

Medications to avoid in the elderly

| Description | Medications to avoid ¹ | Adverse side effects/concerns | Formulary alternatives ^{2,3} |
|----------------------------|---|--|---|
| Alpha agonists, central | <ul style="list-style-type: none"> • guanabenz • guanfacine • methyldopa • reserpine <p>(doses greater than 0.1mg/day)</p> | High risk of central nervous system (CNS) effects; may cause bradycardia and orthostatic hypotension; not recommended for routine treatment of hypertension. | lisinopril, enalapril, losartan, felodipine, nifedipine-long acting (nifedipine ER) |
| Analgesics | <ul style="list-style-type: none"> • indomethacin • ketorolac | Potential for gastrointestinal bleeding, renal failure, high blood pressure and heart failure | acetaminophen, trisalicylate (Trilisate), topicals (capsaicin) |
| Androgen | <ul style="list-style-type: none"> • methyltestosterone | Prostatic hypertrophy and cardiac concerns | danazol |
| Anti-anxiety | <ul style="list-style-type: none"> • aspirin-meprobamate • meprobamate | Addictive and sedating anxiolytic | <p>Anxiety: buspirone, citalopram, duloxetine, escitalopram, fluvoxamine, sertraline, venlafaxine</p> <p>Insomnia: See the nonbenzodiazepine hypnotic section for insomnia alternatives</p> |
| Antidepressants, tricyclic | <ul style="list-style-type: none"> • amitriptyline • clomipramine • doxepin • imipramine • trimipramine <p>(doses greater than 6mg/day)</p> | Highly anticholinergic effects; may cause orthostatic hypotension | <p>Depression: Selective serotonin reuptake inhibitors (SSRIs) – citalopram, escitalopram, fluvoxamine, sertraline; Serotonin and norepinephrine reuptake inhibitors (SNRIs) – duloxetine, venlafaxine</p> <p>Insomnia: See the nonbenzodiazepine hypnotic section for insomnia alternatives</p> <p>Neuropathic pain: gabapentin</p> |
| Anti-emetics | <ul style="list-style-type: none"> • trimethobenzamide | Extrapyramidal adverse effects | ondansetron, dolasetron (Anzemet) |



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| Antihistamines (includes single entity or as part of a combination product) | <ul style="list-style-type: none"> • brompheniramine • carbinoxamine • chlorpheniramine • clemastine • cyproheptadine • dexbrompheniramine • dexchlorpheniramine • diphenhydramine (oral) • doxylamine • hydroxyzine hydrochloride • hydroxyzine pamoate • promethazine • triprolidine | <p>Highly anti-cholinergic effects, sedation, weakness, blood pressure changes, dry mouth, urinary retention; clearance reduced in advanced age.</p> <p>Tolerance develops when used as hypnotic</p> | <p>Pruritus/urticaria: fexofenadine, fluticasone</p> <p>Insomnia: See the nonbenzodiazepine hypnotic section for insomnia alternatives</p> <p>Nausea/vomiting: ondansetron</p> <p>Allergic rhinitis: fexofenadine, azelastine, fluticasone</p> <p>Anxiety: SSRIs (citalopram, escitalopram, fluvoxamine, sertraline); SNRIs (duloxetine, venlafaxine); buspirone</p> |
| Anti-infectives (when cumulative days' supply greater than 90 days) | <ul style="list-style-type: none"> • nitrofurantoin • nitrofurantoin macrocrystals | <p>Potential for pulmonary toxicity; nitrofurantoin causes renal impairment. Avoid in persons with a CrCl < 60mL/min due to inadequate drug concentration in the urine.</p> | <p>Dependent on the infection: sulfamethoxazole/trimethoprim, ciprofloxacin, cephalixin</p> |
| Anti-parkinson agents | <ul style="list-style-type: none"> • benztropine (oral) • trihexyphenidyl | <p>Not recommended for prevention of extrapyramidal symptoms with antipsychotics.</p> | <p>ropinirole (Requip), amantadine, pramipexole (Mirapex)</p> |
| Antipsychotics | <ul style="list-style-type: none"> • thioridazine | <p>Highly anti-cholinergic; CNS and extrapyramidal effects; greater risk of QT interval prolongation; associated with tremors, slurred speech, bradykinesia, dystonia, muscle rigidity and akathisia</p> | <p>olanzapine (Zyprexa), quetiapine (Seroquel), risperidone (Risperdal), pimozide (Orap), trifluoperazine</p> <p>Note: All antipsychotics have been associated with increased mortality when used to treat psychosis related to dementia</p> |
| Anti-thrombotics | <ul style="list-style-type: none"> • dipyridamole, oral short-acting only • ticlopidine | <p>Dipyridamole may cause orthostatic hypotension; more effective alternatives are available.</p> | <p>aspirin/dipyridamole extended-release capsules, low-dose aspirin</p> |



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| Barbiturates | <ul style="list-style-type: none"> • amobarbital • butabarbital • butalbital • mephobarbital • pentobarbital • phenobarbital • secobarbital | High rate of physical dependence; patients develop tolerance, which reduces sleep benefits; risk of overdose at low dosage due to tolerance and patient choice to over-medicate to achieve therapeutic effect | <p>Anxiety: SSRIs (citalopram, escitalopram, fluvoxamine, sertraline); SNRIs (duloxetine, venlafaxine); buspirone</p> <p>Insomnia: See nonbenzodiazepine hypnotic section for insomnia alternatives</p> |
| Belladonna alkaloids (includes single entity or as part of a combination product) | <ul style="list-style-type: none"> • atropine/hyoscyamine/phenobarbital/scopolamine • belladonna/ / phenobarbital • butabarbital/hyoscyamine/ phenazopyridine | Anti-cholinergic effects | <p>Constipation: psyllium, PEG, stool softener, lubiprostone (Amitiza)</p> <p>Diarrhea: loperamide, aluminum hydroxide</p> |
| Calcium channel blockers | <ul style="list-style-type: none"> • nifedipine – short-acting only | Potential for hypotension; risk of causing myocardial ischemia | Use long-acting formulation to avoid adverse effects: felodipine, nifedipine-long-acting (nifedipine ER) |
| Cardiovascular | <ul style="list-style-type: none"> • digoxin (doses greater than 0.125mg/day) • disopyramide | <p>Digoxin: in heart failure, higher doses have increased risk of toxicity; decreased renal clearance</p> <p>Disopyramide: potent negative inotrope that may induce heart failure in older adults; anti-cholinergic effects</p> | Heart failure: digoxin 0.125mg, ACEI (lisinopril, quinapril, enalapril) or ARB (losartan) and/or a beta blocker (metoprolol XL, bisoprolol, carvedilol) instead of digoxin |
| Endocrine | <ul style="list-style-type: none"> • megestrol | Increases risk of thrombotic event and possibly death in older adults | Consider nutritional support and treatment of potential cause (e.g., depression, certain medications); consider dronabinol for anorexia associated with weight loss in patients with AIDS or for nausea and vomiting in chemotherapy patients who failed to respond adequately to conventional treatments |



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| Narcotics | <ul style="list-style-type: none"> • acetaminophen-pentazocine • belladonna-opium • meperidine • meperidine-promethazine • naloxone-pentazocine • pentazocine | <p>Meperidine may not be effective at commonly prescribed doses; side effects include confusion, falls, fractures, dependency and withdrawal.</p> <p>Pentazocine produces CNS-adverse effects, including confusion and hallucinations and is a mixed agonist and antagonist; safer alternatives are available.</p> | hydrocodone, morphine, oxycodone, fentanyl transdermal patch, acetaminophen (not in combination product) |
| Nonbarbiturate or nonbenzodiazepine hypnotic (when cumulative days' supply is greater than 90 days) | <ul style="list-style-type: none"> • chloral hydrate • Lunesta (eszopiclone) • Sonata (zaleplon) • Ambien (zolpidem) | <p>Chloral hydrate: Tolerance develops within 10 days; risks outweigh benefits: delirium, overdose (narrow therapeutic window)</p> <p>All others: Benzodiazepine-receptor agonists have adverse events similar to those of benzodiazepines in older adults (e.g., delirium, falls, fractures); they produce minimal improvement in sleep latency and duration.¹</p> | <ul style="list-style-type: none"> • Consider only short-term or intermittent use (less than 90 days per year). • Discuss sleep hygiene and avoidance of caffeine, alcohol, nicotine and medications that cause insomnia. • Evaluate for depression, a common cause of insomnia in the elderly. Secondary insomnia can be treated with trazodone 50 mg (may cause orthostatic hypotension) or doxepin (less than 6 mg per day).⁴ • Over-the-counter option: melatonin, if appropriate; regarded as safe in recommended doses (up to 15 mg daily) for up to two years.⁵ |



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| Oral estrogens and estradiol transdermal patch | <ul style="list-style-type: none"> • conjugated estrogen • conjugated estrogen-medroxyprogesterone • drospirenone-estradiol • esterified estrogen | <ul style="list-style-type: none"> • esterified estrogen-methyl-testosterone • estropipate • estradiol • estradiol-norethindrone • estradiol-levonorgestrel | <p>Cardio-protective properties are absent; high carcinogenic effects (breast cancer and endometrial cancer)</p> <p>Hot flashes: nondrug comfort therapy</p> <p>SSRIs: citalopram, escitalopram, fluvoxamine, sertraline; SNRIs: venlafaxine;</p> <p>Vaginal dryness: Premarin vaginal cream</p> <p>Bone density: calcium, vitamin D, alendronate, raloxifene</p> |
| Oral hypoglycemics | <ul style="list-style-type: none"> • chlorpropamide • glyburide | <p>Prolonged half-life causing prolonged hypoglycemia; also causes syndrome of inappropriate anti-diuretic hormone secretion (SIADH)</p> | <p>glimepiride, glipizide</p> |
| Skeletal muscle relaxants | <ul style="list-style-type: none"> • ASA/caffeine/orphenadrine • ASA/carisoprodol/codeine • aspirin-carisoprodol • carisoprodol • chlorzoxazone | <ul style="list-style-type: none"> • cyclobenzaprine • metaxalone • methocarbamol • orphenadrine <p>Anti-cholinergic effects, sedation, weakness and increased risk of fractures</p> <p>Poorly tolerated; effectiveness at doses tolerated by older adults is questionable</p> | <p>baclofen, tizanidine</p> <p>Nonpharmacologic treatment for muscle spasms: heat, massage, stretching/exercise</p> |
| Thyroid | <ul style="list-style-type: none"> • Thyroid desiccated | <p>Cardiac concerns</p> | <p>levothyroxine</p> |
| Vasodilators | <ul style="list-style-type: none"> • dipyridamole – short-acting only • ergot mesyloid • isoxsuprine | <p>Orthostatic hypotension</p> | <p>Stroke prevention: aspirin/dipyridamole extended-release capsules, low-dose aspirin</p> <p>Alzheimer's disease/dementia: galantamine, rivastigmine, donepezil</p> |

This document was last updated in January 2014.



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References:

1. The American Geriatric Society 2012 Beers Criteria Update Expert Panel. American Geriatrics Society Updated Beers Criteria for Potentially Inappropriate Medication Use in Older Adults. http://www.americangeriatrics.org/files/documents/beers/2012BeersCriteria_JAGS.pdf. Accessed Dec. 19, 2013.
2. Source: Potentially Harmful Drugs in the Elderly: Beers List and More. Pharmacist's Letter/Prescriber's Letter 23.9. (2007):230907.
3. STARTing and STOPping Medications in the Elderly. Pharmacist's Letter/Prescriber's Letter. (2011):270906.
4. Mendelson WB. A review of the evidence for efficacy and safety of trazodone in insomnia. The Journal of Clinical Psychiatry, 2005; 66:469-76.

Buscemi N, Vandermeer B, Friesen C, et al. The efficacy and safety of drug treatments for chronic insomnia in adults: a meta-analysis of RCTs. The Journal of General Internal Medicine, 2007; 22:1335-5.

Zavesicka L, Brunovsky M, Horacek J, et al. Trazodone improves the results of cognitive behaviour therapy of primary insomnia in non-depressed patients. Neuroendocrinology Letters, 2008; 29:895-901.
5. Jellin JM, Gregory PJ, et al. Clinical management series. Natural medicines in the clinical management of insomnia. Pharmacist's Letter/Prescriber's Letter Natural Medicines Comprehensive Database. www.naturaldatabase.com (Accessed Dec. 19, 2013)

Zhdanova IV, Wurtman RJ, Regan MM, et al. Melatonin treatment for age-related insomnia. The Journal of Clinical Endocrinology & Metabolism, 2001; 86:4727-30.

Garfinkel D, et al. Improvement of sleep quality in elderly people by controlled-release melatonin. Lancet, 1995; 346:541-44.

