High Risk Medication: Drug Alternative(s) Reference Guide

In order to better assist our providers to ensure optimal outcomes for our elderly members, ATRIO Health Plans provided the **High Risk Medication Drug Alternative(s) Guide**, which included the American Geriatrics Society (AGS) Beers Criteria recommendations and potentially safer alternatives.

If medically appropriate, please consider prescribing a safer alternative for your patients over 65 years old.

What are High-Risk Medications (HRMs)?

- HRMs, identified by the AGS Beers Criteria and the Pharmacy Quality Alliance, have been associated with poor health outcomes in the elderly, including cognitive impairment, falls and mortality.
- HRMs are best avoided in older adults (i.e. age ≥ 65) in general.
- Both the Centers for Medicare and Medicaid Services (CMS) and the Healthcare Effectiveness Data and Information Set (HEDIS) have quality measures that focus on decreasing the use of HRMs in the elderly.

Summary of 2023 American Geriatrics Society Beers Criteria Update - www.americangeriatrics.org

- Guidance on avoiding a list of potentially inappropriate medications as well as 25 harmful drug-drug interactions for people aged 65 and older and a list of 24 medications to avoid or adjust based on kidney function.
- The resulting 2023 list includes over three dozen medications/classes to avoid for older adults and 40+ medications/classes to use with caution or avoid when someone lives with certain diseases or conditions. Numerous medications were removed from the 2023 Beers list due to low use or no longer being used in the U.S., but they are still considered potentially inappropriate for older adults. These were solely moved to a separate table to simplify and increase usability of these lists.

ATRIO HEALTH PLANS

High Risk Medications to Avoid in the Elderly: Beers Recommendations and Potential Drug Alternatives

Drug Class/ Therapeutic Category	Drug Names	Precaution/Risk[1]	Beers Recommendation[1]	Medicare Formulary Alternatives and OTC Alternatives[2, 3,4] OTC= available over the counter
Alpha-1 Blockers	▪ Doxazosin ▪ Prazosin ▪ Terazosin	High risk of orthostatic hypotension and associated harms; alternative agents have superior risk/benefit	Avoid for treatment of hypertension	▪ hydrochlorothiazide, chlorthalidone ▪ losartan, candesartan, telmisartan, olmesartan, irbesartan ▪ amlodipine
Analgesics	▪ Meperidine	Not effective in dosages commonly used; may have higher risk of neurotoxicity; safer alternatives available	Avoid	Mild Pain: ▪ acetaminophen (OTC) ▪ NSAID (OTC) Moderate or severe pain: ▪ hydrocodone/acetaminophen ▪ oxycodone/ acetaminophen ▪ tramadol
Anti-Anxiety Agents	▪ Meprobamate	High rate of physical dependence; very sedating	Avoid	General Anxiety Disorder: ▪ buspirone ▪ sertraline ▪ venlafaxine Panic Disorder: ▪ fluoxetine, sertraline, venlafaxine OCD: ▪ fluoxetine, sertraline
Antiarrhythmics	▪ Amiodarone ▪ Dronedarone	Greater toxicities and/or worse outcomes compared to other antiarrhythmics used in atrial fibrillation	Avoid as first-line therapy for atrial fibrillation unless patient has heart failure or substantial left ventricular hypertrophy	Alternatives: ▪ dofetilide (Tikosyn ®) ▪ flecainide ▪ mexiletine ▪ quinidine ▪ sotalol
Anticoagulants	▪ Rivaroxaban ▪ Warfarin	Higher risk of major bleeds compared to other DOACs, with similar or lower effectiveness in nonvalvular atrial fibrillation and VTE	Avoid unless alternatives are contraindicated or there are substantial barriers to their use. Warfarin may be used if already using with well-controlled INRs and no adverse effects.	Atrial Fibrillation or VTE: ▪ apixaban ▪ dabigatran

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Antidepressants	▪ Amitriptyline ▪ Amoxapine ▪ Clomipramine ▪ Desipramine ▪ Doxepin >6 mg/day ▪ Imipramine ▪ Nortriptyline ▪ Paroxetine	Highly anticholinergic, sedating, and causes orthostatic hypotension Safety profile of low-dose doxepin (≤6 mg/day) comparable with that of placebo	Avoid	Depression: ▪ citalopram, fluoxetine, sertraline, venlafaxine, bupropion Neuropathic Pain: ▪ pregabalin, gabapentin, duloxetine OCD: ▪ fluoxetine, fluvoxamine, sertraline Insomnia: ▪ trazodone, melatonin or ramelteon
Antihistamines	▪ Brompheniramine ▪ Chlorpheniramine ▪ Cyproheptadine ▪ Dimenhydrinate ▪ Diphenhydramine (Oral) ▪ Doxylamine ▪ Hydroxyzine ▪ Meclizine ▪ Promethazine ▪ Triprolidine	Highly anticholinergic, clearance reduced with age	Avoid Use of diphenhydramine in situations such as acute severe allergic reaction may be appropriate	Allergic Rhinitis: ▪ levocetirizine ▪ cetirizine ▪ fexofenadine ▪ fluticasone (Flonase) ▪ loratadine Allergic Dermatoses: oatmeal baths or calamine lotion

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Antiparkinsonian Agents	▪ Benztropine (Oral) ▪ Trihexyphenidyl	Not recommended for prevention or treatment of extrapyramidal symptoms with antipsychotics; more effective agents available for treatment of Parkinson disease	Avoid	▪ carbidopa/ levodopa (alone or in combination with entacapone/ tolcapone) ▪ Dopamine agonists ○ bromocriptine, ropinirole, pramipexole ▪ MAO-B inhibitors ○ Selegiline
Antipsychotics	▪ Aripiprazole ▪ Haloperidol ▪ Olanzapine ▪ Quetiapine ▪ Risperidone	Increased risk of cerebrovascular accident (stroke) and greater rate of cognitive decline and mortality in persons with dementia.	Avoid, except for Schizophrenia, bipolar disorder, or short-term use as antiemetic during chemotherapy	*Avoid antipsychotics in dementia or delirium unless nonpharmacological interventions have failed or are not possible, AND older adult is threatening substantial harm to self or others*
Antispasmodics	▪ Atropine (excludes ophthalmic) ▪ Clidinium-chlordiazepoxide ▪ Dicyclomine (excludes ophthalmic) ▪ Hyoscyamine ▪ Scopolamine	Highly anticholinergic; uncertain effectiveness	Avoid	GI disorders: ▪ glycopyrrolate Urinary System Disorder: ▪ tolterodine or trospium
Antithrombotics	▪ Aspirin for primary prevention of cardiovascular disease (CVD) ▪ Dipyridamole, oral short- acting	May cause orthostatic hypotension; more effective alternative available Studies suggest lack of benefit and potential for harm when initiated for primary prevention in older adults	Avoid Consider de-prescribing aspirin if already taking for primary prevention.	▪ clopidogrel ▪ ticagrelor
Anti-infective	▪ Nitrofurantoin	Potential for pulmonary toxicity, heptatotoxicity, and peripheral neuropathy, especially with long term use	Avoid for long term bacteria suppression	UTI: ▪ SMX/TMP ▪ ciprofloxacin, levofloxacin ▪ cephalexin, cefuroxime

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Barbiturates	▪ Butalbital ▪ Phenobarbital ▪ Primidone	High rate of physical dependence, tolerance to sleep benefits, greater risk of overdose at low doses	Avoid	Sleep: ▪ trazodone, melatonin or ramelteon Anxiety: ▪ Refer to anti-anxiety section
Benzodiazepines	▪ Alprazolam ▪ Chlordiazepoxide ▪ Clobazam ▪ Clonazepam ▪ Clorazepate ▪ Diazepam ▪ Estazolam ▪ Lorazepam ▪ Midazolam ▪ Oxazepam ▪ Temazepam ▪ Triazolam	Increases the risk of cognitive impairment, delirium, falls, fractures, and motor vehicle crashes in older adults. Use with opioids may result in profound sedation, respiratory depression, coma, and death. May be appropriate for seizure disorders, rapid eye movement sleep disorders, benzodiazepine withdrawal, ethanol withdrawal, severe generalized anxiety disorder, and periprocedural anesthesia	Avoid	Sleep: ▪ trazodone, melatonin or ramelteon Anxiety: ▪ Refer to anti-anxiety section
Calcium Channel Blocker	▪ Nifedipine, immediate release	Potential for hypotension; risk of precipitating myocardial ischemia	Avoid	▪ nifedipine ER ▪ felodipine ER ▪ amlodipine
Cardiac Glycosides	▪ Digoxin	Use in atrial fibrillation but not as a first-line agent. More effective alternatives exist; may be associated with increased mortality at higher dose in heart failure	Avoid as first-line Therapy for heart failure or atrial fibrillation. Avoid dosages >0.125 mg/d for atrial fibrillation or heart failure	Atrial Fibrillation: ▪ Refer to the antiarrhythmic section ▪ Re-evaluate dosage ▪ Use digoxin at dose ≤ 0.125mg Heart Failure: ▪ Re-evaluate appropriateness and dosage for this medication Use digoxin at dose ≤ 0.125mg

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Central Alpha Agonists	▪ Clonidine ▪ Guanfacine	High risk of adverse CNS effects; may cause bradycardia and orthostatic hypotension	Avoid for treatment of hypertension	Hypertension: ▪ Refer to Alpha-1 Blocker section
Dopamine Receptor Antagonists	▪ Metoclopramide	Can cause extrapyramidal effects, including tardive dyskinesia; the risk may be greater in frail older adults and with prolonged exposure.	Avoid, unless using for gastroparesis with duration not to exceed 12 weeks except in rare cases	Non-pharmacologic: ▪ Dietary changes Pharmacologic for gastroparesis: ▪ erythromycin
Genitourinary	▪ Desmopressin	High risk of hyponatremia; safer alternative treatments	Avoid for treatment of nocturia or nocturnal polyuria	▪ Avoid excessive evening consumption of liquid ▪ Avoid diuretic beverages and medications

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Hormones	▪ Estrogens with or without progestins (oral and topical patch)	Evidence of carcinogenic potential (breast and endometrium); lack of cardioprotective effect and cognitive protection in older women. Evidence indicates that vaginal estrogens for the treatment of vaginal dryness are safe and effective	Avoid oral and topical patch	▪ Conjugated estrogen vaginal cream (Premarin®)
	▪ Megestrol	Minimal effects on weight; increases risk of thrombotic events and possibly death in older adults	Avoid	▪ Treatment of cachexia: ○ dronabinol
	▪ Androgens ▪ Methyltestosterone ▪ Testosterone	Potential for cardiac problems; potential risks in men with prostate cancer	Avoid, unless confirmed hypogonadism with clinical symptoms *(Weak recommendation)*	
	▪ Growth hormone	Impact on body composition is small and associated with edema, arthralgia, carpal tunnel syndrome, gynecomastia, and impaired fasting glucose.	Avoid, except for patients rigorously diagnosed by evidence-based criteria with growth hormone deficiency due to an established etiology.	
	▪ Insulin: Short- or rapid-acting formulations (without concurrent use of basal/long-acting insulin)	Higher risk of hypoglycemia without improvement in hyperglycemia management regardless of care setting	Avoid using short- or rapid-acting insulin without concurrent long-acting insulin	▪ insulin glargine ▪ metformin ▪ pioglitazone ▪ Farxiga, Jardiance ▪ Ozempic, Rybelsus, Trulicity, Victoza ▪ Tradjenta

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Hypnotics	▪ Eszopiclone ▪ Zolpidem ▪ Zaleplon	Similar adverse events to benzodiazepines in older adults (e.g., delirium, falls, fractures); minimal improvement in sleep latency and duration	Avoid	▪ trazodone, melatonin or ramelteon
Laxatives	▪ Mineral oil	Potential for aspiration and adverse effects; safer alternatives available	Avoid	Constipation: ▪ polyethylene glycol ▪ lactulose ▪ fiber, docusate sodium, senna, bisacodyl (OTC)
Nonsteroidal Anti-inflammatory Agents	▪ Aspirin >325 mg/day ▪ Diclofenac ▪ Diflunisal ▪ Etodolac ▪ Flurbiprofen ▪ Ibuprofen ▪ Indomethacin ▪ Ketorolac ▪ Meloxicam ▪ Nabumetone ▪ Naproxen ▪ Oxaprozin ▪ Piroxicam ▪ Sulindac	Increased risk of gastrointestinal bleeding, peptic ulcer disease, hypertension, and acute kidney injury in older adults Indomethacin more likely to cause adverse CNS effects and the most adverse effects compared to other NSAIDs	Avoid use of NSAIDs unless alternatives are not effective and patient can take a gastroprotective agent during use. Avoid indomethacin and ketorolac if needing to use an NSAID.	Pain management: ▪ acetaminophen (OTC) ▪ celecoxib ▪ lidocaine patches
Proton Pump Inhibitors	▪ Dexlansoprazole ▪ Esomeprazole ▪ Lansoprazole ▪ Omeprazole ▪ Pantoprazole ▪ Rabeprazole	Risk of *C. difficile* infection, pneumonia, GI malignancies, bone loss, and fractures.	Avoid scheduled use >8 weeks unless high-risk patients, erosive esophagitis, Barrett's esophagitis, pathologic hypersecretory condition, or demonstrated need for maintenance treatment	Non-pharmacologic: ▪ Dietary changes to avoid food triggers Pharmacologic: ▪ famotidine, cimetidine (unless high risk of delirium) ▪ calcium carbonate and other antacids (OTC) ▪ sucralfate

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Psychotherapeutic and Neurological Agents	▪ Ergoloid Mesylates	Lack of efficacy	Avoid	Alzheimer's Disease: ▪ galantamine ▪ memantine tablet or solution ▪ donepezil ▪ rivastigmine
Skeletal Muscle Relaxants	▪ Carisoprodol ▪ Chlorzoxazone ▪ Cyclobenzaprine ▪ Metaxalone ▪ Methocarbamol ▪ Orphenadrine	Poorly tolerated by older adults due to anticholinergic adverse effects; questionable effectiveness at dosages tolerated by older adults	Avoid	Spasticity: ▪ baclofen ▪ tizanidine
Sulfonylureas, short- and long-duration	▪ Gliclazide ▪ Glimepiride ▪ Glipizide ▪ Glyburide	Prolonged half –life in older adults; higher risk of cardiovascular events, all-cause mortality, and hypoglycemia than alternative agents. Sulfonylureas may increase the risk of cardiovascular death and ischemic stroke.	Avoid If needing to use a sulfonylurea, choose short-acting agents over long-acting agents, due to a higher risk of prolonged hypoglycemia in long-acting agents	▪ metformin ▪ pioglitazone ▪ Farxiga, Jardiance ▪ Ozempic, Rybelsus, Trulicity, Victoza ▪ Tradjenta
Thyroid Hormones	▪ Desiccated Thyroid	Concerns about cardiac effects; safer alternative available	Avoid	▪ levothyroxine (Levoxyl ®, Synthroid ®)

References:

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