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Cold, Flu & Allergy Medications

A comprehensive pharmacology reference covering antihistamines, decongestants, antitussives, expectorants, mucolytics, analgesics/antipyretics, and antivirals — with indications, mechanisms, side effects, routes, onset/peak, contraindications, and patient teaching for high-yield NCLEX preparation.

RESPIRATORY

PHARMACOLOGY

HIGH-YIELD NGN

7 DRUG CLASSES



SOURCE DISCLOSURE

This topic is not present in Student's uploaded personal notes. Content is drawn from standard NGN NCLEX 2026 references: *Saunders Comprehensive Review for the NCLEX-RN*, *ATI Pharmacology Made Easy*, *Lippincott NCLEX-RN Pharmacology Review*, and current CDC/FDA prescribing guidelines (2025–2026).

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Definition & Overview

WHAT & WHY IT MATTERS

What These Medications Treat

- ▶ **Common Cold:** Viral upper respiratory infection (rhinovirus) — symptomatic treatment only, no cure
- ▶ **Influenza (Flu):** Viral illness (Influenza A/B) — symptomatic + antiviral treatment within 48 hrs of onset
- ▶ **Allergic Rhinitis:** IgE-mediated histamine release from allergen exposure

Why NCLEX Tests This

- ▶ OTC medications carry high **misuse risk** in older adults and children
- ▶ Many contain **multiple ingredients** → risk of duplicate dosing & overdose
- ▶ Significant **drug-disease interactions** (HTN, glaucoma, BPH, DM)
- ▶ Cornerstone of **patient teaching** questions on NGN

The 7 Major Drug Classes Covered

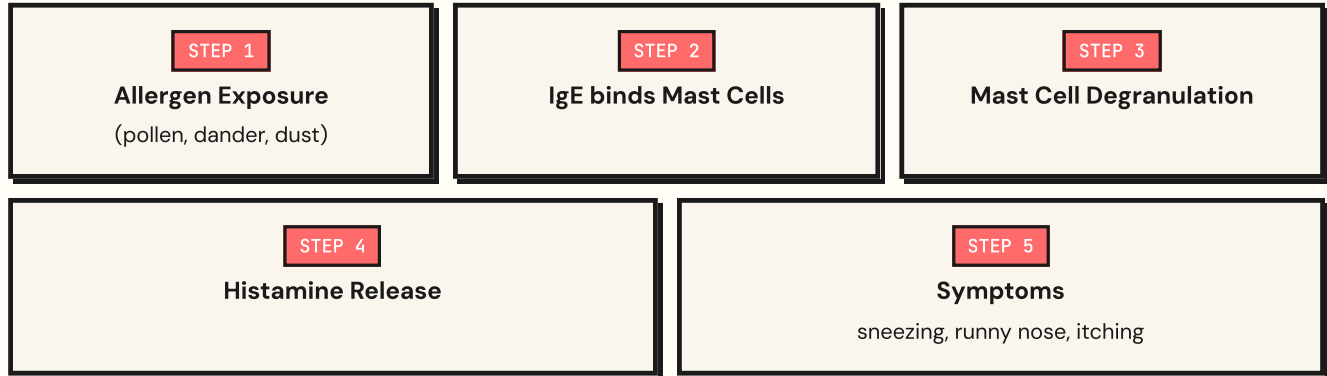
- ▶ **Antihistamines** (1st & 2nd generation)
- ▶ **Decongestants** (oral & topical)
- ▶ **Antitussives** (cough suppressants)
- ▶ **Expectorants** (loosen secretions)
- ▶ **Mucolytics** (break up mucus)
- ▶ **Analgesics/Antipyretics** (pain & fever)
- ▶ **Antivirals** (influenza-specific)

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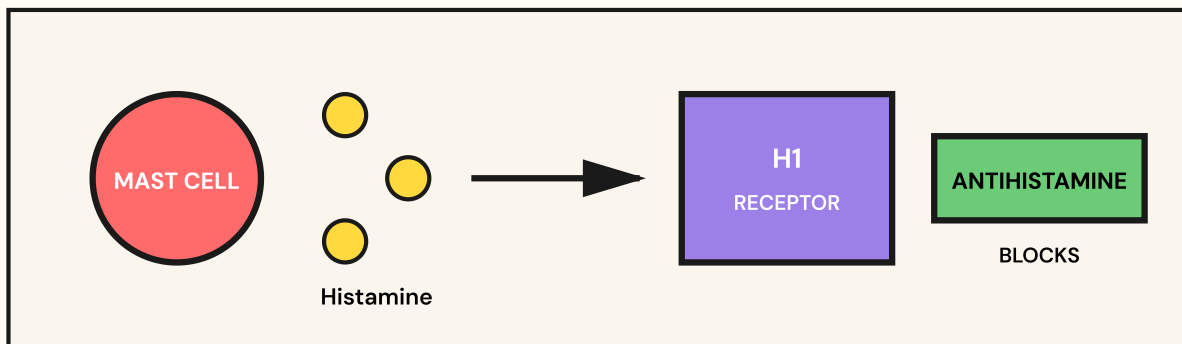
Pathophysiology (Simplified)

WHY THE SYMPTOMS HAPPEN

Allergic Response Pathway



Histamine Release & Receptor Blockade



ANTIHISTAMINES COMPETITIVELY BLOCK H1 RECEPTORS → NO SYMPTOM CASCADE

Cold/Flu Symptom Cascade

Cold (Rhinovirus)

- ▶ Viral invasion of nasal mucosa
- ▶ Inflammatory response → vasodilation, edema
- ▶ Increased mucus production
- ▶ **Gradual onset:** sore throat → congestion → cough (1–2 weeks)

Influenza (Flu)

- ▶ Influenza virus attaches via neuraminidase enzyme
- ▶ Viral replication in respiratory epithelium
- ▶ Massive cytokine release → systemic symptoms
- ▶ **Sudden onset:** high fever, body aches, profound fatigue

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Signs & Symptoms by Condition

MATCHING SYMPTOMS TO DRUG CLASSES



Allergy

- Sneezing, itchy/watery eyes
- Clear runny nose (rhinorrhea)
- Postnasal drip
- Itchy throat/ears
- **Treat:** Antihistamine



Cold

- Low-grade fever ($<101^{\circ}\text{F}$)
- Nasal congestion, sore throat
- Productive cough (later)
- Mild fatigue
- **Treat:** Decongestant, expectorant, analgesic



Flu

- High fever ($101\text{--}104^{\circ}\text{F}$)
- Severe myalgia, headache
- Profound fatigue/weakness
- Dry cough, chills
- **Treat:** Antiviral + symptomatic



RED FLAGS — Refer to Provider Immediately

- Difficulty breathing, chest pain, or shortness of breath
- Symptoms lasting > 10 days or worsening after initial improvement (possible bacterial superinfection)
- Fever $> 103^{\circ}\text{F}$ not responding to antipyretics
- Confusion, severe lethargy, dehydration signs in elderly/children
- Stiff neck + fever + headache (rule out meningitis)

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Priority Nursing Interventions

ABC + SAFETY FRAMEWORK

Airway / Breathing

- ▶ **Assess** respiratory rate, effort, O₂ sat before/after meds
- ▶ **Auscultate** lung sounds — crackles, wheezes warrant escalation
- ▶ **Monitor** for paradoxical bronchospasm with antihistamines in asthma pts
- ▶ **Position** upright (semi-Fowler's) to ease breathing

Circulation

- ▶ **Monitor BP & HR** — decongestants ↑ both (HTN risk)
- ▶ **Hold** pseudoephedrine if BP > 140/90 or HR > 100
- ▶ **Assess** for palpitations, chest pain after sympathomimetics

Medication Safety

- ▶ **Check** for duplicate ingredients (acetaminophen is in many combos)
- ▶ **Verify** max daily dose: acetaminophen 3 g/day (4 g absolute max)
- ▶ **Review** home meds for interactions (MAOIs + decongestants = HTN crisis)
- ▶ **Assess** contraindications: HTN, glaucoma, BPH, hyperthyroidism

Fall & Safety Risk

- ▶ **First-gen antihistamines** cause sedation — fall risk, especially in older adults (Beers Criteria)
- ▶ **Educate** no driving until response known
- ▶ **Avoid** alcohol & CNS depressants with sedating meds
- ▶ **Push fluids** — thins secretions, prevents constipation/dry mouth

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Pharmacology — 7 Drug Classes

INDICATION • MOA • SIDE EFFECTS • ROUTE • ONSET/PEAK • CONTRAINDICATIONS • TEACHING

Antihistamines (H₁ Blockers)

CLASS 1 OF 7

DRUGS	1st Gen (sedating): Diphenhydramine (Benadryl), Chlorpheniramine (Chlor-Trimeton), Hydroxyzine (Vistaril), Promethazine (Phenergan) · 2nd Gen (non-sedating): Loratadine (Claritin), Cetirizine (Zyrtec), Fexofenadine (Allegra), Desloratadine (Clarinex)
INDICATION	Allergic rhinitis, urticaria (hives), motion sickness (1st gen), insomnia (1st gen), anaphylaxis adjunct, pruritus
MOA	Competitively blocks H ₁ histamine receptors → prevents histamine-mediated symptoms (vasodilation, edema, itching)
SIDE EFFECTS	1st gen: Sedation, dry mouth, urinary retention, blurred vision, constipation, confusion in elderly (anticholinergic effects) · 2nd gen: Minimal sedation, headache, dry mouth
ROUTE	PO (tablet, liquid, ODT), IV/IM (diphenhydramine, promethazine), topical (cream)
ONSET / PEAK	Diphenhydramine PO: 15–30 min onset / 1–4 hr peak · Loratadine PO: 1–3 hr onset / 8–12 hr peak · Cetirizine PO: 30 min onset / 1 hr peak
CONTRAINDICATIONS	Narrow-angle glaucoma, BPH, severe asthma exacerbation, MAOI use, newborns/breastfeeding (1st gen), known hypersensitivity
TEACHING	Avoid alcohol & CNS depressants; no driving until effects known (1st gen); take Zyrtec/Allegra in AM if causes drowsiness; suck on hard candy for dry mouth; 2nd gen preferred for older adults (Beers Criteria flags 1st gen)

Decongestants (Sympathomimetics)

CLASS 2 OF 7

DRUGS	Oral: Pseudoephedrine (Sudafed), Phenylephrine (Sudafed PE) · Topical (nasal): Oxymetazoline (Afrin), Phenylephrine spray
INDICATION	Nasal/sinus congestion from cold, flu, allergic rhinitis, sinusitis, eustachian tube congestion
MOA	Stimulates alpha-1 adrenergic receptors → vasoconstriction of nasal blood vessels → ↓ swelling & secretions
SIDE EFFECTS	↑ BP, ↑ HR, palpitations, insomnia, nervousness, tremor, urinary retention · Topical: Rebound congestion (rhinitis medicamentosa) if used > 3–5 days

ROUTE	PO (tablet, liquid, extended-release), Intranasal spray/drops
ONSET / PEAK	Pseudoephedrine PO: 30 min onset / 1–2 hr peak / 4–6 hr duration · Oxymetazoline nasal: 5–10 min onset / 12 hr duration
CONTRAINDICATIONS	HTN, CAD, hyperthyroidism, DM, BPH, narrow-angle glaucoma, MAOI use (within 14 days) , children < 4 yrs, severe coronary disease
TEACHING	Topical: limit to 3 days max (rebound risk); take last dose by 4 PM (insomnia); pseudoephedrine sold behind pharmacy counter (ID required, meth precursor); avoid in HTN — use saline spray instead; monitor BP at home

Antitussives (Cough Suppressants)

CLASS 3 OF 7

DRUGS	Non-opioid: Dextromethorphan (Robitussin DM, Delsym), Benzonatate (Tessalon Perles) · Opioid: Codeine, Hydrocodone (combo products)
INDICATION	Dry, non-productive cough only — do NOT suppress productive coughs (need to clear secretions)
MOA	Dextromethorphan: Suppresses medullary cough center · Benzonatate: Numbs stretch receptors in lungs & pleura · Codeine: CNS cough center suppression
SIDE EFFECTS	Dextromethorphan: Drowsiness, dizziness, GI upset; abuse potential at high doses (hallucinations) · Benzonatate: Numbness if chewed (DANGER — laryngospasm) · Codeine: Sedation, constipation, respiratory depression, dependence
ROUTE	PO (liquid, tablet, capsule, lozenge)
ONSET / PEAK	Dextromethorphan: 15–30 min onset / 2 hr peak / 3–6 hr duration · Benzonatate: 15–20 min onset / 3–8 hr duration · Codeine: 30 min onset / 1–2 hr peak
CONTRAINDICATIONS	Productive cough (need to clear mucus), MAOI use (serotonin syndrome risk with DXM), children < 12 yrs (codeine — FDA black box) , severe respiratory depression, opioid dependence
TEACHING	Swallow Tessalon whole — do NOT chew, suck, or break (causes oral numbness & choking); use only for dry cough; monitor for respiratory depression with opioid antitussives; do not combine with alcohol; report cough lasting > 7 days

Expectorants

CLASS 4 OF 7

DRUGS	Guaifenesin (Mucinex, Robitussin) — only widely used expectorant
INDICATION	Productive cough — thick, tenacious mucus needing thinning to clear secretions

MOA	↑ secretion of respiratory tract fluid → reduces viscosity of mucus → easier to expectorate (cough up)
SIDE EFFECTS	Generally well tolerated; nausea, vomiting, dizziness, headache, rash (rare)
ROUTE	PO (immediate-release liquid/tablet, extended-release tablet)
ONSET / PEAK	30 min onset / 1–2 hr peak / 4–6 hr duration (12 hr for ER)
CONTRAINDICATIONS	Persistent cough lasting > 7 days, cough with high fever, hypersensitivity, children < 4 yrs
TEACHING	Drink 8+ glasses of water daily — water is the most important expectorant; do NOT crush ER tablets; productive cough needs to continue (do not combine with antitussive); use humidifier

Mucolytics

CLASS 5 OF 7

DRUGS	Acetylcysteine (Mucomyst, Acetadote) — also used as antidote for acetaminophen toxicity
INDICATION	Thick mucus in cystic fibrosis, COPD, pneumonia · Acetaminophen overdose antidote
MOA	Breaks disulfide bonds in mucus → liquefies thick secretions for easier clearance
SIDE EFFECTS	Strong sulfur smell (rotten eggs) → nausea/vomiting; bronchospasm; stomatitis; rhinorrhea · IV form: anaphylactoid reactions
ROUTE	Nebulizer/inhalation, PO (for APAP overdose), IV (for APAP overdose)
ONSET / PEAK	Inhaled: 1 min onset / 5–10 min peak / 1 hr duration
CONTRAINDICATIONS	Hypersensitivity; caution in asthma (bronchospasm risk — give bronchodilator first)
TEACHING	Pre-medicate with bronchodilator if asthma; expect strong smell; rinse mouth after use; suction available at bedside; for APAP overdose mix with cola/juice to mask taste

Analgesics & Antipyretics

CLASS 6 OF 7

DRUGS	Acetaminophen (Tylenol) · NSAIDs: Ibuprofen (Advil, Motrin), Naproxen (Aleve) · Aspirin (adults only)
INDICATION	Fever, headache, body aches, sore throat, myalgia of cold/flu

MOA	Acetaminophen: Inhibits prostaglandins in CNS (no anti-inflammatory action) · NSAIDs: Inhibit COX-1/COX-2 → ↓ prostaglandins (anti-inflammatory + analgesic + antipyretic) · Aspirin: Irreversible COX inhibition
SIDE EFFECTS	Acetaminophen: Hepatotoxicity (overdose); rash · NSAIDs: GI bleeding, ulcers, ↑ BP, renal impairment, ↑ CV events · Aspirin: GI bleed, tinnitus (toxicity sign), Reye's syndrome in children
ROUTE	PO (tablet, liquid, chewable), IV (acetaminophen, ketorolac), Rectal suppository, Topical
ONSET / PEAK	Acetaminophen PO: 30 min onset / 1–2 hr peak · Ibuprofen PO: 30 min onset / 1–2 hr peak / 4–6 hr duration
CONTRAINDICATIONS	Acetaminophen: Liver disease, alcoholism · NSAIDs: Active GI bleed/ulcer, renal failure, severe HF, 3rd trimester pregnancy, ASA allergy · Aspirin: children < 18 with viral illness (Reye's syndrome)
TEACHING	Max APAP: 3 g/day (4 g absolute max) — check combo cold meds; take NSAIDs with food; report black tarry stools; no aspirin for children/teens with viral illness; alternate APAP & ibuprofen safely (different mechanisms); avoid alcohol with APAP

Antivirals (Influenza)

CLASS 7 OF 7

DRUGS	Neuraminidase inhibitors: Oseltamivir (Tamiflu), Zanamivir (Relenza), Peramivir (Rapivab) · Cap-dependent endonuclease inhibitor: Baloxavir (Xofluza)
INDICATION	Treatment & prevention of Influenza A and B · Must start within 48 hrs of symptom onset for efficacy
MOA	Oseltamivir/Zanamivir: Inhibit neuraminidase enzyme → prevents viral release & spread between cells · Baloxavir: Inhibits viral replication at endonuclease step
SIDE EFFECTS	Oseltamivir: Nausea, vomiting, headache, neuropsychiatric events (rare confusion/delirium in children) · Zanamivir: Bronchospasm (inhaled), cough · Baloxavir: Diarrhea, bronchitis
ROUTE	Oseltamivir: PO (capsule, suspension) · Zanamivir: Inhaled (Diskhaler) · Peramivir: IV · Baloxavir: PO single dose
ONSET / PEAK	Oseltamivir: Peak 3–4 hr · 5-day course (twice daily) · Baloxavir: single dose effective
CONTRAINDICATIONS	Hypersensitivity · Zanamivir contraindicated in asthma/COPD (bronchospasm risk) · Renal dose adjustment for oseltamivir

TEACHING

Start within 48 hrs of symptom onset; take full 5-day course even if feeling better; not a substitute for flu vaccine; report unusual behavior in children (neuropsychiatric effects); hand hygiene to prevent spread; rest, hydration, isolation

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NCLEX Test Traps ⚠️

WRONG VS RIGHT THINKING

TRAP #1: Productive vs Non-productive Cough

✗ WRONG THINKING

"Patient has a cough → give antitussive (cough suppressant)"

✓ CORRECT THINKING

Assess cough type first. **Productive cough = expectorant (guaifenesin) + hydration.** Suppressing it traps infected mucus → pneumonia risk. Antitussives **ONLY** for dry, hacking cough that interferes with sleep.

TRAP #2: "It's Just OTC" — Decongestants & Hypertension

✗ WRONG THINKING

"Pseudoephedrine is OTC and safe — anyone can take it for a stuffy nose"

✓ CORRECT THINKING

NEVER give pseudoephedrine/phenylephrine to HTN, CAD, hyperthyroid, BPH, glaucoma, or DM patients. Sympathomimetics cause vasoconstriction → BP spike. Recommend saline nasal spray instead.

TRAP #3: Tessalon Perles — DO NOT CHEW

✗ WRONG THINKING

"Tessalon is a perle/lozenge so let the patient suck or chew it for cough relief"

✓ CORRECT THINKING

SWALLOW WHOLE. If chewed or broken, benzonatate numbs the mouth and throat → loss of gag reflex → choking and laryngospasm. Lethal in children if multiple capsules accessed.

TRAP #4: Acetaminophen Hiding in Combo Meds

✗ WRONG THINKING

"Patient took Tylenol 1000 mg for headache plus NyQuil at bedtime — no problem since each is below the max"

✓ CORRECT THINKING

NyQuil, DayQuil, Theraflu, Excedrin, and many combos contain APAP. Total daily dose can exceed 4 g → hepatotoxicity. Always reconcile ALL ingredients; teach to read labels.

TRAP #5: Aspirin + Child + Virus = Reye's Syndrome

✗ **WRONG THINKING**

"Child has flu and fever — give baby aspirin to bring it down"

✓ **CORRECT THINKING**

NEVER give aspirin to anyone < 18 yrs with viral illness — causes Reye's syndrome (acute encephalopathy + hepatic failure). Use acetaminophen or ibuprofen instead.

TRAP #6: Rebound Congestion from Afrin

✗ **WRONG THINKING**

"Afrin works great so the patient can keep using it daily until the cold is over"

✓ **CORRECT THINKING**

Topical decongestants limited to 3 (max 5) days. Longer use causes rhinitis medicamentosa — rebound congestion worse than original. Wean by reducing one nostril at a time.

TRAP #7: Antivirals Are Not Antibiotics

✗ **WRONG THINKING**

"Patient feels better after 2 days of Tamiflu — can stop the course early"

✓ **CORRECT THINKING**

Complete the full 5-day Tamiflu course. Stopping early allows viral resistance & rebound. Antivirals must also be started **within 48 hrs** of symptom onset to be effective.

TRAP #8: First-Gen Antihistamines in Older Adults

✗ **WRONG THINKING**

"Benadryl is fine for the 78-year-old's allergies and to help her sleep"

✓ **CORRECT THINKING**

Beers Criteria flags diphenhydramine in adults ≥ 65 — anticholinergic burden → confusion, falls, urinary retention, constipation. Use loratadine or cetirizine instead.

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Patient & Family Education

SELF-CARE & SAFETY PEARLS

Reading Labels Safely

- ✓ Read every active ingredient before combining medications
- ✓ Track total acetaminophen — limit to 3 g/day for healthy adults
- ✓ Avoid pseudoephedrine if HTN, heart disease, or diabetes
- ✓ Children < 4 yrs: no OTC cold/cough medications (FDA warning)
- ✗ Do not mix multi-symptom products without checking ingredients

Non-Pharmacologic Self-Care

- ✓ **Hydration:** 8–10 glasses water/day thins secretions naturally
- ✓ **Humidifier:** Cool mist soothes airways & loosens mucus
- ✓ **Saline nasal spray:** Safe alternative to decongestants
- ✓ **Rest:** Immune support; isolate to prevent spread
- ✓ **Honey:** Evidence-based cough relief (NOT for infants < 1 yr — botulism risk)

Prevention Pearls

- ▶ **Annual flu vaccine** for everyone > 6 months (CDC)
- ▶ Hand hygiene — soap and water 20 seconds
- ▶ Cover cough with elbow, not hand
- ▶ Avoid touching face; clean high-touch surfaces
- ▶ Stay home when ill — fever-free 24 hrs without antipyretics before returning

When to Call Provider

-  Fever > 103°F or lasting > 3 days
-  Difficulty breathing or chest pain
-  Symptoms lasting > 10 days or worsening after improvement
-  Severe headache with stiff neck
-  Confusion, severe lethargy, signs of dehydration
-  Ear pain, sinus pain > 7 days (possible bacterial superinfection)

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Memory Mnemonics

QUICK PATTERN RECOGNITION

"FLU" — Flu Treatment Priority

- F** — **Fluids** & rest, push hydration
- L** — **Lower temp** with acetaminophen (NOT aspirin in kids)
- U** — **Use antiviral** within 48 hrs (oseltamivir)

"ABCDE" — Decongestant Contraindications

- A** — **Angina** / CAD
- B** — **BPH** (urinary retention)
- C** — **Cardiac arrhythmias**
- D** — **Diabetes** (glucose effects)
- E** — **Elevated BP** / HTN

"SLUDD" — Anticholinergic Effects of 1st-Gen Antihistamines (REMEMBER: BLOCKED!)

First-gen antihistamines have **OPPOSITE** (anti-) cholinergic effects:

- Can't See** (blurred vision)
- Can't Pee** (urinary retention)
- Can't Spit** (dry mouth)
- Can't Sh*t** (constipation)

→ Especially dangerous in older adults

"TYLENOL" — APAP Safe Use

- T**otal daily = 3 g max
- Y**ellow eyes (jaundice) = stop
- L**iver-toxic with alcohol
- E**very combo med — check label
- N**-acetylcysteine = antidote

- O** verdose at 4 g+
- L** ate symptoms (24–72 hrs)

"48 RULE" for Tamiflu

Oseltamivir must be started within **48 hours** of flu symptom onset to be effective. After 48 hours → minimal benefit. **Time is virus.**

"3-DAY AFRIN"

Topical nasal decongestants (oxymetazoline, phenylephrine) → MAX **3 days**. Day 4+ = rebound congestion (rhinitis medicamentosa).

"GENERATION RULE"

1st-gen antihistamines end in *-amine* or *-zine* → **SEDATING** (cross BBB)
2nd-gen antihistamines end in *-adine* or *-izine* with no sedation (don't cross BBB well)
Diphenhydramine (sleepy) vs Loratadine (no sleep)

"REYE'S RULE"

Rare but deadly
 Encephalopathy + liver damage
 Younger than 18
 Eliminate aspirin
 Stay with acetaminophen during viral illness

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NCJMM Clinical Judgment Scenario

NEXT GENERATION NCLEX — 6-STEP MODEL

CLINICAL SCENARIO

Patient: 72-year-old female presents to urgent care with 2 days of nasal congestion, sneezing, dry cough, headache, and body aches. Temperature 100.4°F. **PMH:** Hypertension (controlled on lisinopril 20 mg/day), benign prostatic hyperplasia (wait — patient is female, but with mild urinary urgency), narrow-angle glaucoma. **Medications:** Lisinopril, latanoprost eye drops, and she reports she "took some Sudafed and Benadryl from her cabinet last night" along with her usual evening glass of wine. **Vital signs:** BP 168/98, HR 108, RR 18, SpO₂ 96% RA. She reports feeling "really jittery and confused this morning, and her eyes feel pressured."

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STEP 1 OF 6 — RECOGNIZE CUES

Identify Relevant Clinical Information

- **Subjective:** Jittery, confused; eye pressure sensation; congestion, dry cough, headache, body aches × 2 days
- **Objective:** BP 168/98 (elevated from baseline), HR 108 (tachycardia), low-grade fever 100.4°F
- **Medication red flags:** Pseudoephedrine in HTN patient + diphenhydramine in narrow-angle glaucoma + alcohol
- **Age factor:** 72 yrs — Beers Criteria contraindicates diphenhydramine

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STEP 2 OF 6 — ANALYZE CUES

Interpret & Cluster the Data

- **Sympathomimetic effect cluster:** ↑ BP + tachycardia + jittery = pseudoephedrine side effects in HTN patient
- **Anticholinergic effect cluster:** Confusion + eye pressure + urinary urgency = diphenhydramine + glaucoma (CONTRAINDICATION)
- **Drug-drug-disease interactions:** Pseudoephedrine ↔ HTN (BP crisis risk); Diphenhydramine ↔ glaucoma (acute angle-closure risk); Alcohol ↔ diphenhydramine (CNS depression in elderly)
- **Symptom pattern:** Cold or early flu — needs symptomatic treatment WITHOUT contraindicated meds

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STEP 3 OF 6 — PRIORITIZE HYPOTHESES

Rank Most Likely Problems

- **#1 PRIORITY:** Drug-induced hypertensive response + anticholinergic toxicity in older adult with multiple contraindications
- **#2:** Acute angle-closure glaucoma risk (medical emergency — vision loss)
- **#3:** Viral URI (cold) requiring SAFE symptomatic management
- **#4:** Patient education deficit re: OTC medication safety

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STEP 4 OF 6 — GENERATE SOLUTIONS

Plan Interventions

- **Immediate:** Hold both Sudafed (pseudoephedrine) and Benadryl (diphenhydramine); notify provider
- **Assess:** Visual acuity, eye pain/redness (rule out acute glaucoma); reassess BP/HR in 30 min
- **Safer alternatives:** Saline nasal spray for congestion; loratadine or fexofenadine (non-sedating, anticholinergic-light); acetaminophen for fever/aches (max 3 g/day in elderly)
- **Patient education:** Avoid OTC combos with pseudoephedrine/diphenhydramine; bring all OTC meds to next visit for review; medication reconciliation
- **Non-pharm:** Hydration, humidifier, rest, monitor home BP

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STEP 5 OF 6 — TAKE ACTION

Implement Interventions

- **Discontinue** pseudoephedrine and diphenhydramine immediately; document patient response
- **Notify HCP** of BP 168/98, HR 108, confusion; obtain orders for safer alternatives
- **Administer** acetaminophen 650 mg PO Q6H PRN (max 3 g/24h) for fever/aches; loratadine 10 mg PO daily for runny nose
- **Teach** patient: saline spray every 2–3 hours; humidifier at bedtime; 8+ glasses water/day; how to read OTC labels
- **Recheck** VS in 30 min and 1 hr; ensure BP trending down before discharge
- **Schedule** follow-up with PCP within 48 hrs for medication reconciliation and BP recheck

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STEP 6 OF 6 — EVALUATE OUTCOMES

Did the Plan Work?

- **Expected outcomes:** BP returns to baseline (<140/90) within 2–4 hrs; HR < 90; no progression of confusion; no eye pain/vision changes
- **Patient verbalizes** understanding of which OTC ingredients to avoid (pseudoephedrine, diphenhydramine) and lists 3 safer alternatives
- **Patient demonstrates** ability to read OTC label and identify active ingredients
- **Negative outcomes requiring escalation:** Persistent BP > 160/100, worsening confusion, eye pain, vision changes → ED transfer
- **Long-term:** No repeat ED visits for OTC-related adverse effects; provider follow-up completed; medication list updated in chart