## Medications to avoid in the elderly

<table>
<thead>
<tr>
<th>Description</th>
<th>Medications to avoid</th>
<th>Adverse side effects/concerns</th>
<th>Formulary alternatives</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Alpha agonists, central</strong></td>
<td>• guanfacine</td>
<td>Headache</td>
<td>nisoldipine, nifedipine</td>
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<tr>
<td></td>
<td>• methyprylon</td>
<td></td>
<td>loratadine</td>
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<tr>
<td></td>
<td>• reserpine (doses greater than 0.1 mg/day)</td>
<td></td>
<td>trazodone, mirtazapine</td>
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<td></td>
<td></td>
<td></td>
<td>chlorpromazine, olanzapine, quetiapine, risperidone, sulpiride, ziprasidone</td>
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<tr>
<td><strong>Analgesics</strong></td>
<td>• indomethacin</td>
<td>Potential for gastrointestinal bleeding, renal failure, high blood pressure and heart failure</td>
<td>indomethacin</td>
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<tr>
<td></td>
<td>• ketorolac</td>
<td></td>
<td>naproxen, ibuprofen</td>
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<tr>
<td><strong>Anti-anxiety</strong></td>
<td>• aspirin-meprobamate</td>
<td></td>
<td>alprazolam</td>
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<td></td>
<td>• meprobamate</td>
<td></td>
<td>lorazepam</td>
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<tr>
<td><strong>Antidepressants, tricyclic</strong></td>
<td>• amitriptyline</td>
<td></td>
<td>desipramine, nortriptyline, trazodone</td>
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<tr>
<td></td>
<td>• clomipramine</td>
<td></td>
<td>amitriptyline, clomipramine, doxepin</td>
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<tr>
<td></td>
<td>• doxepin (doses greater than 6 mg/day)</td>
<td></td>
<td>clomipramine, doxepin</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>amitriptyline, clomipramine, doxepin</td>
</tr>
<tr>
<td><strong>Antihistamines</strong></td>
<td>• levocetirizine</td>
<td></td>
<td>loratadine</td>
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<tr>
<td></td>
<td>• cetirizine</td>
<td></td>
<td>loratadine</td>
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<tr>
<td></td>
<td>• fexofenadine</td>
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<td>loratadine</td>
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<td></td>
<td>• hydroxyzine</td>
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<td>loratadine</td>
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<td></td>
<td></td>
<td></td>
<td>loratadine</td>
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<tr>
<td><strong>Anti-thrombotics</strong></td>
<td>• anticoagulant drugs</td>
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<td>anticoagulant drugs</td>
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<td></td>
<td></td>
<td>anticoagulant drugs</td>
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<tr>
<td><strong>Belladonna alkaloids</strong></td>
<td>• atropine</td>
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<td>atropine</td>
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<td></td>
<td>(includes single entity or as part of a combination product)</td>
<td></td>
<td>atropine</td>
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<tr>
<td></td>
<td>• hyoscymine</td>
<td></td>
<td>atropine, hyoscymine</td>
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<tr>
<td></td>
<td>• hemlockine</td>
<td></td>
<td>atropine</td>
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<td></td>
<td></td>
<td></td>
<td>atropine, hyoscymine</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>atropine, hyoscymine</td>
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<tr>
<td><strong>Calcium channel blockers</strong></td>
<td>• nifedipine</td>
<td></td>
<td>nifedipine</td>
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<td></td>
<td>• short-acting only</td>
<td></td>
<td>nifedipine</td>
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<td></td>
<td></td>
<td></td>
<td>nifedipine</td>
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<tr>
<td><strong>Cardiovascular</strong></td>
<td>• digoxin (doses greater than 0.125 mg/day)</td>
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<td>digoxin</td>
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<tr>
<td></td>
<td>• diospyramide</td>
<td></td>
<td>digoxin</td>
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<tr>
<td><strong>Endocrine</strong></td>
<td>• megestrol</td>
<td></td>
<td>methoxyflurane</td>
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<td></td>
<td></td>
<td></td>
<td>methoxyflurane</td>
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<tr>
<td><strong>Narcotics</strong></td>
<td>• oxycodone</td>
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<td>oxycodone</td>
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<td></td>
<td>• propoxyphene</td>
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<td>propoxyphene</td>
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</tbody>
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### Adverse side effects/concerns

- **Antipsychotics**
  - thioridazine: Highly anticholinergic; central nervous system (CNS) effects; may cause bradykinesia and anticholinergic hypotension; not recommended for routine treatment of hypertension. amiodipine, amlodipine, enalapril, flosequinar, lisinopril, losartan, memantine
- Potential for gastrointestinal bleeding, renal failure, high blood pressure and heart failure. acetylsalicylic acid (ASA) is not recommended for routine treatment.

- **Analgesics**
  - indomethacin: Potential for gastrointestinal bleeding, renal failure, high blood pressure and heart failure. acetylsalicylic acid (ASA) is not recommended for routine treatment.

- **Anti-anxiety**

- **Antidepressants, tricyclic**
  - amitriptyline: Highly anticholinergic effects; may cause orthostatic hypotension. Depression: Selective serotonin reuptake inhibitors (SSRIs) – escitalopram, fluoxetine, sertraline, venlafaxine.

- **Antihistamines**

- **Anti-thrombotics**

- **Belladonna alkaloids**
  - atropine: Heart failure, increased risk of toxicity, decreased renal clearance. Anticholinergic effects: meperidine, meperidine-pentazocine, nabilone-pentazocine, pentazocine.

- **Calcium channel blockers**
  - nifedipine: Potential for hypotension, risk of causing myocardial ischemia. Use long-acting formulation to avoid adverse effects. Feliadinone, feliupine long-acting (feliupine ERI).

- **Cardiovascular**
  - digoxin: Heart failure, high dose increases risk of toxicity, decreased renal clearance. Diuretics: Potent negative inotropic that may reduce heart failure in older adults. Anticholinergic effects: Meperidine: May not be as effective at commonly prescribed doses, side effects include confusion, falls, fractures, dependency and withdrawal. Pentazocine: Produces central nervous system adverse effects, including confusion and hallucinations and is a mixed agonist and antagonist; safer alternatives are available. Antipsychotics (not in combination product), fentanyl transdermal patch, hydrocodone, morphine, oxycodone, tramadol.
Nonbarbiturate or nonbenzodiazepine hypnotic (when cumulative days' supply is greater than 90 days)

- Chloral hydrate
- Lunesta (eszopiclone)
- Sonata (zaleplon)
- Ambien (zolpidem)

Chloral hydrate: Tolerance develops within 10 days; risks outweigh benefits: delirium, overdose (moran therapeutic window)

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

Consider only short-term or intermittent use (less than 90 days per year).

Over-the-counter option: melatonin, if appropriate; regarded as safe in recommended doses (up to 15 mg daily) for up to two years.

Distress estrogens and estradiol transdermal patch

- Conjugated estrogen
- Conjugated estrogen–medroxyprogesterone
- Desipramine–estradiol
- Estriol–norethindrone
- Estriol–levonorgestrel

Cardio-protective properties are absent; high carcinogenic effects (breast cancer and endometrial cancer)

Hot flashes: nondrug comfort therapy

SSRIs*: escitalopram**, fluvoxamine**, sertraline*, SNRIs: venlafaxine*

Vaginal dryness: Premarin vaginal cream***

Bone density: alendronate**, calcium∆, raloxifene***, vitamin D³,

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