

BEERS CRITERIA

Adapted from Fick, DM, et al. Updating the Beers Criteria for Potentially Inappropriate Medication Use in Older Adults. Archives of Internal Medicine 2003;163, DEC 8/22:2716-2724. Last updated 9/24/04.

The following medications should be avoided or used very cautiously in persons aged 65 years and over, independent of their health conditions and diagnoses.

Drug Name or Class	Comments	Severity (High or Low)
Long-acting benzodiazepines: <ul style="list-style-type: none"> • Chlordiazepoxide (alone or in combination: Librium, Librax, Limbitrol) • Diazepam (Valium) • Quazepam (Doral) • Halazepam (Paxipam) • Chlorazepate (Tranxene) • Flurazepam (Dalmane) 	These agents have very long half-lives, cause prolonged sedation and increase the risk of falls and fractures. If benzodiazepine therapy is unavoidable, use short-acting agents.	High
Short-acting benzodiazepines should rarely exceed the doses shown below. <ul style="list-style-type: none"> • Lorazepam (Ativan) 3mg • Oxazepam (Serax) 60mg • Triazolam (Halcion) 0.25mg • Alprazolam (Xanax) 2mg • Temazepam (Restoril) 15mg 	With rare exceptions, the agents should be used only in persons who are physically dependent or who are being treated with short-course therapy for an acute condition.	High
Meprobamate (Miltown and Equanil)	This anxiolytic is highly sedating and addictive. All use should be avoided except in individuals who are already physically dependent.	High
Barbiturates except Phenobarbital for seizures	All use should be avoided except in individuals who are physically dependent or for seizure disorder management. <u>There are safer sedative-hypnotics available.</u>	High
Amitriptyline (Elavil), chlordiazepoxide-amitriptyline (Limbitrol), Amitriptyline-perphenazine (Triavil), doxepin (Sinequan)	Amitriptyline and doxepin are very sedating and anticholinergic, their use should be avoided.	High
Methyldopa (Aldomet) Methyldopa-hydrochlorothiazide (Aldoril)	All use should be avoided. Methyldopa causes bradycardia and can exacerbate depression in the elderly. Safer antihypertensives are available.	High
Reserpine at doses >0.25mg	All use should be avoided. Safer antihypertensives are available.	Low
Indomethacin (Indocin and Indocin SR)	All use should be avoided. Other NSAIDs cause CNS toxic reactions less often.	High
Chlorpropamide (Diabinese)	All use should be avoided. Other oral hypoglycemics have shorter half-lives and do not cause SIADH.	High
Propoxyphene (Darvon) and combination products (Darvocet-N, Darvon-N, Darvon with ASA)	All use should be avoided; it has little advantage over acetaminophen. Other analgesics are safer and more effective.	Low
Pentazocine (Talwin)	All use should be avoided. Other narcotics are more effective and safer.	High
Ergot Mesyloids (Hydergine) and Cyclandelate	All use should be avoided. Have not been shown effective in the doses studied.	Low
Diphenhydramine (Benadryl)	Use only in the smallest effective dose and only for emergency treatment of allergic reactions. Causes confusion and sedation.	High

<p>Anticholinergics and Antihistamines</p> <ul style="list-style-type: none"> • Chlorpheniramine (Chlor-Trimeton) • Diphenhydramine (Benadryl) • Hydroxyzine (Vistaril and Atarax) • Cyproheptadine (Periactin) • Promethazine (Phenergan) • Tripeleennamine, dexchlorpheniramine (Polaramine) 	All nonprescription and many prescription antihistamines can have potent anticholinergic effects and cause confusion and sedation. To treat allergic reactions, use nonanticholinergic antihistamines rather than these agents.	High
Dipyridamole	Short-acting form (Persantine) may cause orthostatic hypotension. Long-acting form may be appropriate in persons who have artificial heart valves.	Low
Digoxin (Lanoxin)	Doses should not exceed 0.125 mg/d except when treating atrial arrhythmias. Diminished renal clearance increases the risk of toxicity.	Low
Disopyramide (Norpace and Norpace CR)	Strong anticholinergic and negative inotropic effects make this agent a poor antiarrhythmic choice.	High
Ferrous Sulfate > 325mg/d	Higher doses do not substantially increase iron absorption but do cause increased constipation.	Low
<p>Muscle relaxants - antispasmodics</p> <ul style="list-style-type: none"> • Methocarbamol (Robaxin) • Cyclobenzaprine (Flexeril) • Oxybutynin (Ditropan intermediate-release) • Metaxalone (Skelaxin) • Carisoprodol (Soma) • Chlorzoxazone (Paraflex) 	The doses needed to achieve a therapeutic effect generally produce anticholinergic side-effects poorly tolerated by the elderly.	High
<p>GI antispasmodics</p> <ul style="list-style-type: none"> • Dicyclomine (Bentyl) • Hyoscyamine (Levsin and Levsinex) • Propantheline (Pro-Banthine) • Belladonna alkaloids (Donnatal and others) • Clidinium-chlordiazepoxide (Librax) 	All have uncertain effectiveness and are strongly anticholinergic. Avoid all use - particularly long-term use.	High
Trimethobenzamide (Tigan)	All use should be avoided. Least effective antiemetic; causes extrapyramidal effects.	High
Meperidine (Demerol)	Not an effective oral analgesic. Causes confusion and its metabolites can cause seizures.	High
Ticlopidine (Ticlid)	No more effective than ASA in preventing clotting; safer alternatives exist.	High
Ketorolac (Toradol)	Avoid all use in older patients since many have asymptomatic GI pathology.	High
Amphetamines and anorexic agents	Potential for dependence, angina, hypertension and myocardial infarction.	High
<p>Long-term use of full-dose non-COX selective NSAIDs:</p> <ul style="list-style-type: none"> • Naproxen (Naroxyn, Anaprox, Aleve) • Oxaprozin (Daypro) • Piroxicam (Feldene) 	Potential for renal failure, GI bleeding, hypertension and heart failure.	High
Daily Fluoxetine (Prozac)	Has a long half-life and can produce insomnia and agitation. Safer alternatives exist.	High

<p>Long-term use of stimulant laxatives:</p> <ul style="list-style-type: none"> • Bisacodyl (Dulcolax) • Cascara sagrada • Neoloid 	<p>May be appropriate in the presence of opiate analgesic use. Otherwise, may exacerbate bowel dysfunction.</p>	<p>High</p>
Amiodarone (Cordarone)	Associated with QT prolongation and torsades de pointes. Lack of efficacy in the elderly.	High
Orphenadrine (Norflex)	Causes more sedation and anticholinergic effects than its alternatives do.	High
Guanethidine (Ismelin)	Causes orthostatic hypotension. Safer antihypertensives exist.	High
Guanadrel (Hylorel)	Causes orthostatic hypotension. Safer antihypertensives exist.	High
Cyclandelate (Cyclospasmol)	Lack of efficacy.	Low
Isoxsuprine (Vasodilan)	Lack of efficacy.	Low
Nitrofurantoin (Macrochantin)	Potential for renal impairment; safer alternatives exist.	High
Doxazosin (Cardura)	Potential for hypotension and dry mouth. Can exacerbate symptoms of stress incontinence and mixed-cause incontinence.	Low
Methyltestosterone (Android, Virilon, and Testrad)	Potential for prostatic hypertrophy and cardiac problems.	High
Thioridazine (Mellaril)	Greater potential for CNS and extrapyramidal side effects.	High
Mesoridazine (Serentil)	CNS and extrapyramidal side effects.	High
Short-acting nifedipine (Procardia and Adalat)	Potential for hypotension and constipation.	High
Clonidine (Catapres)	Potential for hypotension and CNS side effects.	Low
Mineral oil	Potential for aspiration and adverse effects. Safer alternatives are available.	High
Cimetidine (Tagamet)	Can cause confusion and delirium.	Low
Ethacrynic acid (Edecrin)	Potential for hypotension and electrolyte and fluid imbalances. Safer alternatives available.	Low
Desiccated thyroid	Concerns about cardiac effects. Safer alternatives are available.	High
Amphetamines (other than methylphenidate HCl and anorexics addressed elsewhere in this table)	Adverse CNS stimulation effects.	High
Oral estrogens	No cardioprotective effect. Significant risk of carcinogenic effects (breast/endometrial cancer.)	Low

The following medications should be avoided in persons aged 65 years and over who have the following health conditions or diagnoses.

Disease or Condition	Drug Name or Class	Comments	Severity (High or Low)
Heart Failure	Disopyramide (Norpace), and high sodium content drugs (sodium and sodium salts [alginate bicarbonate, biphosphate, citrate, phosphate, salicylate and sulfate])	Negative inotropic effect. Potential to promote fluid retention and exacerbate heart failure.	High
Hypertension	Phenylpropanolamine HCl (removed from the market in 2001), pseudoephedrine, diet pills, and amphetamines	Sympathomimetics can exacerbate hypertension.	High
Gastric or duodenal ulcers	NSAIDs (COX-2 inhibitors excluded) and aspirin >325mg/d	May exacerbate existing ulcer disease or create new ulcers.	High
Seizure disorders	Clozapine (Clozaril), chlorpromazine (Thorazine), thioridazine (Mellaril), and thiothixene (Navane)	These agents can lower the seizure threshold.	High
Disorders of blood clotting (including anticoagulant therapy)	Aspirin, NSAIDs, dipyridamole (Persantin), ticlopidine (Ticlid), and clopidogrel (Plavix)	Increased risk of bleeding through multiple mechanisms of action.	High
Bladder outflow obstruction	Anticholinergics and antihistamines, gastrointestinal antispasmodics, muscle relaxants, oxybutynin (Ditropan), flavoxate (Urispas), antidepressants, decongestants, and tolterodine (Detrol)	Can lead to urinary retention.	High
Stress incontinence	alpha-blockers (Doxazosin, Prazosin, and Terazosin), tricyclic antidepressants (imipramine, doxepin and amitriptyline), and long-acting benzodiazepines	May worsen symptoms of incontinence.	High
Arrhythmias	Tricyclic antidepressants (imipramine, doxepin and amitriptyline)	Proarrhythmic potential.	High
Insomnia	Decongestants, theophylline (Theodur), methylphenidate (Ritalin), MAOIs, and amphetamines	CNS stimulant effects.	High
Parkinson's Disease	Metoclopramide (Reglan), conventional antipsychotics and tacrine (Cognex)	Antidopaminergic and anticholinergic effects can worsen symptoms of Parkinsonism.	High
Cognitive Impairment	Barbiturates, anticholinergics, antispasmodics, and muscle relaxants. CNS stimulants: DextroAmphetamine (Adderall), methylphenidate (Ritalin), methamphetamine (Desoxyn), pemolin, and fluoxetine (Prozac)	CNS-altering effects can worsen cognitive performance.	High
Depression	Long-term benzodiazepine use. Sympatholytic agents: methyl dopa (Aldomet), reserpine, guanethidine (Ismelin)	May produce or exacerbate depression.	High
Anorexia and malnutrition	CNS stimulants: DextroAmphetamine (Adderall), methylphenidate (Ritalin), methamphetamine (Desoxyn), pemolin, and fluoxetine (Prozac)	These agents suppress appetite.	High
Syncope or falls	Short- to intermediate-acting benzodiazepines and tricyclic antidepressants (imipramine, doxepin and amitriptyline)	May produce ataxia, impair psychomotor function, and increase falls.	High
SIADH/hyponatremia	SSRIs: fluoxetine (Prozac), citalopram (Celexa), fluvoxamine (Luvox), paroxetine (Paxil), and sertraline (Zoloft)	May exacerbate or cause SIADH.	Low
Seizure disorder	Bupropion (Wellbutrin)	May lower the seizure threshold.	High

Obesity	Olanzapine (Zyprexa)	May stimulate appetite and cause weight gain.	Low
COPD	Long-acting benzodiazepines: Chlordiazepoxide (alone or in combination: Librium, Librax, Limbitrol), Diazepam (Valium), Quazepam (Doral), Halazepam (Paxipam), and Chlorazepate (Tranxene); Beta-blockers: propranolol	CNS adverse effects. May induce respiratory depression. May exacerbate or cause respiratory depression.	High
Chronic constipation	Calcium channel blockers, anticholinergics, and tricyclic antidepressants (imipramine, doxepin and amitriptyline)	May exacerbate constipation.	Low



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