NGN NCLEX 2026 — VISUAL STUDY LIBRARY

PHARMACOLOGY · GERIATRIC SAFETY

# Beers *Criteria*

***Potentially inappropriate medications (PIMs) to avoid in adults 65 and older — a tool to reduce drug-related harm, falls, delirium, and hospitalization.***

SOURCE
**AGS 2023 Update**

POPULATION
**Adults ≥ 65 y/o**

CATEGORIES
**5 PIM Domains**

NGN FOCUS
**Drug Safety · Falls · Delirium**

*i* **Source transparency.** Beers Criteria is *not* present in your uploaded project notes. This deliverable draws from the **American Geriatrics Society (AGS) 2023 Updated Beers Criteria**, Saunders NCLEX-RN (latest edition), ATI Pharmacology Made Easy, and Lippincott Nursing Pharmacology, aligned to the NGN NCLEX 2026 test plan.

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DEFINITION · OVERVIEW

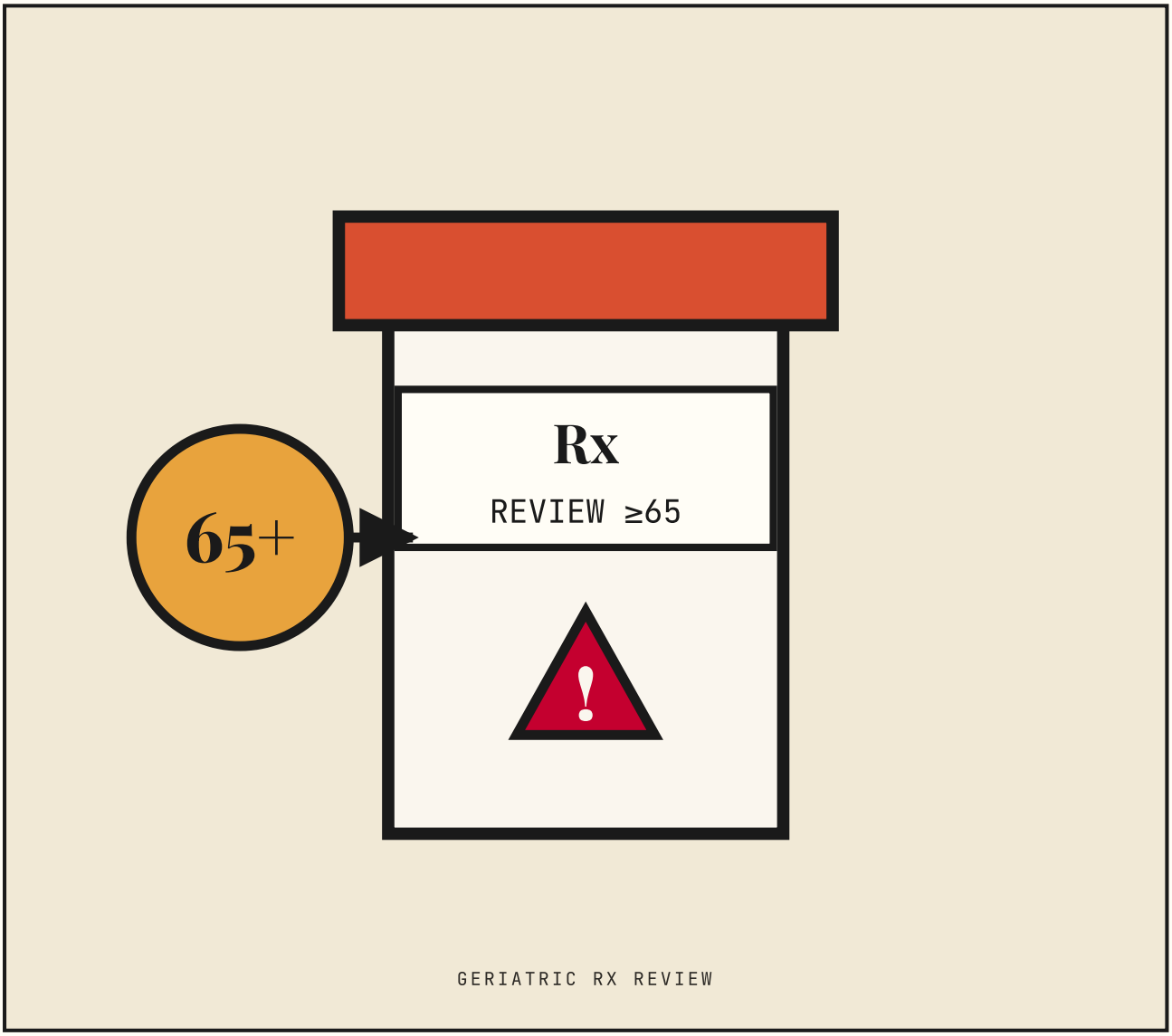
# What Are the Beers Criteria?

A **Evidence-based list** of medications that are *potentially inappropriate* for most older adults (≥ 65) because the risks outweigh the benefits.

B Maintained by the **American Geriatrics Society (AGS);** first published 1991, most recent update **2023**.

C Used as a clinical decision-support tool — **not** an absolute prohibition. Always weigh against the individual patient's goals, comorbidities, and alternatives.

D Reduces **falls, delirium, hospitalizations, and polypharmacy-related deaths** — high-yield NGN priority for any older-adult scenario.



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PATHOPHYSIOLOGY · WHY OLDER ADULTS ARE VULNERABLE

# Aging Changes Drug Handling

### 1 Absorption

↓ gastric acid, ↓ GI motility → delayed onset, altered bioavailability.

### 2 Distribution

↑ body fat, ↓ lean mass & water → lipid-soluble drugs (benzos) **accumulate**.

### 3 Metabolism

↓ hepatic blood flow + ↓ CYP450 activity → drugs cleared **slower**.

### 4 Excretion

↓ GFR & creatinine clearance → renally-cleared drugs **accumulate to toxic levels**.

**NET EFFECT**

Smaller doses produce **bigger effects** and last **longer** — increasing risk of sedation, hypotension, falls, delirium, bleeding, and arrhythmia. The brain is also more sensitive (↑ blood–brain barrier permeability + ↓ receptor reserve).

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ADVERSE EFFECTS · MILD VS SEVERE

# Recognize the Harm

## ◐ Mild / Early Cues

| | |
|---|---|
| CNS | Drowsiness, dizziness, mild confusion, blurred vision |
| GI | Dry mouth, constipation, nausea, decreased appetite |
| GU | Urinary hesitancy, urgency, incomplete emptying |
| CV | Mild orthostatic dizziness on standing |
| FUNC | New gait unsteadiness, "I just don't feel right" |

## ● Severe / Red Flags

| | |
|---|---|
| CNS | **Delirium**, acute confusion, hallucinations, agitation |
| SAFE | **FALL with fracture** — esp. hip fracture |
| CV | Syncope, bradycardia, prolonged QT, hypotension |
| GI | **GI bleed** (melena, hematemesis) — NSAIDs, anticoag |
| RENAL | AKI, ↑ creatinine, oliguria |
| META | Severe hypoglycemia (long-acting sulfonylureas) |
| RESP | Respiratory depression (opioids + benzos combo) |

RED FLAG

Any older adult on a Beers-listed drug who presents with **new-onset confusion, a fall, or functional decline** — assume **medication-induced** until proven otherwise. The *Brown Bag Review* (have patient bring all meds) is a key NGN intervention.

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PRIORITY NURSING INTERVENTIONS · ABC FRAMEWORK

# What the Nurse Does

## A

### Airway · Assess

- Monitor LOC, respiratory rate, $O_2$ sat — opioids + benzos suppress respiratory drive
- Assess swallow reflex before PO meds in sedated older adult
- Screen for delirium with **CAM** (Confusion Assessment Method) each shift

## B

### Breathing / Bleeding

- Hold NSAIDs and check for melena, bruising, ↓ Hgb
- Monitor for respiratory depression — naloxone & flumazenil at bedside if high-risk
- Assess for crackles (digoxin toxicity → HF exacerbation)

## C

### Circulation / Cognition

- Check orthostatic BP before ambulation (alpha-blockers, TCAs)
- Implement **fall precautions** — bed low, call light, non-skid socks
- Reorient frequently; encourage family at bedside
- Confirm **blood glucose** q4h on sulfonylureas — esp. glyburide

↑ FIRST PRIORITY

**Hold the drug, notify provider, protect from falls.** Reconcile the full medication list — including OTC, herbals, and supplements.

↑ SAFETY

**Deprescribe stepwise** with provider — never abruptly stop benzodiazepines, opioids, or beta-blockers (withdrawal risk).

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PHARMACOLOGY · BEERS-LISTED DRUG CLASSES

# Drugs to Avoid or Use With Caution

| DRUG CLASS | EXAMPLES | WHY RISKY IN OLDER ADULTS | NURSE'S MOVE |
|---|---|---|---|
| 1st-Gen Antihistamines AVOID | Diphenhydramine (Benadryl), Hydroxyzine, Chlorpheniramine, Promethazine | Strong anticholinergic → confusion, urinary retention, dry mouth, delirium, falls | Suggest 2nd-gen (loratadine, cetirizine) — non-sedating |
| Benzodiazepines AVOID | Diazepam, Lorazepam, Alprazolam, Temazepam, Clonazepam | ↑ Sensitivity → sedation, cognitive impairment, delirium, falls, MVCs, fractures | Taper slowly; never stop abruptly (seizures); non-pharm sleep hygiene first |
| "Z-Drug" Hypnotics AVOID | Zolpidem (Ambien), Zaleplon, Eszopiclone | Same falls/delirium risk as benzos; complex sleep behaviors (sleep-driving) | Sleep hygiene, melatonin if needed; environmental fall precautions |
| Antipsychotics (in dementia) AVOID | Haloperidol, Risperidone, Olanzapine, Quetiapine | Black-box warning: ↑ stroke and mortality in dementia-related psychosis | Reserve for severe agitation w/ harm risk; use lowest dose, shortest duration |
| Tricyclic Antidepressants AVOID | Amitriptyline, Imipramine, Doxepin > 6 mg, Nortriptyline | Highly anticholinergic, sedating, orthostatic hypotension, QT prolongation | SSRIs/SNRIs preferred; monitor BP standing & sitting |
| NSAIDs (chronic) AVOID | Ibuprofen, Naproxen, Indomethacin, Ketorolac (esp. IV/IM) | GI bleed, AKI, HF exacerbation, ↑ BP, antiplatelet effect | Acetaminophen first-line; topical NSAIDs ok; add PPI if must use |
| Skeletal Muscle Relaxants AVOID | Cyclobenzaprine (Flexeril), Methocarbamol, Carisoprodol | Anticholinergic, sedating, falls, ↓ effectiveness at tolerable doses | PT, heat/ice, acetaminophen, lidocaine patch |
| Long-Acting Sulfonylureas AVOID | Glyburide, Chlorpropamide | Prolonged, severe hypoglycemia — often unrecognized in older adults | Glipizide or DPP-4 inhibitor preferred; q4h glucose checks |
| Meperidine AVOID | Demerol | Neurotoxic metabolite (normeperidine) → seizures, delirium; poor analgesia | Use morphine, hydromorphone, or oxycodone at reduced doses |
| Antispasmodics (GU/GI) AVOID | Oxybutynin (immediate-release), Dicyclomine, | Anticholinergic → cognitive impairment, dry mouth, constipation, retention | Bladder training, scheduled toileting; mirabegron alternative |

| DRUG CLASS | EXAMPLES | WHY RISKY IN OLDER ADULTS | NURSE'S MOVE |
|---|---|---|---|
| | Hyoscyamine, Atropine (oral) | | |
| Digoxin > 0.125 mg/day CAUTION | Lanoxin | ↓ Renal clearance → toxicity (N/V, halos, dysrhythmia); narrow therapeutic window | Trough levels, K+, renal function; assess apical pulse 1 min pre-dose |
| PPIs (> 8 weeks) CAUTION | Omeprazole, Pantoprazole, Esomeprazole | C. difficile, bone loss/fractures, ↓ B12, pneumonia, AKI | Reassess indication; step down to H2 blocker or PRN antacid |
| Alpha-1 Blockers (for HTN) AVOID | Doxazosin, Prazosin, Terazosin | Orthostatic hypotension, syncope, falls | Ok for BPH; for HTN use ACE/ARB, thiazide, or CCB |
| Estrogens (oral/topical systemic) AVOID | Conjugated estrogens, Estradiol PO | Carcinogenic, ↑ VTE & CV events | Vaginal estrogen ok at low doses for GSM symptoms |

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NCLEX TEST TRAPS · WRONG VS RIGHT

# Where Students Lose Points

## TRAP 1 — THE OTC SLEEP AID

*An 82-y/o reports she can't sleep and takes Tylenol PM "every night."*

✗ WRONG THINKING

It's OTC, so it must be safe.

✓ CORRECT

Tylenol PM = diphenhydramine. **Beers-listed. Stop it.** Risk of delirium and falls.

## TRAP 2 — "JUST A MUSCLE RELAXER"

*A 75-y/o is prescribed cyclobenzaprine for back pain.*

✗ WRONG THINKING

Encourage compliance with the new prescription.

✓ CORRECT

**Contact provider** — Flexeril is anticholinergic + sedating in older adults. Recommend acetaminophen, PT, heat.

## TRAP 3 — SUNDOWNING ≠ ANTIPSYCHOTIC

*An 80-y/o with dementia becomes agitated each evening. Family wants medication.*

✗ WRONG THINKING

Request a PRN order for Haldol or Risperdal.

✓ CORRECT

**Non-pharm first** — lighting, routine, reorientation, music, family presence. Antipsychotics in dementia ↑ mortality.

## TRAP 4 — THE HIDDEN ANTICHOLINERGIC

*Older adult on oxybutynin for OAB now presents with new confusion.*

✗ WRONG THINKING

Order a UTI workup and treat with antibiotics.

✓ CORRECT

Suspect **anticholinergic delirium** first. UTI is also possible — do both, but hold the oxybutynin.

## TRAP 5 — GLYBURIDE HYPOGLYCEMIA

*70-y/o diabetic on glyburide is found drowsy and diaphoretic at 0500.*

✗ WRONG THINKING

✓ CORRECT

Increase the AM insulin sliding scale.

✓ CORRECT

Check glucose *first*. Treat hypoglycemia. Glyburide is **Beers-listed** — switch to glipizide.

## TRAP 6 — ABRUPT DISCONTINUATION

***81-y/o has been on lorazepam 1 mg HS for 6 years. You discover it's Beers-listed.***

✗ WRONG THINKING

Hold the drug tonight and notify the provider in the morning.

✓ CORRECT

**Never stop benzos abruptly** — withdrawal seizures. Provider must order a gradual taper.

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PATIENT & FAMILY EDUCATION

# Teach to Reduce Drug-Related Harm

### Brown Bag Review

Bring *all* medications — prescription, OTC, supplements, herbals — to every appointment. Many fall risks hide in OTC sleep aids and cold remedies.

### Avoid OTC PM Products

Anything ending in "PM" (Tylenol PM, Advil PM, ZzzQuil) almost always contains diphenhydramine — Beers-listed.

### Never Stop a Medication Suddenly

Especially benzodiazepines, opioids, beta-blockers, gabapentin, SSRIs, and steroids — withdrawal can be dangerous.

### Fall-Prevention Routine

Rise slowly from bed/chair; sit on edge 1 min; non-skid footwear; clear pathways; night-light to bathroom.

### Hypoglycemia Awareness

On a sulfonylurea? Carry glucose tabs/juice. Symptoms: shaky, sweaty, confused. Eat meals on time.

### Hydration & Bowel Care

Anticholinergic drugs cause dry mouth and constipation — increase fluids, fiber, ambulation as tolerated.

### Report Promptly

New confusion, falls, black stools, bruising, swelling, fainting, or unusual sleepiness — call the provider *today*.

### One Pharmacy Rule

Use a single pharmacy for all prescriptions — pharmacist can flag interactions and Beers-listed drugs automatically.

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MEMORY BOOSTERS · MNEMONICS

# Lock It In

MASTER MNEMONIC

## "BEERS"

**B** **B**enzodiazepines & **B**arbiturates → falls, delirium

**E** **E**lderly anticholinergics → 1st-gen antihistamines, TCAs, oxybutynin

**E** **E**lderly antipsychotics → esp. in dementia (mortality ↑)

**R** **R**elaxants (muscle) + NSAIDs (chronic) → falls, GI bleed

**S** **S**leep aids (Z-drugs) + **S**ulfonylureas (long-acting)

### *"ACB" — Anticholinergic Burden*

Add up all anticholinergic meds. **Score ≥ 3** = significantly ↑ cognitive impairment and mortality risk in older adults.

### *"Start Low, Go Slow"*

Standard geriatric dosing principle — but also remember "*and Don't Stop*" without a taper plan.

### *"Brown Bag It"*

Patient brings every bottle they own to clinic. The hidden Beers drug is almost always OTC.

### *"PM = Problem"*

Tylenol PM, Advil PM, NyQuil, ZzzQuil → all contain diphenhydramine. Avoid in ≥ 65.

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NCJMM · SIX-STEP CLINICAL JUDGMENT

# Next Generation Clinical Judgment Walkthrough

CASE STEM — *78-Year-Old Female · Post-Op Day 1 · Hip ORIF*

### *Scenario*

Mrs. R., 78, is post-op day 1 after right hip ORIF following a fall at home. Home meds: lisinopril, glyburide 10 mg daily, ibuprofen 600 mg TID for arthritis, diphenhydramine 50 mg HS for sleep, oxybutynin 5 mg BID for OAB. New post-op orders include hydromorphone PCA, lorazepam 1 mg q6h PRN anxiety, and ondansetron PRN. At 0300 the night nurse finds Mrs. R. attempting to climb out of bed, calling for "my mother," disoriented to place and time. VS: BP 92/56, HR 104, RR 14, $SpO_2$ 94% RA, T 37.2 °C, glucose 58 mg/dL.

**1 RECOGNIZE CUES**

## What stands out?

New confusion + climbing out of bed (delirium + fall risk), BP 92/56, HR 104, **glucose 58**, polypharmacy with **five Beers-listed drugs** (glyburide, ibuprofen, diphenhydramine, oxybutynin, lorazepam), and recent opioid initiation.

**2 ANALYZE CUES**

## What is happening?

**Hypoglycemia** from glyburide (long-acting sulfonylurea + NPO/decreased intake post-op) is driving the acute change. Layered on top: **anticholinergic burden** (diphenhydramine + oxybutynin) plus opioid + benzo = delirium and respiratory compromise risk. Hypotension increases fall risk.

**3 PRIORITIZE HYPOTHESES**

## What's most urgent?

**#1 Hypoglycemia (treat now)** → glucose 58 with neuro changes. **#2 Acute medication-induced delirium** (Beers polypharmacy). **#3 Fall risk** from delirium + ortho post-op + hypotension. Rule-outs: hypoxia ($SpO_2$ 94%, monitor), infection, post-op bleeding.

**4 GENERATE SOLUTIONS**

## Actions to consider

Treat hypoglycemia (15 g rapid-acting carb or D50 IV per protocol) → recheck glucose in 15 min. Lower bed, bed alarm on, 1:1 sitter if available, reorient. **Hold** diphenhydramine, oxybutynin, ibuprofen, glyburide, lorazepam. Notify provider for medication reconciliation. CAM-ICU assessment. Order morning chemistry and CBC.

**5 TAKE ACTION**

## What the nurse does now

(1) Give 15 g oral carb if able to swallow safely, otherwise D50 1 amp IV. (2) Recheck glucose in 15 min — repeat if < 70. (3) Bed in low position, side rails ×2, alarm engaged, call light in reach. (4) Reorient — calm voice, lights up, family contacted. (5) Notify HCP: report Beers polypharmacy & request deprescribing plan. (6) Document delirium screening and event in EHR.

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EVALUATE OUTCOMES

## Did it work?

**Expected:** Glucose > 100 within 30 min, mental status improving over hours as anticholinergics clear, no fall, vital signs stabilizing, family informed. **Re-evaluate:** CAM negative by AM rounds, mobilized safely with PT, discharge med list reconciled to remove Beers-listed drugs and replace with safer alternatives (acetaminophen, glipizide, melatonin, mirabegron).