



High-Risk Medications and Alternatives

High-Risk Medications (HRM) - potentially inappropriate medications to be avoided in adults ≥ 65 years old due to increased risk of adverse events

Description	High Risk Medication	Side Effects	Alternatives
Anticholinergics, first-generation antihistamines	<ul style="list-style-type: none"> • Brompheniramine • Carbinoxamine • Chlorpheniramine • Clemastine • Cyproheptadine • Dexbrompheniramine • Dexchlorpheniramine • Diphenhydramine (oral) • Dimenhydrinate • Doxylamine • Hydroxyzine • Meclizine • Promethazine • Triprolidine 	<ul style="list-style-type: none"> • Higher anticholinergic side effects in elderly (confusion, dry mouth, constipation, urinary retention) • Clearance reduced with advanced age and tolerance develops when used as a hypnotic 	<p>Allergy: levocetirizine, cetirizine, loratidine, fluticasone nasal spray</p> <p>Antiemetic: ondansetron, granisetron, prochlorperazine</p> <p>Sleep: Rozerem (ramelteon), trazodone, mirtazapine, melatonin (OTC)</p>
Anticholinergics, anti-Parkinson agents	<ul style="list-style-type: none"> • Benzotropine (oral) • Trihexyphenidyl 	<ul style="list-style-type: none"> • Higher anticholinergic side effects in elderly (confusion, dry mouth, constipation, urinary retention) • Clearance reduced with advanced age 	carbidopa/levodopa, ropinirole, pramipexole, amantadine
Antispasmodics	<ul style="list-style-type: none"> • Atropine (exclude ophthalmic) • Belladonna alkaloids • Clidinium-chlordiazepoxide • Dicyclomine • Hyoscyamine • Propantheline • Scopolamine 	<ul style="list-style-type: none"> • Higher anticholinergic side effects in elderly (confusion, dry mouth, constipation, urinary retention) 	Consider other agents; Assess risk vs benefit
Antithrombotics	<ul style="list-style-type: none"> • Dipyridamole, oral short-acting (does not apply to the extended-release combination with aspirin) • Ticlopidine 	<ul style="list-style-type: none"> • May cause orthostatic hypotension and syncope; intravenous form acceptable for use in cardiac stress testing 	clopidogrel, aspirin
Cardiovascular, central alpha agonists	<ul style="list-style-type: none"> • Guanfacine • Methyldopa • Reserpine (>0.1mg/day) 	<ul style="list-style-type: none"> • High risk of adverse CNS effects; may cause bradycardia and orthostatic hypotension • Not recommended as routine treatment for hypertension 	ACE-inhibitors (ie: lisinopril, benazepril), ARBs (ie: losartan, valsartan), calcium-channel blockers (ie: amlodipine, diltiazem), thiazide-like diuretics (ie: chlorthalidone, HCTZ)
Cardiovascular, other	<ul style="list-style-type: none"> • Nifedipine (immediate release) 	<ul style="list-style-type: none"> • High risk of hypotension and syncope; should not be used to manage hypertension 	amlodipine, felodipine ER, nifedipine ER
	<ul style="list-style-type: none"> • Disopyramide 	<ul style="list-style-type: none"> • Risk of inducing heart failure (potent negative inotrope) • Highly anticholinergic 	Consider other antiarrhythmic agents
	<ul style="list-style-type: none"> • Digoxin (>0.125mg/day) 	<ul style="list-style-type: none"> • Avoid higher doses due to decreased renal clearance which may increase toxic effects • Potential for increased mortality and higher doses associated with no additional benefit 	Beta-blockers (carvedilol, metoprolol succinate, or bisoprolol for HFrEF)
Antidepressants	<ul style="list-style-type: none"> • Amitriptyline • Clomipramine • Amoxapine • Desipramine • Imipramine • Trimipramine • Nortriptyline • Doxepin (>6mg/day) • Paroxetine • Protriptyline 	<ul style="list-style-type: none"> • Highly anticholinergic, sedating, and causes orthostatic hypotension 	<p>Depression: SSRIs (ie: citalopram, sertraline; except paroxetine), SNRIs (ie: duloxetine, venlafaxine), bupropion</p> <p>Neuropathy: gabapentin, duloxetine, Lyrica (pregabalin)</p>

Central nervous system, barbiturates	<ul style="list-style-type: none"> Amobarbital Butabarbital Butalbital Pentobarbital Phenobarbital Secobarbital 	<ul style="list-style-type: none"> Higher risk of physical dependence, tolerance to sleep benefits, and overdose at low doses in the elderly 	<p>Sleep: Rozerem (ramelteon), trazodone, mirtazapine, melatonin (OTC)</p> <p>Seizures: gabapentin, levetiracetam, divalproex sodium, topiramate, phenytoin, carbamazepine</p>
Central nervous system, vasodilators	<ul style="list-style-type: none"> Ergoloid mesylates 	<ul style="list-style-type: none"> Lack of efficacy 	donepezil, rivastigmine, memantine
	<ul style="list-style-type: none"> Isoxsupine 	<ul style="list-style-type: none"> Lack of efficacy and potential to exacerbate syncope 	Consider other agents for vascular disease
Central nervous system, other	<ul style="list-style-type: none"> Meprobamate 	<ul style="list-style-type: none"> Higher risk of physical dependence and sedation in elderly 	buspirone, SSRIs/SNRIs
Endocrine system, estrogen with or without progesterone (oral and topical patch only)	<ul style="list-style-type: none"> Conjugated estrogen Esterified estrogen Estradiol Estropipate 	<ul style="list-style-type: none"> Carcinogenic potential (breast and endometrium) and lack of cardioprotection/cognitive protection in older women Low-dose intravaginal estrogen (creams or tablets) acceptable for dyspareunia, lower UTI, and other vaginal symptoms 	<p>Estrace or Premarin Vaginal cream, OTC lubricants (ie: KY Jelly, Astroglide)</p> <p>Osteoporosis: Bisphosphonates (ie: alendronate, risedronate), calcium with vitamin D (OTC)</p> <p>Hot flashes: SSRIs/SNRIs, gabapentin</p>
Endocrine system, other	<ul style="list-style-type: none"> Desiccated thyroid 	<ul style="list-style-type: none"> Concerns for cardiac effects 	Synthroid (levothyroxine), liothyronine, Thyrolar (liotrix)
	<ul style="list-style-type: none"> Megestrol 	<ul style="list-style-type: none"> High risk of thrombotic events and potentially death in adults with minimal effect on weight gain 	Cachexia: dronabinol, oxandrolone
Sulfonylureas, long-duration	<ul style="list-style-type: none"> Chlorpropamide Glyburide 	<ul style="list-style-type: none"> Prolonged half-life causing higher risk of severe hypoglycemia in elderly 	glipizide, glimepiride
Pain medications, NSAIDs	<ul style="list-style-type: none"> Indomethacin Ketorolac, including parenteral 	<ul style="list-style-type: none"> Higher risk of GI bleed, PUD, and AKI in elderly High risk of adverse CNS effects in adults compared to other NSAIDs (indomethacin) 	ibuprofen, naproxen, meloxicam, nabumetone
Pain medications, other	<ul style="list-style-type: none"> Meperidine 	<ul style="list-style-type: none"> High risk of neurotoxicity, including delirium Lacks analgesic efficacy 	Several formulary opioid analgesics available
Skeletal muscle relaxants	<ul style="list-style-type: none"> Cyclobenzaprine Carisoprodol Methocarbamol Orphenadrine Chlorzoxazone Metaxalone 	<ul style="list-style-type: none"> Most muscle relaxants are poorly tolerated in older adults due to anticholinergic effects (especially cyclobenzaprine), risk of sedation, and risk of fractures 	baclofen, tizanidine
Non-benzodiazepine hypnotics (>90 days)	<ul style="list-style-type: none"> Zolpidem Eszopiclone Zaleplon 	<ul style="list-style-type: none"> Adverse events similar to benzodiazepines in elderly (delirium, falls, fractures, etc) Increase in ER visits, motor vehicle crashes, and hospitalizations; minimal improvement in sleep latency and duration 	Consider short-term use (<90 days); Rozerem (ramelteon), trazodone, mirtazapine, doxepin, melatonin (OTC)
Anti-infective	<ul style="list-style-type: none"> Nitrofurantoin (>90 days' supply) 	<ul style="list-style-type: none"> Potential for pulmonary toxicity, hepatotoxicity, and peripheral neuropathy Lack of efficacy in patients with CrCl 30-60 ml/min 	Bactrim (sulfamethoxazole/ trimethoprim), cephalexin

Should you have any questions, or if you need additional information, please contact the **L.A. Care's Provider Solution Center** at **1-866-522-2736** during the hours of 8:00 AM – 5:30 PM (PST) Monday through Friday.

You can search which medications are covered under L.A. Care's formulary in the Formulary Search page at lacare.org:

- Go to www.lacare.org → Under the "For Members" drop down, select "Pharmacy Services" → select "Go to Formulary Search" on the right side of page → select which line of business (LOB) and type drug name
- Formularies for each LOB are also available in PDF: Under the "For Members" drop down, select "Pharmacy Services" → on the right side of the page under "Resources," select the applicable formulary per LOB
- For CalMedconnect (CMC) members, you can also access the formulary at <https://www.calmedconnectla.org/> → Under the "For Members" drop down, select "2019 Member Materials" → select "List of Covered Drugs" in appropriate language

Please note: Formularies are subject to change monthly

References:

- Use of High-Risk Medications in the Elderly (DAE). *HEDIS 2019 Technical Specifications for Health Plans*. 2019
- American Geriatrics Society 2019 Updated AGS Beers Criteria® for Potentially Inappropriate Medication Use in Older Adults. *J Am Geriatr Soc*. 2019
- Hanlon JT, Semla TP, Schmadre KE. Alternative Medications for Medications in the Use of High-Risk Medications in Elderly and Potentially Harmful Drug-Disease Interactions in the Elderly Quality Measures. *J Am Geriatr Soc*. 2015;63(12):e8-e18.