

Alternatives for Beers Criteria High-Risk Medications in Older Adults

Therapeutic Class	High-Risk Medications	Alternatives
Anticholinergic		
First-generation antihistamine	Clemastine Cyproheptadine (oral) Doxylamine (oral) Hydroxyzine Promethazine Triprolidine	Intranasal normal saline Second-generation antihistamine (e.g., cetirizine, fexofenadine, loratadine) Intranasal steroid (e.g., beclomethasone, fluticasone, over the counter)
Parkinson disease	Benzotropine (oral) Trihexyphenidyl	Carbidopa/levodopa
Antiplatelets	Dipyridamole (oral immediate release) Ticlopidine	Antithrombotic therapy for the secondary prevention of noncardioembolic stroke Clopidogrel, aspirin 25 mg with extended-release dipyridamole 200 mg
Cardiovascular		
Alpha agonists, central	Guanabenz Guanfacine Methyldopa	Thiazide-type diuretic, ACEI, ARB, long-acting dihydropyridine CCB In black individuals—thiazide-type diuretic, CCB For heart failure, diabetes mellitus, chronic kidney disease—ACEI or ARB preferred
Other	Disopyramide	Atrial fibrillation: For rate control—nondihydropyridine CCB (e.g., diltiazem), betablocker For rhythm control—dofetilide flecainide, propafenone
	Nifedipine (immediate release)	Long-acting dihydropyridine CCB (e.g., amlodipine)
Central nervous system		
Tertiary tricyclic antidepressant	Amitriptyline Clomipramine Imipramine Trimipramine	For depression—SSRI (except paroxetine), SNRI, bupropion—see reverse side of this resource For neuropathic pain—SNRI, gabapentin, capsaicin topical, pregabalin, lidocaine patch
Barbiturate	Amobarbital Butobarbital Butalbital Mephobarbital	Pentobarbital Phenobarbital Secobarbital
Vasodilator	Ergot mesylates Isoxsuprine	Acetylcholinesterase inhibitors, memantine, Vitamin E
Central nervous system, nonbenzodiazepine hypnotics	Eszopiclone Zaleplon Zolpidem	Nonpharmacologic evidence-based practices and therapies—see reverse side of this resource

Therapeutic Class	High-Risk Medications	Alternatives
Central nervous system (cont.)		
Other	Thioridazine	For schizophrenia—other nonanticholinergic antipsychotic (not chlorpromazine, loxapine, olanzapine, perphenazine, thioridazine, trifluoperazine)
Other	Meprobamate Chloral hydrate (no longer marketed in United States)	For anxiety—buspirone, SSRI, SNRI
Endocrine system		
Estrogens with or without progestins (oral or patch)	Conjugated estrogen Esterified estrogen Estradiol Estropipate	Use of vaginal estrogen formulations acceptable for treatment of dyspareunia and vulvovaginitis Vasomotor symptoms—SSRI, SNRI, gabapentin
Sulfonylureas, long-duration	Guanabenz Guanfacine Methyldopa	Short-acting sulfonylureas (glipizide, gliclazide), metformin
Other	Desiccated thyroid	Levothyroxine
	Megestrol	Nonpharmacologic evidence-based practices and therapies—see reverse side of this resource
Pain medication		
Skeletal muscle relaxants	Carisoprodol Chlorzoxazone Cyclobenzaprine Metaxalone Methocarbamol Orphenadrine	For acute mild or moderate pain—acetaminophen, nonacetylated salicylate (e.g., salsalate), propionic acid derivatives (e.g., ibuprofen, naproxen) if no heart failure or eGFR>30 mL/min and given with PPI for gastroprotection if used for >7 days
Specific nonsteroidal antiinflammatory drugs	Indomethacin, Ketorolac (oral and parenteral)	For mild or moderate chronic pain—acetaminophen, nonacetylated salicylate (e.g., salsalate), propionic acid derivatives (e.g., ibuprofen, naproxen) if no heart failure or eGFR >30 mL/min and given with PPI for gastroprotection
Opioids	Meperidine Pentazocine	For acute moderate to severe pain—tramadol, morphine, oxycodone immediate release with acetaminophen For chronic moderate to severe pain—all the above; avoid long duration, sustained-release dosage forms in opioid-naïve individuals; see neuropathic pain alternatives above under tertiary tricyclic antidepressant alternatives

ACEI = angiotensin-converting enzyme inhibitor; ARB = angiotensin receptor blocker; eGFR = estimated glomerular filtration rate; CCB = calcium channel blocker; PPI = proton pump inhibitor; SSRI = selective serotonin reuptake inhibitor; SNRI = serotonin norepinephrine reuptake inhibitor. In all instances including those specified, nonpharmacological approaches should be sought first when appropriate. See reverse side for references.

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Resources for Nonpharmacological Alternatives to Potentially High-Risk Medications in Older Adults

General

- Holroyd-Leduc J, Reddy M, eds. Evidence-Based Geriatric Medicine. London: BMJ Books, 2012.
- Reuben DB, Herr KA, Pacala JT et al. Geriatrics at Your Fingertips: 2015, 17th Ed. New York: American Geriatrics Society, 2015.
- Abraha I, Cruz-Jentoft A, Soiza RL et al. Evidence of and recommendations for non-pharmacological interventions for common geriatric conditions: The SENATOR-ONTOP systematic review protocol. *BMJ Open* 2015;5:e007488.
- Durso SC, Sullivan GM, eds. Geriatrics Review Syllabus: A Core Curriculum in Geriatric Medicine, 8th Ed. New York: American Geriatrics Society, 2013.

Appetite

- Hanson LC, Ersek M, Gilliam R et al. Oral feeding options for people with dementia: A systematic review. *J Am Geriatr Soc* 2011;59:463–472.

Delirium

- The American Geriatrics Society Expert Panel on Postoperative Delirium in Older Adults. Postoperative delirium in older adults: Best practice statement from the American Geriatrics Society. *J Am Coll Surg* 2015;220:136–148.
- Rossom R, Anderson P, Greer N. Delirium: Screening, Prevention, and Diagnosis: A Systematic Review of the Evidence. Washington, DC: Department of Veterans Affairs; September 2011 [on-line]. Available at <http://www.hsrd.research.va.gov/publications/esp/delirium.cfm>

Dementia Behavioral Complications

- Caring for a Person with Alzheimer's Disease: Your Easy-to-Use Guide from the National Institute on Aging [on-line]. Available at <https://www.nia.nih.gov/alzheimers/publication/caring-person-alzheimers-disease/aboutguide>
- O'Neil MA, Freeman M, Chistensen V et al. A Systematic Evidence Review of Non-pharmacological Interventions for Behavioral Symptoms of Dementia [on-line]. Washington, DC: Department of Veterans Affairs, 2011. Available at http://www.hsrd.research.va.gov/publications/esp/dementia_nonpharm.cfm
- Gitlin LN, Kales HC, Lyketsos C. Managing behavioral symptoms in dementia using nonpharmacologic approaches: An overview. *JAMA* 2012;308:2020–2029.
- Kolanowski A, Van Haitsma K. Promoting positive behavioral health: A nonpharmacologic toolkit for senior living communities (2013) [on-line]. Available at www.nursinghometoolkit.com

Pain

- Park J, Hughes AK. Nonpharmacological approaches to the management of chronic pain in community-dwelling older adults: A review of empirical evidence. *J Am Geriatr Soc* 2012;60:555–568.
- Makris UE, Abrams RC, Gurland B et al. Management of persistent pain in the older patient: A clinical review. *JAMA* 2014;312:825–836.
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Transcutaneous electrical nerve stimulation

- Dubinsky RM, Miyasaki J. Assessment: Efficacy of transcutaneous electrical nerve stimulation in the treatment of pain in neurological disorders (an evidence based review): Report of the Therapeutics and Technology Assessment Subcommittee of the American Academy of Neurology. *Neurology* 2010;74:173–176.
- Khadilkar A, Odebiyi DO, Brosseau L et al. Transcutaneous electrical nerve stimulation (TENS) versus placebo for chronic low-back pain. *Cochrane Database Syst Rev* 2008;(4):CD003008.

Percutaneous Electrical Nerve Stimulation

- Weiner DK, Perera S, Rudy TE et al. Efficacy of percutaneous electrical nerve stimulation and therapeutic exercise for older adults with chronic low back pain: A randomized controlled trial. *Pain* 2008;140:344–357.
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Acupuncture

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Cognitive Behavioral Therapy

- Keefe FJ, Porter L, Somers T et al. Psychosocial interventions for managing pain in older adults: Outcomes and clinical implications. *Br J Anaesth* 2013;111:89–94.
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Urinary Incontinence

- Qaseem A, Dallas P, Forcica MA et al. Nonsurgical management of urinary incontinence in women: A clinical practice guideline from the American College of Physicians. *Ann Intern Med* 2014;161:429–440.
- Age Page. Urinary incontinence guide. National Institute on Aging [online]. Available at [https://www.nia.nih.gov/sites/default/files/Urinary PartsAPfinalproof_0.pdf](https://www.nia.nih.gov/sites/default/files/Urinary%20PartsAPfinalproof_0.pdf)

Sleep

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