KAISER PERMANENTE® Safer Alternatives to Potentially High Risk Medications in the Elderly

Endorsed by Pharmacy, Geriatrics, Family Practice, OB-GYN, Allergy, Cardiology, Neurology, Psychiatry, GI, and Diabetes Program

Safe Prescribing Guidance for older (65+ yo) adults:

- Avoid starting high risk medications when possible.
- For current users, regularly discuss risks and assess readiness for discontinuation. Develop taper plans and switch to safer alternatives.
- Especially avoid concomitant use (2 or more) of **anticholinergic** drug classes (*highlighted red in table)*
- Especially avoid use of multiple (3 or more) **CNS-affecting** drug classes *(highlighted blue in table)*

Therapeutic Class	High Risk Medication	Common Indications	Alternative Medication*	Suggested Starting Sig
Antibiotics *Increased risk of pulmonary toxicity, peripheral neuropathy, & hepatotoxicity with long term use.*	**Nitrofurantoin** (avoid in CrCl<30 mL/min, avoid long term use i.e., >90 total days use in last year) *May be drug of choice due to allergies, drug interactions, or resistance.*	Infection	Amoxicillin/clavulanate Ciprofloxacin Trimethoprim/sulfamethoxazole DS Trimethoprim	250-500 mg TID x 5-7 days *(based on sensitivities)* 250 mg BID x 3 days *(Dose for renal function)* 1 DS tablet BID x 3 days *(Dose for renal function)* 100 mg BID x 3 days
Antidepressants *Strong anticholinergic and sedative properties leading to orthostatic hypotension, confusion, and falls. Anticholinergics increase risk for physical, functional, & cognitive decline.* *Includes combination products.*	**Amitriptyline** **Clomipramine** **Desipramine** **Doxepin** (>6mg/day) **Imipramine** **Nortriptyline** **Paroxetine**	Depression	Escitalopram Fluoxetine Sertraline Venlafaxine ER	10 mg daily 10 mg daily 12.5 - 25 mg daily 37.5 - 75 mg daily
		Headache/migraine prophylaxis	Propranolol IR Topiramate Divalproex DR	40 mg BID 25 mg daily 125 mg BID
		Pain	Non-pharmacologic treatment Acetaminophen Duloxetine Gabapentin Lidocaine topical (OTC) Capsaicin topical (OTC)	Acupuncture, exercise, physical therapy 325-500 mg TID *max 3000 mg total daily dose* 30 mg daily 100-300 mg QHS *(Dose for renal function for higher doses)* Apply thin layer; follow package instructions. Apply thin layer; follow package instructions.
		Sleep *Limit pharmacologic treatment to 6 weeks or less*	Non-pharmacologic treatment Melatonin (OTC) Mirtazapine Trazodone Doxepin 10 mg/mL oral solution	Sleep hygiene; cognitive behavior therapy 3 mg one hr before bedtime 7.5 mg one hr before bedtime 25-50 mg one hr before bedtime 3 mg–6 mg 30-60 min before bedtime
Antiemetics *Strong anticholinergic and sedation properties.*	**Promethazine**	Nausea/Vomiting	Prochlorperazine Ondansetron	5 - 10 mg TID prn 4 - 8 mg q 12 prn
		Cough/Cold	Guaifenesin Cough/throat lozenges (OTC)	1 - 2 tsp Q4-6 hrs prn Follow package instructions.
Antihistamines (first-generation) *Strong anticholinergic and sedation properties. Clearance reduced with age. Anticholinergics increase risk for physical, functional, & cognitive decline.*	**Chlorpheniramine** **Clemastine** **Cyproheptadine** **Dimenhydrinate** **Diphenhydramine** **Doxylamine** **Meclizine** **Promethazine** **Scopolamine** **Hydroxyzine -** *May be appropriate as an alternative to a benzodiazepine for anxiety*	Allergy symptoms	Fluticasone nasal spray (OTC) Cetirizine Loratadine Fexofenadine	2 sprays per nostril daily 5 mg daily 10 mg daily 60 mg daily *(Dose for renal function)*
		Dizziness	Identify and address underlying cause(s) of dizziness. Consider medication side effects, vertigo, cerebrovascular disease, neck disorders, visual impairment, physical deconditioning, disequilibrium due to peripheral neuropathy or parkinsonism, etc.	

*__Select preferred Formulary alternatives listed__; not a comprehensive list. __OTC alternatives__ (e.g., melatonin, peppermint oil) are also listed as potential alternatives; however, please note that there is no FDA oversight as to the purity, efficacy, and safety of most supplements, vitamins and herbal preparations. __Non-pharmacologic treatment__ should always be considered first or in conjunction with treatment *when appropriate*. [Footnote also applies to subsequent pages of table]

Therapeutic Class	High Risk Medication	Common Indications	Alternative Medication*	Suggested Starting Sig
	and for opioid withdrawal symptoms	Sleep *Limit pharmacologic treatment to 14 days or less.*	Non-pharmacologic treatment Melatonin (OTC) Mirtazapine Trazodone Doxepin 10 mg/mL oral solution	Sleep hygiene; cognitive behavior therapy 3 mg one hr before bedtime 7.5 mg one hr before bedtime 25-50 mg one hr before bedtime 3 mg– max 6 mg 30-60 min before bedtime
Antispasmodics *Strong anticholinergic properties. Should be used on as-needed basis (short-term).*	**Dicyclomine** **Hyoscyamine**	GI motility disorders/ IBS-D	Non-pharmacologic treatment Peppermint oil (OTC) Loperamide	Dietary adjustments, physical activity Variable; OTC available as liquid drops or capsules (e.g., Pepogest: 1 softgel TID) 2mg 45 minutes before a meal regularly
Antipsychotics (typical & atypical) *Increased risk of stroke and greater risk of cognitive decline and mortality (e.g., sudden cardiac death, life-threatening infections) in persons with dementia.*	**Typical, all (e.g., haloperidol, fluphenazine, chlorpromazine, mesoridazine)** **Atypical, all (e.g., risperidone, olanzapine, quetiapine)**	Behavioral Problems in Dementia *Not FDA Approved Indication*	Avoid antipsychotics for behavioral problems of dementia or delirium unless non-pharmacologic options (e.g., behavioral interventions) have failed and/or the older adult is threatening substantial harm to self or others. Possible pharmacologic alternatives with some evidence include SSRIs (e.g., citalopram, sertraline) and anticonvulsants (e.g., carbamazepine). If used, periodic deprescribing attempts recommended to assess ongoing need and/or the lowest effective dose.	
Barbiturates *High rate of physical dependence; tolerance to sleep benefits; risk of overdose at low dosages. Associated with increased fall risk and confusion. Includes combination products.*	**Butalbital** **Phenobarbital** **Secobarbital**	Headache	Acetaminophen/aspirin/caffeine Ibuprofen Naproxen	500-1000mg (APAP) or 500 mg (aspirin) once, may repeat; *max APAP 3000 mg daily* 400 mg once, may repeat if needed; *max 1200 mg daily* 500mg once, may repeat if needed; *max 1250 mg daily for headache*
		Seizures	Appropriate alternatives (e.g., levetiracetam, lamotrigine) dependent on type of seizure disorder.	
Benzodiazepines (short, intermediate, and long-acting) *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 vehicle crashes in older adults.*	**Alprazolam** **Chlordiazepoxide** **Clonazepam** **Diazepam** **Flurazepam** **Lorazepam** **Temazepam** **Triazolam** *May be appropriate for seizure disorders, severe GAD, alcohol withdrawal, REM sleep disorders, & periprocedural anesthesia.*	Anxiety	Buspirone Escitalopram Fluoxetine Sertraline	5 - 10 mg BID 10 mg daily 10 mg daily 12.5 - 25 mg daily
		Sleep *Limit pharmacologic treatment to 6 weeks or less*	Non-pharmacologic treatment Melatonin (OTC) Mirtazapine Trazodone Doxepin 10 mg/mL oral solution	Sleep hygiene; cognitive behavior therapy 3 mg one hr before bedtime 7.5 mg one hr before bedtime 25-50 mg one hr before bedtime 3 mg–6 mg 30-60 min before bedtime
Cardiovascular Agents *Increased stroke, heart attack, syncope risk due to rapid decrease in blood pressure with alpha agonists, nifedipine IR, and dipyridamole* *Increased risk of toxicity with high-dose digoxin due to slow renal*	**Guanabenz** **Methyldopa** **Guanfacine** **Reserpine** (>0.1 mg/day) **Nifedipine** (short acting)	Hypertension	Use preferred agents listed in KP National Blood Pressure Guideline. Avoid use of short-acting BP drugs due to risk of hypotension.	
	Digoxin (>0.125 mg/day) *If on digoxin >0.125 mg/day, get updated digoxin level, potassium, and creatinine labs, then adjust as needed. Individualize*	Heart Failure	Optimize guideline directed medical therapy (GDMT) - ACEI/ARB/ARNI, beta-blocker, aldosterone antagonist, and/SGLT2 inhibitor before using digoxin. Goal digoxin level ≤1.0 ng/mL (ideally 0.5-0.8 ng/mL) in heart failure with reduced ejection fraction (HFrEF).	

Therapeutic Class	High Risk Medication	Common Indications	Alternative Medication*	Suggested Starting Sig
clearance	*digoxin dose per clinical circumstances and digoxin level.*	Atrial Fibrillation	Digoxin Diltiazem XT Verapamil SR Metoprolol tartrate Metoprolol succinate (2nd due to cost)	≤0.125 mg daily 120 mg daily 120 mg daily 25 mg BID 50 mg daily
	Dipyridamole IR (short acting)	Platelet Aggregation	Aspirin Clopidogrel	81 mg daily 75 mg daily
Increased risk of bleeding with aspirin and lack of net benefit	**Aspirin -** *Avoid initiation for primary prevention unless high risk for ASCVD, consider deprescribing in age >75 years*	ASCVD Prevention	**Primary Prevention:** statin, blood pressure control **Secondary Prevention:** aspirin, clopidogrel indicated	
Endocrine	**Megestrol -** *Increases risk of thrombotic events and possibly death in older adults.*	Weight gain	Avoid use due to minimal effect on weight gain.	
	Canagliflozin, Dapagliflozin, Empagliflozin, Ertugliflozin - *Higher risk of urogenital infections, euglycemic diabetic ketoacidosis, and volume depletion*	Diabetes	Use preferred agents listed in KPWA Type 2 Diabetes Guidelines	
Estrogens (systemic) *Increased risk of cancer, cancer related death, and clots with systemic therapy. Lack of cardioprotective effect or cognitive protection. Includes combination and transdermal products. Acceptable to use intravaginal estrogen.*	**Conjugated estrogen** **Estradiol** **Esterified estrogen** **Estropipate**	Osteoporosis	Alendronate Calcium and Vitamin D	70 mg per week 1200 mg and 800 IU daily
		Hot Flash	Non-pharmacologic treatment Venlafaxine Escitalopram Gabapentin	Keep cool environment, limit triggers, relaxation or behavioral therapy 37.5-75 mg daily 10 mg daily 600-900 mg QD *(Dose for renal function)*
		Vaginal Atrophy	Estradiol Vaginal Tablet Estradiol Vaginal Cream Estradiol Vaginal Ring	Insert 1 tablet (10 mcg) daily for 2 weeks, then 1 tablet twice weekly Insert 2 g/day for 1-2 weeks, then 1 g 1-3 times per week Insert 2mg Estring, remains in place for 90 days
Hypoglycemics *Risk of severe hypoglycemia* *May increase the risk of cardiovascular death and ischemic stroke*	**Glimepiride, Glyburide (long acting)** **Glipizide (shorter acting)**	Diabetes	Glipizide *(lower risk of hypoglycemia among sulfonylureas if limited in options)*	2.5-5 mg daily or BID based on patient's risk for hypoglycemia
	Fast/Short acting insulins without a basal insulin- sliding scale		Rapid or short-acting insulin without basal or long-acting insulin (using sliding scale short acting without basal (glargine or NPH)insulin)	Titrate appropriately.
Hypnotics/Sleepers *NOT "safer" than benzodiazepines. Increase risk of falls, fractures, delirium, ED visits, hospitalizations, vehicle crashes; minimal improvement in sleep latency and duration.*	**Zolpidem** **Eszopiclone** **Zaleplon**	Sleep *Limit pharmacologic treatment to 6 weeks or less*	Non-pharmacologic treatment Melatonin (OTC) Mirtazapine Trazodone Doxepin 10 mg/mL oral solution	Sleep hygiene; cognitive behavior therapy 3 mg one hr before bedtime 7.5 mg one hr before bedtime 25-50 mg one hr before bedtime 3 mg–6 mg 30-60 min before bedtime
NSAIDs *Increased risk of GI bleed, CNS effects, and acute kidney injury.*	**Ketorolac** **Indomethacin**	Pain	Acetaminophen Meloxicam + PPI (gastro-protection) Naproxen + PPI (gastro-protection)	325-500 mg TID *max 3000 mg daily* 7.5 mg daily *max 15 mg daily* 250 mg BID *max 1500 mg daily*

KAISER PERMANENTE® Safer Alternatives to Potentially High Risk Medications in the Elderly

Endorsed by Pharmacy, Geriatrics, Family Practice, OB-GYN, Allergy, Cardiology, Neurology, Psychiatry, GI, and Diabetes Program

Therapeutic Class	High Risk Medication	Common Indications	Alternative Medication*	Suggested Starting Sig
Opioids *CNS effects leading to increased confusion and toxicity risk.*	**Meperidine**	Pain	Ibuprofen + PPI (gastro-protection) Hydrocodone/APAP Oxycodone/APAP	200 - 400 mg TID 5/325 mg ½ - 1 tab TID 5/325 mg ½ - 1 tab TID
Parkinson Agents	**Benzotropine** **Trihexyphenidyl**	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).	
Skeletal Muscle Relaxants *High risk of sedation and falls. Cyclobenzaprine & orphenadrine have strong anticholinergic effects* *Baclofen & tizanidine are not safer alternatives and can also cause substantial adverse effects. Baclofen has added risk for encephalopathy. Acceptable to use for spasticity management.*	**Cyclobenzaprine** **Methocarbamol** **Carisoprodol** **Chlorzoxazone** **Metaxalone** **Meprobamate** **Orphenadrine** **Baclofen (avoid in eGFR<60)** **Tizanidine**	Pain/Muscle spasms	Non-pharmacologic treatment Acetaminophen Naproxen + PPI (gastro-protection)	Stretching, heat/cold packs, TENS unit 325-500 mg TID *max 3000 mg daily* 250 mg BID *max 1500 mg daily*
Thyroid *High risk of TSH suppression, risk of palpitations / arrhythmias*	**Desiccated thyroid, pork** **Liothyronine (Cytomel, T3)**	Hypothyroidism	Levothyroxine	Adjust to euthyroid