



Drug-Disease Interaction: Medications and Fall Risk in Older Adults

Falls are the leading cause of injury-related death among adults aged 65 and older in the United States.¹ According to the Centers for Disease Control and Prevention (CDC), there are approximately three million emergency department visits for older adults due to falls each year.² The use of some medications may increase the risk of falls. A 2022 analysis of drug-induced fall events found that the largest contributors were neurological drugs, including antipsychotics, antidepressants, anticonvulsants and hypnotic sedatives.³ Fall risk reduction interventions may reduce serious injuries, emergency department visits, hospitalizations, nursing home placements and functional decline. If the use of a high fall risk medication is necessary, it should be used at the minimum effective dose and duration while monitoring for falls.⁴

An important Healthcare Effectiveness Data and Information Set (HEDIS) measure assesses the use of medications with the potential to cause harmful drug-disease interactions in patients 67 years and older with a history of falls or hip fractures.⁵ Consider the following alternatives to reduce the risk of falls:

Drug Class	Medications to Avoid ^{4,5*}		Potential Alternatives ^{4,6,7}
Antiepileptics	carbamazepine divalproex ethosuximide felbamate fosphenytoin gabapentin lamotrigine	levetiracetam oxcarbazepine phenobarbital phenytoin pregabalin topiramate valproic acid	<ul style="list-style-type: none">For new-onset epilepsy: newer agents such as lamotrigine and levetiracetam are preferredFor neuropathic pain: over-the-counter (OTC) capsaicin topical or low-dose duloxetine for shortest duration possibleFor post-herpetic neuralgia: lidocaine patchFor diabetic neuropathy: lidocaine patch
Antipsychotics	aripiprazole brexpiprazole cariprazine clozapine fluphenazine haloperidol	lurasidone olanzapine paliperidone quetiapine risperidone ziprasidone	<ul style="list-style-type: none">For delirium: low-dose quetiapine⁸ may be used for shortest duration possible if nonpharmacological approaches have failed and patient may harm self or others
Benzodiazepines	alprazolam clonazepam diazepam estazolam	lorazepam oxazepam temazepam triazolam	<ul style="list-style-type: none">For anxiety: buspirone, mirtazapine⁹For insomnia: low-dose doxepin (\leq6mg), ramelteon, trazodone¹⁰, mirtazapine¹¹
Nonbenzodiazepine hypnotics	eszopiclone zaleplon	zolpidem	<ul style="list-style-type: none">For insomnia: low-dose doxepin (\leq6mg), ramelteon, trazodone¹⁰, mirtazapine¹¹
Selective serotonin reuptake inhibitors (SSRIs)	citalopram escitalopram fluoxetine	fluvoxamine paroxetine sertraline	<ul style="list-style-type: none">For depression: bupropion, trazodone, mirtazapineFor anxiety: buspirone, mirtazapine⁹
Serotonin-norepinephrine reuptake inhibitors (SNRIs)	desvenlafaxine duloxetine	levomilnacipran venlafaxine	<ul style="list-style-type: none">For depression: bupropion, trazodone, mirtazapineFor anxiety: buspirone, mirtazapine⁹For neuropathic pain: OTC capsaicin topical or low-dose duloxetine for shortest duration possible
Tricyclic antidepressants	amitriptyline clomipramine doxepin (>6 mg)	imipramine nortriptyline	<ul style="list-style-type: none">For depression: bupropion, trazodone, mirtazapineFor neuropathic pain: OTC capsaicin topical or low-dose duloxetine for shortest duration possible

*Not a comprehensive list; ⁸Off-label; ⁹For adults with insomnia secondary to comorbid dysthymic disorder

References

1. Kakara RS, Lee R, Eckstrom EN. Cause-Specific Mortality Among Adults Aged \geq 65 Years in the United States, 1999 Through 2020. Public Health Rep. 2023 Mar 11:333549231155869. DOI: 10.1177/0033549231155869. Epub ahead of print. PMID: 36905313.
2. Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. Facts About Falls. Centers for Disease Control and Prevention. <https://www.cdc.gov/falls/data-research/facts-stats/index.html>. Accessed December 1, 2025.
3. Zhou S, Jia B, Kong J, et al. Drug-induced fall risk in older patients: A pharmacovigilance study of FDA adverse event reporting system database. Front Pharmacol. 2022 Nov 29;13:1044744. doi: 10.3389/fphar.2022.1044744. PMID: 36523498; PMCID: PMC9746618.
4. By the 2023 American Geriatrics Society Beers Criteria® Updated Expert Panel. American Geriatrics Society 2023 updated AGS Beers Criteria® for potentially inappropriate medication use in older adults. J Am Geriatr Soc. 2023; 1- 30. doi:10.1111/jgs.18372.
5. National Committee for Quality Assurance. HEDIS MY 2026, Volume 2. Technical Specifications for Health Plans.
6. IBM Micromedex® DRUGDEX® (electronic version). IBM Watson Health, Greenwood Village, Colorado, USA. Available at: <https://www.micromedexsolutions.com>. Accessed December 1, 2025.
7. Clinical Resource, *Potentially Harmful Drugs: Beers List. Pharmacist's Letter/Pharmacy Technician's Letter/Prescriber Insights*. July 2023. [390726]