

**ALPRAZOLAM** (use lowest effective dose)

**AMIODARONE** (may cause arrhythmias; questionable efficacy in older adults)

**AMITRIPTYLINE** (anticholinergic effects and sedation)

**AMPHETAMINES** (may cause dependence, hypertension, angina, MI, CNS stimulation)

**ANOREXIC AGENTS** (may cause dependence, hypertension, angina, and MI)

**BARBITURATES**, except phenobarbital or for seizures (highly addictive, cause more adverse effects in elderly than most other hypnotic/sedatives)

**BELLADONNA ALKALOIDS** (anticholinergic effects and questionable effectiveness; avoid its use, esp. long-term)

**BISACODYL** (bowel dysfunction with long-term use; may be appropriate with opiate analgesics)

**CARISOPRODOL** (poorly tolerated due to anticholinergic effects and possibly less effective at tolerated doses)

**CASCARA SAGRADA** (bowel dysfunction with long-term use; may be appropriate with opiate analgesics)

**CHLORAZEPATE** (prolonged sedation; short-acting benzodiazepines are preferred)

**CHLORDIAZEPOXIDE** (prolonged sedation; short-acting benzodiazepines are preferred)

**CHLORDIAZEPOXIDE-AMITRIPTYLINE** (anti-cholinergic effects and prolonged sedation; short-acting benzodiazepines preferred)

**CHLORPHENIRAMINE** (causes anticholinergic effects; non-anticholinergic antihistamines preferred for treating allergic reactions)

**CHLORPROPAMIDE** (may cause prolonged hypoglycemia and/or SIADH)

**CHLORZOXAZONE** (poorly tolerated by elderly due to anticholinergic effects and possibly less effective at tolerated doses)

**Cimetidine** (may cause confusion, other CNS adverse effects)

**CLIDINIUM-CHLORDIAZEPOXIDE** (anticholinergic effects, prolonged sedation; shortacting benzodiazepines preferred) clidinium is of questionable effectiveness; avoid its use, esp. long-term)

**Clonidine** (may cause orthostatic hypotension, adverse CNS effects)

**Cyclandelate** (uncertain efficacy at doses studied)

**CYCLOBENZAPRINE** (poorly tolerated by elderly due to anticholinergic effects and possibly less effective at tolerated doses)

**CYPROHEPTADINE** (causes anticholinergic effects; non-anticholinergic antihistamines preferred for treating allergic reactions)

**DEXCHLORPHENIRAMINE** (causes anticholinergic effects; non-anticholinergic antihistamines preferred for treating allergic reactions)

**DIAZEPAM** (prolonged sedation; short-acting benzodiazepines preferred)

**DICYCLOMINE** (causes anticholinergic effects and is of questionable effectiveness; avoid its use, esp. long-term)

**Digoxin** (increased risk of toxic effects with decreased renal function; use low doses except when treating atrial arrhythmias)

**DIPHENHYDRAMINE** (causes anticholinergic effects and sedation; non-anticholinergic antihistamines preferred for treating allergic reactions; should be used only at lowest effective dose if used for allergic reactions; should not be used as a hypnotic)

**Dipyridamole**, short-acting (may cause ortho-static hypotension)

**DISOPYRAMIDE** (may cause heart failure and anticholinergic effects; avoid its use)

**Doxazosin** (hypotension, dry mouth, urinary problems)

**DOXEPIN** (anticholinergic effects and sedation)

**Ergot mesyloids** (uncertain efficacy at doses studied)

**Estrogens** only, oral forms (carcinogenicity and lack of cardioprotective effect in older women)

**Ethacrynic acid** (may cause hypertension, fluid/electrolyte imbalances; use safer alternatives)

**Ferrous sulfate** (doses over 325mg/day are not reliably absorbed but may cause constipation)

**FLUOXETINE**, daily use forms (may cause excessive CNS stimulation, agitation, sleep disturbances; use safer alternatives)

*continued*

Adapted from: Updating the Beers Criteria for Potentially Inappropriate Medication Use in Older Adults. Results of a US Consensus Panel of Experts. (Table 1). Fick, DM, et. al. *Arch Intern Med.* 2003;163:2716-2724.

\*Listings in **ALL CAPS** denotes "high severity"

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*continued*

**FLURAZEPAM** (prolonged sedation may result in falls/fractures; medium- or short-acting benzodiazepines preferred)

**GUANADREL** (orthostatic hypotension)

**GUANETHIDINE** (orthostatic hypotension)

**HALAZEPAM** (prolonged sedation; shortacting benzodiazepines preferred)

**HYDROXYZINE** (causes anticholinergic effects; non-anticholinergic antihistamines preferred for treating allergic reactions)

**HYOSCYAMINE** (causes anticholinergic effects and is of questionable effectiveness; avoid its use, esp. long-term)

**INDOMETHACIN** (causes the most CNS side effects among NSAIDs)

**Isoxsurpine** (uncertain efficacy)

**KETOROLAC** (avoid immediate and longterm use in elderly, because they may have asymptomatic pathological GI conditions)

**LORAZEPAM** (use lowest effective dose)

**MEPERIDINE** (may cause confusion; is of questionable efficacy at commonly used oral doses)

**MEPROBAMATE** (very addicting and sedating; slow withdrawal needed after prolonged use)

**MESORIDAZINE** (CNS and extrapyramidal adverse effects)

**METAXALONE** (poorly tolerated by elderly due to anticholinergic effects; possibly less effective at tolerated doses)

**METHOCARBAMOL** (poorly tolerated by elderly due to anticholinergic effects; possibly less effective at tolerated doses)

**METHYLDOPA** and **METHYLDOPA-HCTZ** (may cause bradycardia and worsen depression in elderly)

**METHYLTESTOSTERONE** (may cause prostatic hypertrophy, cardiac problems)

**MINERAL OIL** (potential for aspiration and other adverse effects; use safer alternatives)

**NAPROXEN** (avoid long-term, full-dose use due to potential to cause GI bleed, renal failure, high BP, heart failure)

**NEOLOID** (bowel dysfunction with long-term use; may be appropriate with opiate analgesics)

**NIFEDIPINE**, short acting (may cause hypotension, constipation)

**NITROFURANTOIN** (may cause renal impairment; use safer alternatives)

**ORPHENADRINE** (sedation, anticholinergic effects; use safer alternatives)

**OXAPROZIN** (avoid long-term, full-dose use due to potential to cause GI bleed, renal failure, high BP, heart failure)

**OXAZEPAM** (use lowest effective dose)

**OXYBUTYNIN** (poorly tolerated by elderly due to anticholinergic effects; possibly less effective at tolerated doses; do not consider extended-release form)

**PENTAZOCINE** (may cause more CNS adverse effects than other narcotics)

**PERPHENAZINE-AMITRIPTYLINE** (anticholinergic effects, sedation)

**PIROXICAM** (avoid long-term, full-dose use due to potential to cause GI bleed, renal failure, high BP, heart failure)

**PROMETHAZINE** (causes anticholinergic effects; non-anticholinergic antihistamines preferred for treating allergic reactions)

**PROPANTHELINE** (causes anticholinergic effects and is of questionable effectiveness; avoid its use, esp. long-term)

**Propoxyphene** and combination products (risks may outweigh benefits)

**QUAZEPAM** (prolonged sedation; short-acting benzodiazepines preferred)

**RESERPINE** (may cause depression, impotence, sedation, and orthostatic hypotension at doses over 0.25mg)

**TEMAZEPAM** (use lowest effective dose)

**THIORIDAZINE** (greater potential for CNS and extrapyramidal adverse effects)

**THYROID, DESSICATED** (possible cardiac effects; use safer alternatives)

**TICLOPIDINE** (aspirin, or other alternative drugs, may be preferable due to efficacy and safety)

**TRIAZOLAM** (use lowest effective dose)

**TRIMETHOBENZAMIDE** (less effective, and may cause extrapyramidal symptoms)

**TRIPLENNAMINE** (causes anticholinergic effects; non-anticholinergic antihistamines preferred for treating allergic reactions)

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