bleeding gums, and diet.
- **Diagnosis:** **⚠ Risk for Bleeding** related to anticoagulant therapy.
- **Planning:** Patient will **maintain INR between 2.0-3.0** and know diet restrictions.
- **Implementation:** Administer **Warfarin** at same time daily.
- **Teach:** Use soft toothbrush, electric razor.
Green leafy vegetables are OK (**Vitamin K**), but **keep intake consistent**.
- **Evaluation:** **INR stabilizes at 2.5**. No signs of hematuria or epistaxis.

Must Know Test Alerts

- ⌚ **Magnesium Sulfate**: Used for **Pre-eclampsia**. Antidote is **Calcium Gluconate**. Watch for **decreased DTRs** (toxicity).
- ⌚ **Oxytocin (Pitocin)**: High alert med for labor induction. Stop if contractions are **< 2 min apart** or **fetal distress** occurs.
- ⌚ **Potassium (K+)**: **NEVER** push IV. Must be diluted and infused slowly.
- ⌚ **Kayexalate**: Used to lower high **Potassium** (binds K+ in gut).
- ⌚ **Metronidazole (Flagyl)**: **No Alcohol** (**Disulfiram** reaction).
- ⌚ **Alendronate**: **Sit upright for 30 mins** after taking to prevent esophagitis.
- ⌚ **Sildenafil (Viagra)**: **NEVER** with **Nitroglycerin (Fatal Hypotension)**.
- ⌚ **Allopurinol**: **Increase fluid intake** to prevent **kidney stones** (excretes uric acid).
- ⌚ **Sucralfate**: Acts as a "**mucosal barrier**" (band-aid) for ulcers. **Take 1 hour before meals**.
- ⌚ **Lithium**: **Toxicity (>1.5)** looks like drunk behavior (ataxia, slurred speech). **Hydrate!**