

Supplemental Online Content

Linsky AM, Motala A, Booth M, Lawson E, Shekelle PG. Deprescribing in community-dwelling older adults: a systematic review and meta-analysis. *JAMA Netw Open*. 2025;8(5):e259375. doi:10.1001/jamanetworkopen.2025.9375

eAppendix 1. Search Strategy

eAppendix 2. Excluded Studies, Background Studies, and Systematic Reviews

eAppendix 3. Cochrane Risk of Bias for RCTs

eTable 1. Cochrane Risk of Bias for RCTs

eTable 2. GRADE Certainty of Evidence Table

eReferences.

This supplemental material has been provided by the authors to give readers additional information about their work.

Supplemental File 1. Search Strategy

Databases:

- PubMed (NIH/NLM)
- Cochrane Library

Limits:

- 2019 – 2024
- In English

Deliverables:

- Word doc of all search strategies
- De-duplicated EndNote library of all search results

Results:

- Total # for review post-deduplication of EN Library: **1,584**

PubMed

Set #	Search	# of results
1	elder[tiab] OR elders[tiab] OR elderly[tiab] OR geriatric*[tiab] OR gerontolog*[tiab] OR “old age”[tiab] OR “oldest old”[tiab] OR “senior citizen”[tiab] OR “very old”[tiab] OR septuagenarian*[tiab] OR octogenarian*[tiab] OR octagenarian*[tiab] OR nonagenarian*[tiab] OR centarian*[tiab] OR centenarian*[tiab] OR supercentenarian*[tiab] OR “older people”[tiab] OR “older person”[tiab] OR “older subject”[tiab] OR “older patient”[tiab] OR “older age”[tiab] OR “older adult”[tiab] OR “older man”[tiab] OR “older men”[tiab] OR “older male”[tiab] OR “older woman”[tiab] OR “older women”[tiab] OR “older female”[tiab] OR “older veterans”[tiab] OR “older population”[tiab] OR “nursing home”[tiab] OR “Aged”[MAJR] OR “Aged, 80 and over”[MAJR] OR “Health Services for the Aged”[MAJR] OR “Geriatric Assessment”[MAJR] OR “Geriatrics”[MAJR] OR “Geriatric Psychiatry”[MAJR] OR “Homes for the Aged”[MAJR] OR “Nursing Homes”[MAJR]	728,186
2	(“deprescrib”[tiab] OR “de prescribing”[tiab] OR “de prescription”[tiab] OR “inappropriate prescri”[tiab] OR “inappropriate medication”[tiab] OR “potentially inappropriate”[tiab] OR PIMs[tiab] OR PIM[tiab] OR “appropriateness medications”[tiab:~2] OR “appropriate prescribing”[tiab] OR (“medication”[ti] OR “prescribing”[ti] OR prescription*[ti]) AND (inappropriate*[ti] OR “over prescrib”[ti] OR overus*[ti])) OR “polypharmacy”[tiab] OR ((medication*[ti] OR drugs[ti] OR “drug therap”[ti] OR prescription*[ti] OR “prescribing”[ti]) AND (inappropriate*[ti] OR appropriate*[ti]) AND (reduc*[ti] OR discontinu*[ti] OR withdraw*[ti] OR cease[ti] OR ceasing[ti] OR cessation[ti] OR “dose reduction”[ti] OR taper*[ti])) OR ((review*[ti] OR assess*[ti] OR evaluat*[ti] OR screen*[tiab] OR STOPP[tiab] OR START[tiab] OR “STOPP START”[tiab:~1] OR “Beers Criteria”[tiab]) AND (appropriate*[tiab] OR inappropriate*[tiab]) AND (“drug utilization”[ti] OR medication[ti] OR prescrib*[ti] OR prescription*[tiab] OR “drug	30,138

	therap*[ti])) OR "geriatric pharmacotherap*[tiab] OR "geriatric pharmacol*[tiab] OR "Deprescriptions"[MAJR] OR "Inappropriate Prescribing"[MAJR] OR "Drug Utilization Review"[MAJR:NoExp] OR Polypharmacy[MAJR] OR "Potentially Inappropriate Medication List"[MAJR])	
3	(#1 AND #2) AND ((2023/7/1:2024/12/31[pdat]) AND (english[Filter]))	1,072
4	clinicalstudy[Filter] OR clinicaltrial[Filter] OR comparativestudy[Filter] OR controlledclinicaltrial[Filter] OR evaluationstudy[Filter] OR governmentpublication[Filter] OR observationalstudy[Filter] OR randomizedcontrolledtrial[Filter] OR researchsupportamericanrecoveryandreinvestmentact[Filter] OR researchsupportnihextramural[Filter] OR researchsupportnihintramural[Filter] OR researchsupportusgovtnonphs[Filter] OR researchsupportusgovtphs[Filter] OR researchsupportusgovernment[Filter] OR validationstudy[Filter] OR "randomized control*[ti] OR "randomised control*[ti]	6,225,334
5	#3 AND #4	127
6	systematicreview[Filter] OR meta-analysis[Filter] OR review[Filter] OR guideline[Filter] OR practiceguideline[Filter] OR "systematic review"[ti] OR meta-analysis[ti] OR "scoping review"[ti] OR "state of the art"[ti] OR "realist review"[ti] OR "rapid review"[ti] OR "narrative review"[ti] OR "umbrella review"[ti] OR "rapid evidence"[ti] OR "literature review"[ti] OR "evidence synthesis"[ti] OR "evidence summary"[ti] OR guideline*[ti]	3,725,993
7	#5 AND #6	6

References:

[Deprescribing Literature Search Strategy - US Deprescribing Research Network](#)

[Development and validation of search filters to identify articles on deprescribing in Medline and Embase | BMC Medical Research Methodology | Full Text \(biomedcentral.com\)](#)

[A systematic review of the emerging definition of 'deprescribing' with network analysis: implications for future research and clinical practice - PubMed \(nih.gov\)](#)

Cochrane Library: Cochrane Database of Systematic Reviews (CDSR), the Cochrane Central Register of Controlled Trials (CENTRAL), Cochrane Clinical Answers

Set #	Search	# of results
1	deprescri*:ti,ab,kw OR "de prescribing":ti,ab,kw OR deprescription*:ti,ab,kw OR ("inappropriate" NEAR prescri*):ti,ab,kw OR "inappropriate medication":ti,ab,kw OR ("potentially inappropriate" NEAR medication*):ti,ab,kw OR PIMs:ti,ab,kw OR PIM:ti,ab,kw OR ("appropriateness" NEAR medication*):ti,ab,kw OR "drug utilization review":ti,ab,kw OR "appropriate prescribing":ti,ab,kw OR polypharmacy:ti,ab,kw OR ("geriatric" NEAR pharmacotherap*):ti,ab,kw OR ("geriatric" NEAR pharmacol*):ti,ab,kw OR ((medication*:ti OR prescribing:ti OR prescription*:ti) AND (inappropriate*:ti OR ("over" NEAR prescri*):ti OR overus*:ti)) OR ((medication*:ti OR drugs:ti OR "drug therapy":ti OR prescription*:ti OR prescribing:ti) AND (inappropriate*:ti OR appropriate*:ti) AND (reduc*:ti OR discontinu*:ti OR withdraw*:ti OR cease:ti OR ceasing:ti OR cessation:ti OR "dose reduction":ti OR taper*:ti)) OR ((review*:ti OR assess*:ti OR	3,282

	evaluat*:ti OR screen*:ti OR STOPP:ti,ab,kw OR START:ti,ab,kw OR "STOPP START":ti,ab,kw OR "Beers Criteria":ti,ab,kw) AND (appropriate*:ti,ab,kw OR inappropriate*:ti,ab) AND ("drug utilization":ti OR medication:ti OR prescrib*:ti OR prescription*:ti OR "drug therapy":ti))	
2	#1 Limits: July 2023- Dec 2024 (07/01/2023 – 31/12/2023); Cochrane Reviews	3

Supplemental File 2. Excluded Studies, Background Studies, and Systematic Reviews

Excluded Studies

1. Impact of deprescribing for people with limited life expectancy. *Drug Ther Bull.* 2023 May;61(5):69. doi: 10.1136/dtb.2023.000012. PMID: 36882298. *Design*
2. Alharthi M, Wright D, Scott S, et al. Barriers and enablers to deprescribing for older people in care homes: The theory-based perspectives of pharmacist independent prescribers. *Res Social Adm Pharm.* 2023 May;19(5):746-52. doi: 10.1016/j.sapharm.2023.01.013. PMID: 36732210. *Design*
3. Aubert CE, Blum MR, Gastens V, et al. Prescribing, deprescribing and potential adverse effects of proton pump inhibitors in older patients with multimorbidity: an observational study. *CMAJ Open.* 2023 Jan-Feb;11(1):E170-e8. doi: 10.9778/cmajo.20210240. PMID: 36854455. *Design*
4. Balsom C, Pittman N, King R, et al. Impact of a pharmacist-administered deprescribing intervention on nursing home residents: a randomized controlled trial. *Int J Clin Pharm.* 2020 Aug;42(4):1153-67. doi: 10.1007/s11096-020-01073-6. PMID: 32494991. *Setting*
5. Baumgartner AD, Clark CM, LaValley SA, et al. Interventions to deprescribe potentially inappropriate medications in the elderly: Lost in translation? *J Clin Pharm Ther.* 2020 Jun;45(3):453-61. doi: 10.1111/jcpt.13103. PMID: 31873955. *Outcome*
6. Bighelli I, Rodolico A, Siafis S, et al. Antipsychotic polypharmacy reduction versus polypharmacy continuation for people with schizophrenia. *Cochrane Database of Systematic Reviews.* 2022(8). doi: 10.1002/14651858.CD014383.pub2. PMID: CD014383. *Intervention*
7. Blum MR, Sallevelt B, Spinewine A, et al. Optimizing Therapy to Prevent Avoidable Hospital Admissions in Multimorbid Older Adults (OPERAM): cluster randomised controlled trial. *Bmj.* 2021 Jul 13;374:n1585. doi: 10.1136/bmj.n1585. PMID: 34257088. *Setting*
8. Boersma MN, Huibers CJA, Drenth-van Maanen AC, et al. The effect of providing prescribing recommendations on appropriate prescribing: A cluster-randomized controlled trial in older adults in a preoperative setting. *Br J Clin Pharmacol.* 2019 Sep;85(9):1974-83. doi: 10.1111/bcp.13987. PMID: 31108564. *Design*
9. Boyd CM, Shetterly SM, Powers JD, et al. Evaluating the Safety of an Educational Deprescribing Intervention: Lessons from the Optimize Trial. *Drugs Aging.* 2024 Jan;41(1):45-54. doi: 10.1007/s40266-023-01080-y. PMID: 37982982. *Outcome*
10. Brokaar EJ, van den Bos F, Visser LE, et al. Deprescribing in Older Adults With Cancer and Limited Life Expectancy: An Integrative Review. *Am J Hosp Palliat Care.* 2022 Jan;39(1):86-100. doi: 10.1177/10499091211003078. PMID: 33739162. *Intervention*
11. Campbell NL, Perkins AJ, Khan BA, et al. Deprescribing in the Pharmacologic Management of Delirium: A Randomized Trial in the Intensive Care Unit. *J Am Geriatr Soc.* 2019 Apr;67(4):695-702. doi: 10.1111/jgs.15751. PMID: 30664239. *Setting*
12. Cateau D, Ballabeni P, Mena S, et al. Deprescribing in nursing homes: Protocol for nested, randomised controlled hybrid trials of deprescribing interventions. *Res Social Adm Pharm.* 2021 Apr;17(4):786-94. doi: 10.1016/j.sapharm.2020.05.026. PMID: 32622774. *Setting*

13. Cateau D, Ballabeni P, Niquille A. Effects of an interprofessional deprescribing intervention in Swiss nursing homes: the Individual Deprescribing Intervention (IDeI) randomised controlled trial. *BMC Geriatr*. 2021 Nov 19;21(1):655. doi: 10.1186/s12877-021-02465-7. PMID: 34798826. *Setting*
14. Cateau D, Ballabeni P, Niquille A. Effects of an interprofessional Quality Circle-Deprescribing Module (QC-DeMo) in Swiss nursing homes: a randomised controlled trial. *BMC Geriatr*. 2021 May 1;21(1):289. doi: 10.1186/s12877-021-02220-y. PMID: 33933030. *Setting*
15. Christopher CM, Kc B, Blebil A, et al. Clinical and Humanistic Outcomes of Community Pharmacy-Based Healthcare Interventions Regarding Medication Use in Older Adults: A Systematic Review and Meta-Analysis. *Healthcare (Basel)*. 2021 Nov 18;9(11). doi: 10.3390/healthcare9111577. PMID: 34828622. *Intervention*
16. Cicco S, M DA, Proietti M, et al. Antihypertensive treatment changes and related clinical outcomes in older hospitalized patients. *Eur J Clin Invest*. 2023 Apr;53(4):e13931. doi: 10.1111/eci.13931. PMID: 36453932. *Design*
17. Clarkson L, Hart L, Lam AK, et al. Reducing inappropriate polypharmacy for older patients at specialist outpatient clinics: a systematic review. *Curr Med Res Opin*. 2023 Apr;39(4):545-54. doi: 10.1080/03007995.2023.2185390. PMID: 36847597. *Not on topic*
18. Cochrane Special Collections. Achieving sustainable healthcare through deprescribing of unnecessary medications: making sense of the evidence. Cochrane Library. 2022. doi: SC000054. *Design*
19. Crotty M, Whitehead C, Rowett D, et al. An outreach intervention to implement evidence based practice in residential care: a randomized controlled trial [ISRCTN67855475]. *BMC Health Serv Res*. 2004 Apr 6;4(1):6. doi: 10.1186/1472-6963-4-6. PMID: 15066200. *Setting*
20. Crutzen S, Baas G, Denig P, et al. Pharmacist-led intervention aimed at deprescribing and appropriate use of cardiometabolic medication among people with type 2 diabetes. *Res Social Adm Pharm*. 2023 May;19(5):783-92. doi: 10.1016/j.sapharm.2022.11.009. PMID: 36740525. *Design*
21. Curtin D, Jennings E, Daunt R, et al. Deprescribing in Older People Approaching End of Life: A Randomized Controlled Trial Using STOPPFrail Criteria. *J Am Geriatr Soc*. 2020 Apr;68(4):762-9. doi: 10.1111/jgs.16278. PMID: 31868920. *Setting*
22. Dagneu SB, Binega Mekonnen G, Gebeye Zeleke E, et al. Clinical Pharmacist Intervention on Drug-Related Problems among Elderly Patients Admitted to Medical Wards of Northwest Ethiopia Comprehensive Specialized Hospitals: A Multicenter Prospective, Observational Study. *Biomed Res Int*. 2022;2022:8742998. doi: 10.1155/2022/8742998. PMID: 35898673. *Design*
23. Debacq C, Bourgueil J, Aidoud A, et al. Persistence of Effect of Medication Review on Potentially Inappropriate Prescriptions in Older Patients Following Hospital Discharge. *Drugs Aging*. 2021 Mar;38(3):243-52. doi: 10.1007/s40266-020-00830-6. PMID: 33474671. *Design*
24. Dellinger JK, Pitzer S, Schaffler-Schaden D, et al. Improving medication appropriateness in nursing homes via structured interprofessional medication-review supported by health information technology: a non-randomized controlled study. *BMC Geriatr*. 2020 Nov 26;20(1):506. doi: 10.1186/s12877-020-01895-z. PMID: 33243145. *Design*

25. Deng Z, Thompson W, Korenvain C, et al. Benefits and Harms of Deprescribing Antihyperglycemics for Adults With Type 2 Diabetes: A Systematic Review. *Can J Diabetes*. 2022 Jul;46(5):473-9. doi: 10.1016/j.cjcd.2022.01.009. PMID: 35739041. *Intervention*
26. Eastern AHSN. Opioid deprescribing toolkit. n.d. <https://easternahsn.org/about-us/our-projects/opioid-deprescribing-toolkit/>. Accessed on September 22, 2023. *Toolkit*
27. Elbeddini A, Sawhney M, Tayefehchamani Y, et al. Deprescribing for all: a narrative review identifying inappropriate polypharmacy for all ages in hospital settings. *BMJ Open Qual*. 2021 Jul;10(3). doi: 10.1136/bmjoq-2021-001509. PMID: 34230053. *Design*
28. Etherton-Beer C, Page A, Naganathan V, et al. Deprescribing to optimise health outcomes for frail older people: a double-blind placebo-controlled randomised controlled trial-outcomes of the Opti-med study. *Age Ageing*. 2023 May 1;52(5). doi: 10.1093/ageing/afad081. PMID: 37247404. *Setting*
29. Evrard P, Henrard S, Foulon V, et al. Benzodiazepine Use and Deprescribing in Belgian Nursing Homes: Results from the COME-ON Study. *J Am Geriatr Soc*. 2020 Dec;68(12):2768-77. doi: 10.1111/jgs.16751. PMID: 32786002. *Setting*
30. Farhat A, Al-Hajje A, Lang PO, et al. Impact of Pharmaceutical Interventions with STOPP/START and PIM-Check in Older Hospitalized Patients: A Randomized Controlled Trial. *Drugs Aging*. 2022 Nov;39(11):899-910. doi: 10.1007/s40266-022-00974-7. PMID: 36175740. *Intervention*
31. Fournier A, Anrys P, Beuscart JB, et al. Use and Deprescribing of Potentially Inappropriate Medications in Frail Nursing Home Residents. *Drugs Aging*. 2020 Dec;37(12):917-24. doi: 10.1007/s40266-020-00805-7. PMID: 33047252. *Setting*
32. Gedde MH, Husebo BS, Mannseth J, et al. Less Is More: The Impact of Deprescribing Psychotropic Drugs on Behavioral and Psychological Symptoms and Daily Functioning in Nursing Home Patients. Results From the Cluster-Randomized Controlled COSMOS Trial. *Am J Geriatr Psychiatry*. 2021 Mar;29(3):304-15. doi: 10.1016/j.jagp.2020.07.004. PMID: 32753339. *Setting*
33. GeriatricsCareOnline.org. AGS Deprescribing Toolkit. n.d. <https://geriatricscareonline.org/toc/ags-deprescribing-toolkit/TK013>. Accessed on September 22, 2023. *Toolkit*
34. Groot Kormelinck CM, van Teunenbroek CF, Zuidema SU, et al. Process evaluation of a tailored intervention to Reduce Inappropriate psychotropic Drug use in nursing home residents with dementia. *BMC Geriatr*. 2021 Jul 3;21(1):414. doi: 10.1186/s12877-021-02357-w. PMID: 34217230. *Outcome*
35. Ha M, Furman A, Al Rihani SB, et al. Pharmacist-driven interventions to de-escalate urinary antimuscarinics in the Programs of All-Inclusive Care for the Elderly. *J Am Geriatr Soc*. 2022 Nov;70(11):3230-8. doi: 10.1111/jgs.17965. PMID: 35900034. *Design*
36. Hickman E, Seawoodharry M, Gillies C, et al. Deprescribing in cardiometabolic conditions in older patients: a systematic review. *Geroscience*. 2023 Jul 5. doi: 10.1007/s11357-023-00852-z. PMID: 37402905. *Intervention*

37. Hirdes JP, Major J, Didic S, et al. A Canadian Cohort Study to Evaluate the Outcomes Associated with a Multicenter Initiative to Reduce Antipsychotic Use in Long-Term Care Homes. *J Am Med Dir Assoc*. 2020 Jun;21(6):817-22. doi: 10.1016/j.jamda.2020.04.004. PMID: 32493650. *Design*
38. Jungo KT, Ansorg AK, Floriani C, et al. Optimising prescribing in older adults with multimorbidity and polypharmacy in primary care (OPTICA): cluster randomised clinical trial. *Bmj*. 2023 May 24;381:e074054. doi: 10.1136/bmj-2022-074054. PMID: 37225248. *Not on topic*
39. Junius-Walker U, Krause O, Thürmann P, et al. Drug Safety for Nursing-Home Residents- Findings of a Pragmatic, Cluster-Randomized, Controlled Intervention Trial in 44 Nursing Homes. *Dtsch Arztebl Int*. 2021 Oct 22;118(42):705-12. doi: 10.3238/arztebl.m2021.0297. PMID: 34366004. *Intervention*
40. Juraschek SP, Cluett JL, Belanger MJ, et al. Effects of Antihypertensive Deprescribing Strategies on Blood Pressure, Adverse Events, and Orthostatic Symptoms in Older Adults: Results From TONE. *Am J Hypertens*. 2022 Apr 2;35(4):337-46. doi: 10.1093/ajh/hpab171. PMID: 34718403. *Intervention*
41. Kaminaga M, Komagamine J, Tatsumi S. The effects of in-hospital deprescribing on potential prescribing omission in hospitalized elderly patients with polypharmacy. *Sci Rep*. 2021 Apr 26;11(1):8898. doi: 10.1038/s41598-021-88362-w. PMID: 33903645. *Design*
42. Kim JL, Lewallen KM, Hollingsworth EK, et al. Patient-Reported Barriers and Enablers to Deprescribing Recommendations During a Clinical Trial (Shed-MEDS). *Gerontologist*. 2023 Mar 21;63(3):523-33. doi: 10.1093/geront/gnac100. PMID: 35881109. *Outcome*
43. Kornholt J, Feizi ST, Hansen AS, et al. Medication changes implemented during medication reviews and factors related to deprescribing: Posthoc analyses of a randomized clinical trial in geriatric outpatients with polypharmacy. *Br J Clin Pharmacol*. 2023 Nov;89(11):3291-301. doi: 10.1111/bcp.15805. PMID: 37254818. *Setting*
44. Kose E, Endo H, Hori H, et al. Association of Pharmacist-led Deprescribing Intervention with the Functional Recovery in Convalescent Setting. *Pharmazie*. 2022 May 1;77(5):165-70. doi: 10.1691/ph.2022.2323. PMID: 35655381. *Design*
45. Kua CH, Yeo CYY, Tan PC, et al. Association of Deprescribing With Reduction in Mortality and Hospitalization: A Pragmatic Stepped-Wedge Cluster-Randomized Controlled Trial. *J Am Med Dir Assoc*. 2021 Jan;22(1):82-9.e3. doi: 10.1016/j.jamda.2020.03.012. PMID: 32423694. *Setting*
46. Lamarre M, Marcotte M, Laurin D, et al. Discontinuation of bisphosphonates in seniors: a systematic review on health outcomes. *Arch Osteoporos*. 2021 Sep 15;16(1):133. doi: 10.1007/s11657-021-01000-w. PMID: 34524561. *Intervention*
47. Lee JW, Boyd CM, Leff B, et al. Tailoring a home-based, multidisciplinary deprescribing intervention through clinicians and community-dwelling older adults. *J Am Geriatr Soc*. 2023 May;71(5):1663-6. doi: 10.1111/jgs.18186. PMID: 36515689. *Design*
48. Maust DT, Takamine L, Wiechers IR, et al. Strategies Associated With Reducing Benzodiazepine Prescribing to Older Adults: A Mixed Methods Study. *Ann Fam Med*. 2022 Jul-Aug;20(4):328-35. doi: 10.1370/afm.2825. PMID: 35879067. *Outcome*

49. McDonald EG, Wu PE, Rashidi B, et al. The MedSafer Study-Electronic Decision Support for Deprescribing in Hospitalized Older Adults: A Cluster Randomized Clinical Trial. *JAMA Intern Med.* 2022 Mar 1;182(3):265-73. doi: 10.1001/jamainternmed.2021.7429. PMID: 35040926. *Setting*
50. Mozer C, Madden W, Cursio J, et al. Rates of Inappropriate Dosing in Older Adults at an Urban, Academic Hospital. *Am J Med Qual.* 2021 Nov-Dec 01;36(6):469-70. doi: 10.1097/01.Jmq.0000751156.52061.64. PMID: 34038914. *Design*
51. Mucherino S, Casula M, Galimberti F, et al. The Effectiveness of Interventions to Evaluate and Reduce Healthcare Costs of Potentially Inappropriate Prescriptions among the Older Adults: A Systematic Review. *Int J Environ Res Public Health.* 2022 May 31;19(11). doi: 10.3390/ijerph19116724. PMID: 35682331. *Not on topic*
52. National Hospice and Palliative Care Organization. Hospice Medication Deprescribing Toolkit. November 2020. https://www.nhpco.org/wp-content/uploads/NHPCO_Deprescribing_Toolkit.pdf. *Toolkit*
53. O'Mahony D, Gudmundsson A, Soiza RL, et al. Prevention of adverse drug reactions in hospitalized older patients with multi-morbidity and polypharmacy: the SENATOR* randomized controlled clinical trial. *Age Ageing.* 2020 Jul 1;49(4):605-14. doi: 10.1093/ageing/afaa072. PMID: 32484850. *Setting*
54. Pavon JM, Davidson S, Sloane R, et al. Deprescribing electronic case reviews for older veterans at risk for falls: Effects on drug burden and falls. *J Am Geriatr Soc.* 2024 Feb;72(2):433-43. doi: 10.1111/jgs.18650. PMID: 37941488. *Design*
55. Persell SD, Brown T, Doctor JN, et al. Development of High-Risk Geriatric Polypharmacy Electronic Clinical Quality Measures and a Pilot Test of EHR Nudges Based on These Measures. *J Gen Intern Med.* 2022 Aug;37(11):2777-85. doi: 10.1007/s11606-021-07296-1. PMID: 34993860. *Not on topic*
56. Pruskowski JA, Springer S, Thorpe CT, et al. Does Deprescribing Improve Quality of Life? A Systematic Review of the Literature. *Drugs Aging.* 2019 Dec;36(12):1097-110. doi: 10.1007/s40266-019-00717-1. PMID: 31598908. *Intervention*
57. Quek HW, Etherton-Beer C, Page A, et al. Deprescribing for older people living in residential aged care facilities: Pharmacist recommendations, doctor acceptance and implementation. *Arch Gerontol Geriatr.* 2023 Apr;107:104910. doi: 10.1016/j.archger.2022.104910. PMID: 36565605. *Setting*
58. Rantsi M, Pitkälä KH, Kautiainen H, et al. Cost-effectiveness of an educational intervention to reduce potentially inappropriate medication. *Age Ageing.* 2022 May 1;51(5). doi: 10.1093/ageing/afac112. PMID: 35604803. *Design*
59. Rashid R, Chang C, Niu F, et al. Evaluation of a Pharmacist-Managed Nonsteroidal Anti-Inflammatory Drugs Deprescribing Program in an Integrated Health Care System. *J Manag Care Spec Pharm.* 2020 Jul;26(7):918-24. doi: 10.18553/jmcp.2020.26.7.918. PMID: 32584681. *Design*
60. Reeve E, Jordan V, Thompson W, et al. Withdrawal of antihypertensive drugs in older people. *Cochrane Database Syst Rev.* 2020 Jun 10;6(6):Cd012572. doi: 10.1002/14651858.CD012572.pub2. PMID: 32519776. *Intervention*

61. Sacarny A, Barnett ML, Le J, et al. Effect of Peer Comparison Letters for High-Volume Primary Care Prescribers of Quetiapine in Older and Disabled Adults: A Randomized Clinical Trial. *JAMA Psychiatry*. 2018 Oct 1;75(10):1003-11. doi: 10.1001/jamapsychiatry.2018.1867. PMID: 30073273. *Outcome*
62. Sanyal C, Turner JP, Martin P, et al. Cost-Effectiveness of Pharmacist-Led Deprescribing of NSAIDs in Community-Dwelling Older Adults. *J Am Geriatr Soc*. 2020 May;68(5):1090-7. doi: 10.1111/jgs.16388. PMID: 32105355. *Outcome*
63. Sawan MJ, Moga DC, Ma MJ, et al. The value of deprescribing in older adults with dementia: a narrative review. *Expert Rev Clin Pharmacol*. 2021 Nov;14(11):1367-82. doi: 10.1080/17512433.2021.1961576. PMID: 34311630. *Design*
64. Seidu S, Kunutsor SK, Topsever P, et al. Deintensification in older patients with type 2 diabetes: A systematic review of approaches, rates and outcomes. *Diabetes Obes Metab*. 2019 Jul;21(7):1668-79. doi: 10.1111/dom.13724. PMID: 30938038. *Intervention*
65. Seto H, Ishimaru N, Ohnishi J, et al. Multidisciplinary Team Deprescribing Intervention for Polypharmacy in Elderly Orthopedic Inpatients: A Propensity Score-matched Analysis of a Retrospective Cohort Study. *Intern Med*. 2022 Aug 15;61(16):2417-26. doi: 10.2169/internalmedicine.8929-21. PMID: 35022357. *Design*
66. Sheehan OC, Gleason KS, Bayliss EA, et al. Intervention design in cognitively impaired populations-Lessons learned from the OPTIMIZE deprescribing pragmatic trial. *J Am Geriatr Soc*. 2023 Mar;71(3):774-84. doi: 10.1111/jgs.18148. PMID: 36508725. *Outcome*
67. Sheppard JP, Burt J, Lown M, et al. Effect of Antihypertensive Medication Reduction vs Usual Care on Short-term Blood Pressure Control in Patients With Hypertension Aged 80 Years and Older: The OPTIMISE Randomized Clinical Trial. *Jama*. 2020 May 26;323(20):2039-51. doi: 10.1001/jama.2020.4871. PMID: 32453368. *Not on topic*
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Supplemental File 3. Cochrane Risk of Bias for RCTs

eTable 1. Cochrane Risk of Bias for RCTs

Author, Year	Random	Allocation Concealment	Blinding Participants	Blinding Outcome Assessment	Selective Reporting	Attrition
Amorim, 2024 ¹	Low Risk	Uncertain Risk	Low Risk	Low Risk	Low Risk	Low Risk
Bayliss, 2022 ²	Low Risk	Low Risk	High Risk	Low Risk	Low Risk	Low Risk
Campbell, 2021 ³	Low Risk	Uncertain Risk	High Risk	Low Risk	Low Risk	High Risk
Harnisch, 2024 ⁴	Low Risk	Low Risk	Low Risk	Low Risk	Low Risk	Low Risk
Herrinton, 2023 ⁵	Low Risk	Low Risk	High Risk	Low risk	Low Risk	Low Risk
Jamieson, 2023 ⁶	Low Risk	Low Risk	Uncertain Risk	Uncertain Risk	Low Risk	Low Risk
Kouladjian, 2021 ⁷	Low Risk	Uncertain Risk	High Risk	High Risk	Low Risk	Uncertain Risk
Kuntz, 2019 ⁸	Low Risk	Uncertain Risk	High Risk	Low Risk	Low Risk	Low Risk
Mahlknecht, 2021 ⁹	Low Risk	Low Risk	High Risk	High Risk	Low Risk	Low Risk
Mak, 2022 ¹⁰	Low Risk	Low Risk	Low Risk	Low Risk	Low Risk	Low Risk
McCarthy, 2022 ¹¹	Low Risk	Low Risk	High Risk	High Risk	Low Risk	Low Risk
Mortsiefer, 2023 ¹²	Low Risk	Low Risk	High Risk	High Risk	Low Risk	Uncertain Risk
Phelan, 2024 ¹³	Low Risk	Low Risk	Uncertain Risk	Low Risk	Low Risk	Low Risk
Rieckert, 2020 ¹⁴	Low Risk	Low Risk	High Risk	Low Risk	Low Risk	Uncertain Risk
Rudolf, 2021 ¹⁵	Low Risk	Low Risk	Uncertain Risk	High Risk	Low Risk	Uncertain Risk
Wallis, 2022 ¹⁶	Low Risk	Low Risk	High Risk	Low Risk	Low Risk	Uncertain Risk
Zechmann, 2020 ¹⁷	Low Risk	Uncertain Risk	Uncertain Risk	Uncertain Risk	Low Risk	Low Risk

Note: For attrition, 80% followup used to assign low risk; 70%–80% = uncertain risk, <70% = high risk

eTable 2. GRADE Certainty of Evidence Table

Intervention	Study limitations	Consistency	Directness	Precision	Certainty of evidence
Deprescribing interventions to reduce polypharmacy	No serious limitations	Serious inconsistency	No serious indirectness	No serious imprecision	Moderate

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