

Therapeutic Class	HRM	Rationale for Risk	Common Indication	Alternative Medication
<b>Antibiotics</b>	<ul style="list-style-type: none"> <li>Nitrofurantoin</li> </ul> <p>May be drug of choice due to allergies, drug interaction, or resistance.</p>	Increased risk of pulmonary toxicity, hepatotoxicity, and peripheral neuropathy. This is high risk in patients with poor renal function (CrCl less than 30ml/min OR for chronic use >90 days).	Urinary tract infection treatment and prophylaxis	<ul style="list-style-type: none"> <li>Sulfamethoxazole/trimethoprim DS</li> <li>Amoxicillin-clavulanate</li> <li>Cefdinir</li> <li>Cefpodoxime</li> </ul>
<b>Antidepressants</b>	<ul style="list-style-type: none"> <li>Amitriptyline</li> <li>Amoxapine</li> <li>Clomipramine</li> <li>Desipramine</li> <li>Doxepin</li> <li>Imipramine</li> <li>Nortriptyline</li> <li>Protriptyline</li> <li>Trimipramine</li> <li>Paroxetine</li> </ul> <p>Includes combination products.</p>	<p>Strong anticholinergic and sedative properties leading to orthostatic hypotension, confusion, and falls.</p> <p>Anticholinergics increase risk for physical, functional, and cognitive decline.</p> <p>Please note this is Protected Class Drug in Medicare.</p>	Depression	<ul style="list-style-type: none"> <li>Citalopram</li> <li>Escitalopram</li> <li>Fluoxetine</li> <li>Sertraline</li> <li>Venlafaxine</li> <li>Desvenlafaxine ER<sup>2</sup></li> </ul>
			Headache/migraine prophylaxis	<ul style="list-style-type: none"> <li>Propranolol IR</li> <li>Topiramate</li> <li>Divalproex DR</li> </ul>
			Neuropathic pain	<ul style="list-style-type: none"> <li>Duloxetine</li> <li>Gabapentin alternative</li> <li>Lidocaine patch<sup>1, 4</sup></li> <li>Lyrica<sup>4</sup></li> </ul>
			Sleep Limit treatment to <14 days	<ul style="list-style-type: none"> <li>Doxepin (oral liquid) &lt; 6mg/day</li> <li>Melatonin*</li> <li>Trazodone</li> </ul>

1=Prior authorization required 2=Step Therapy required 3=Nonformulary 4=Quantity limit \*Over-the-counter, medication not covered by plan. Member will have to pay out of pocket. Refer to formulary for tier placement of all drugs.

**Abbreviations:** ACEI: angiotensin converting enzyme inhibitor; ARBs: Angiotensin II Receptor blockers; DR: delayed release; DS: double strength; ER: extended release; IR: immediate release; mg: milligram; MME: morphine milligram equivalents; NSAID: nonsteroidal anti-inflammatory drug; PA: prior authorization; PPI: proton pump inhibitor; SR: sustained release; UTI: Urinary Tract Infection.

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<b>Antihistamines</b>	<ul style="list-style-type: none"> <li>• Chlorpheniramine*</li> <li>• Clemastine*</li> <li>• Cyproheptadine</li> <li>• Dimenhydrinate*</li> <li>• Diphenhydramine*</li> <li>• Doxylamine*</li> <li>• Hydroxyzine<sup>3</sup></li> <li>• Meclizine*</li> <li>• Promethazine</li> <li>• Scopolamine<sup>4</sup></li> <li>• Triprolidine*</li> </ul>	<p>Strong anticholinergic and sedative properties leading to orthostatic hypotension, confusion and falls.</p> <p>Anticholinergics increase risk for physical, functional and cognitive decline.</p>	Allergies	<ul style="list-style-type: none"> <li>• Fluticasone nasal spray</li> <li>• Cetirizine*</li> <li>• Fexofenadine*</li> <li>• Loratadine*</li> </ul>
			Itching/rash	<ul style="list-style-type: none"> <li>• Cetirizine*</li> <li>• Fexofenadine*</li> <li>• Hydrocortisone 1% cream*</li> <li>• Loratadine*</li> <li>• Triamcinolone 0.025% cream</li> </ul>
			Nausea/vomiting	<ul style="list-style-type: none"> <li>• Ondansetron</li> </ul>
			Sleep Limit treatment to < 14 days	<ul style="list-style-type: none"> <li>• Doxepin (oral liquid) &lt; 6mg/day</li> <li>• Melatonin*</li> <li>• Rozerem</li> <li>• Trazodone</li> </ul>
<b>Antispasmodics</b>	<ul style="list-style-type: none"> <li>• Dicyclomine</li> <li>• Hyoscyamine<sup>3</sup></li> <li>• Methscopolamine</li> </ul>	<p>Strong anticholinergic properties leading to orthostatic hypotension, confusion and falls. Anticholinergics increase risk for physical, functional and cognitive decline.</p> <p>Should be used only as-needed basis (short term).</p>	GI motility disorders/IBS-D	<ul style="list-style-type: none"> <li>• Loperamide (for IBS-D)</li> </ul>
			Peptic Ulcer	<ul style="list-style-type: none"> <li>• Cimetidine</li> <li>• Famotidine</li> <li>• Nizatidine</li> <li>• Ranitidine</li> </ul>
<b>Barbiturates</b>	<ul style="list-style-type: none"> <li>• Butalbital<sup>3</sup></li> <li>• Phenobarbital</li> </ul> <p>Includes combination products.</p>	<p>High rate of physical dependence; tolerance to sleep benefits; risk of overdose at low dosages.</p> <p>Associated with increased fall risk and confusion.</p>	Headache	<ul style="list-style-type: none"> <li>• Ibuprofen (prescription strength)</li> <li>• Naproxen (prescription strength)</li> </ul>
			Seizures	Appropriate alternatives (e.g., levetiracetam, lamotrigine) dependent on type of seizure disorder

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<b>Benzodiazepines (short, intermediate, and long-acting)</b>	<ul style="list-style-type: none"> <li>Alprazolam</li> <li>Lorazepam<sup>4</sup></li> <li>Temazepam<sup>4</sup></li> <li>Triazolam<sup>3</sup></li> <li>Chlordiazepoxide<sup>3</sup></li> <li>Clonazepam<sup>4</sup></li> <li>Diazepam<sup>4</sup></li> <li>Flurazepam<sup>3</sup></li> </ul> <p>May be appropriate for seizure disorders, GAD (generalized anxiety disorder), withdrawal, REM (rapid eye movement) sleep disorders, and periprocedural anesthesia.</p>	Older adults have increased sensitivity to benzodiazepines and decreased metabolism of long-acting agents; in general, all benzodiazepines increase risk of cognitive impairment, delirium, falls, fractures, and motor vehicles crashes in older adults.	Anxiety	<ul style="list-style-type: none"> <li>Buspirone</li> <li>Escitalopram</li> <li>Fluoxetine</li> <li>Sertraline</li> </ul>
			Sleep Limit treatment to < 14 days	<ul style="list-style-type: none"> <li>Rozerem</li> <li>Doxepin (oral liquid) &lt; 6mg/day</li> <li>Melatonin*</li> <li>Trazodone</li> </ul>

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<b>Cardiovascular Agents</b>	<ul style="list-style-type: none"> <li>Guanfacine</li> <li>Methyldopa</li> <li>Nifedipine, immediate release<sup>1</sup></li> </ul>	<p>Increased stroke, heart attack, syncope risk due to rapid decrease in blood pressure with alpha agonists, nifedipine IR, and dipyridamole.</p> <p>Avoid short acting blood pressure drugs due to risk of hypotension (low blood pressure).</p>	Hypertension	<ul style="list-style-type: none"> <li>Hydrochlorothiazide</li> <li>ACEI/ARBs</li> <li>Beta blocker</li> <li>Calcium channel blockers</li> </ul>
	<ul style="list-style-type: none"> <li>Digoxin</li> </ul> <p>Digoxin is a high risk medication when using more than 1.25mcg/day</p>	<p>Increased risk of toxicity with high-dose digoxin due to slow renal clearance.</p> <p>Digoxin levels above 2 ng/mL (2.6 nmol/L) are associated with increased toxicity.</p>	Heart failure	<p>Optimize ACEI, beta-blocker, aldosterone antagonist and/or ARB before using digoxin.</p> <p>Limit the maintenance dose to 0.125 mg daily or every other day. Before increasing maintenance dose of digoxin to ensure the patient is adherent to current prescribed dose.</p>
		<p>More effective alternatives exist.</p>	Atrial fibrillation	<ul style="list-style-type: none"> <li>Diltiazem XT</li> <li>Verapamil SR</li> <li>Metoprolol tartrate</li> <li>Metoprolol succinate</li> </ul>
	<ul style="list-style-type: none"> <li>Dipyridamole, immediate release<sup>3</sup></li> </ul>	<p>A potent negative inotrope and therefore may induce heart failure in older adults; strongly anticholinergic.</p>	Platelet aggregation	<ul style="list-style-type: none"> <li>Aspirin*</li> <li>Clopidogrel</li> </ul>
<b>Endocrine</b>	<ul style="list-style-type: none"> <li>Megestrol</li> </ul>	<p>Increases risk of thrombotic events and possibly death in older adults.</p>	Weight gain	Avoid use due to minimal effect on weight gain.

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<b>Estrogens</b>	<ul style="list-style-type: none"> <li>• Conjugated estrogen</li> <li>• Estradiol</li> <li>• Esterified estrogen</li> <li>• Estropipate</li> </ul> <p>Includes combination and transdermal products.</p>	Increased risk of cancer, cancer related death, and clots with systemic therapy. Lack of cardioprotective effect or cognitive protection. Acceptable to use intravaginal estrogen.	Osteoporosis	<ul style="list-style-type: none"> <li>• Alendronate</li> <li>• Calcium and Vitamin D*</li> <li>• Ibandronate-oral</li> <li>• Ibandronate-injection</li> <li>• Raloxifene</li> <li>• Risedronate<sup>2</sup></li> <li>• Prolia</li> </ul>
			Menopause symptoms	<p>Evaluate appropriateness of ongoing therapy. Use lowest effective dose for the shortest amount of time.</p> <ul style="list-style-type: none"> <li>• Fluoxetine</li> <li>• Gabapentin (if CrCl &gt;60 mL/min)</li> <li>• Venlafaxine ER</li> <li>• Desvenlafaxine<sup>2</sup></li> </ul>
			Vaginal atrophy	<ul style="list-style-type: none"> <li>• Estradiol Vaginal Tablet, Cream or Ring</li> </ul>
<b>Hypoglycemics</b>	<ul style="list-style-type: none"> <li>• Glimepiride</li> <li>• Glyburide<sup>3</sup></li> </ul>	Prolonged half-life in older adults; risk of severe hypoglycemia.	Diabetes	<ul style="list-style-type: none"> <li>• Glipizide</li> </ul>
	<ul style="list-style-type: none"> <li>• Premixed Insulins (70/30, 50/50)</li> </ul>			<ul style="list-style-type: none"> <li>• Rapid or short-acting insulin with basal or long-acting insulin (Novolin N with Novolog)</li> </ul>
<b>Hypnotics/ Sleepers</b>	<ul style="list-style-type: none"> <li>• Eszopiclone<sup>4</sup></li> <li>• Zaleplon<sup>4</sup></li> <li>• Zolpidem<sup>4</sup></li> </ul>	NOT "safer" than benzodiazepines. Increase risk of falls, fractures, delirium, ED visits, hospitalizations, vehicle crashes; minimal improvement in sleep latency and duration.	<p>Sleep</p> <p>Limit treatment to &lt; 14 days</p>	<ul style="list-style-type: none"> <li>• Doxepin (oral liquid) &lt; 6mg/day</li> <li>• Melatonin*</li> <li>• Rozerem</li> <li>• Trazodone</li> </ul>

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<b>Narcotics</b>	<ul style="list-style-type: none"> <li>Meperidine<sup>3</sup></li> </ul>	CNS effects leading to increased confusion, delirium, neurotoxicity, and poor efficacy when taken orally.	Pain	<ul style="list-style-type: none"> <li>Morphine (&lt;50 MME/day decreases overdose and death)</li> <li>Ibuprofen (prescription strength) + PPI (gastro-protection)</li> <li>Hydrocodone/APAP (&lt;50 MME/day decreases overdose and death)</li> </ul>
<b>NSAIDs</b>	<ul style="list-style-type: none"> <li>Indomethacin<sup>3</sup></li> <li>Ketorolac<sup>3</sup> (includes oral and injectable)</li> </ul>	Increases risk of GI bleeding, peptic ulcer disease, CNS effects and acute kidney injury.	Pain	<ul style="list-style-type: none"> <li>Meloxicam +PPI (gastro-protection)</li> <li>Naproxen (prescription strength) + PPI (gastro-protection)</li> </ul>
<b>Parkinson Agents</b>	<ul style="list-style-type: none"> <li>Benzotropine</li> <li>Trihexyphenidyl</li> </ul>	Not recommended for prevention of extrapyramidal symptoms with antipsychotics.	Parkinson disease	Avoid use. Anticholinergics generally not tolerated in older adults
			Drug-induced extrapyramidal symptoms	Reduce the dose of offending agent (e.g. antipsychotic) or switch offending agent to an alternative (e.g., quetiapine).
<b>Skeletal Muscle Relaxants</b>	<ul style="list-style-type: none"> <li>Carisoprodol<sup>3</sup></li> <li>Chlorzoxazone<sup>3</sup></li> <li>Cyclobenzaprine<sup>3</sup></li> <li>Metaxalone<sup>3</sup></li> <li>Methocarbamol<sup>3</sup></li> <li>Orphenadrine<sup>3</sup></li> </ul>	Poorly tolerated by older adults due to anticholinergic adverse effects, sedation, falls, and risk of fracture.	Pain/muscle spasms	<ul style="list-style-type: none"> <li>Baclofen</li> <li>Tizanidine tablet</li> <li>Naproxen (Rx strength) + PPI (gastro-protection)</li> <li>Duloxetine</li> <li>Diclofenac topical</li> <li>Ibuprofen (prescription strength)</li> </ul>
<b>Thyroid</b>	<ul style="list-style-type: none"> <li>Desiccated thyroid, pork</li> <li>Liothyronine (Cytomel, T3)</li> </ul>	High risk of TSH suppression, risk of palpitations/ arrhythmias.	Hypothyroidism	<ul style="list-style-type: none"> <li>Levothyroxine</li> <li>Synthroid</li> </ul>

## Guidelines:

- American geriatrics society 2019 updated AGS beers criteria for potentially in older adults. *J AM Geriatr Soc.* Jan. 2019; 11:1-21. doi: 10.1111/jgs.1567. Accessed 2/15/2019.
- Micromedex® (electronic version). Truven Health Analytics, Greenwood Village, Colorado, USA. Available at: [www.micromedexsolutions.com](http://www.micromedexsolutions.com) accessed 3/27/2019
- Geriatric Lexi-Drugs [online.lexi.com](http://online.lexi.com) accessed 3/27/2019
- List of high-risk medications and their impact on CMS star ratings can be found on the Pharmacy Quality Alliance website at [pqaalliance.org/measures/](http://pqaalliance.org/measures/)
- Mitka M. Zolpidem-Related Surge in Emergency Department Visits. *JAMA.* 2013;309(21):2203. doi:10.1001/jama.2013.6289

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